INDIANA TECH

the BIG ORANGE book

2010/11 Academic Catalog

www.indianatech.edu

Welcome to Indiana Tech

Congratulations on making an excellent choice for your education! Yes, I think Indiana Tech is an excellent university. But, I'm also talking about a more basic choice – the choice you've made to pursue a college degree. That one choice will open the door to a wide array of opportunities throughout your future.

Wherever you are on your path to degree completion, a freshman just starting out or a senior near the end of the journey, I hope you continue to make good choices. This catalog contains important details about what we require of you, but please remember that these requirements are just the beginning. I encourage you to go beyond the basics – choose compelling electives to broaden your mind, choose a minor to supplement your major, choose special projects or internships to sharpen and demonstrate your skills, choose to join a student organization to build relationships.

I am very proud of all that Indiana Tech has to offer you. We work hard to provide career-focused degree programs, a beautiful campus, a variety of campus activities, and all of the support you need to be successful. However, you must choose to take advantage of all the opportunities and services available to you.

I look forward to seeing you around campus!

Sincerely,

Arthur E. Snyder, Ed.D.
President

Table of Contents

This catalog is your all-in-one resource for everything Indiana Tech. You'll find detailed information about each of our degree programs, descriptions of classes, financial aid information and the requirements for admissions and graduation.

Before you dig in, it may help to know how Indiana Tech is organized. The university's traditional day school programs are divided into three different colleges, each covering a different area of study. There is the College of Business, College of Engineering, and College of General Science. There is also the School of Computer Science, which is part of the College of Engineering, and the Center for Criminal Sciences and School of Education, both part of the College of General Studies.

Indiana Tech is also home to the College of Professional Studies, which offers accelerated courses for mature learners. The College of Professional Studies offers many of the same undergraduate degrees found in the other three colleges as well as several master's degrees and a Ph.D.

Indiana Tech's traditional day school is located in Fort Wayne, Indiana. Students enrolled in the College of Professional Studies may attend classes at various locations convenient for them throughout Indiana. Many programs are also available online.

2010/11 Academic Calendar

2010 Fall Semester

New Students Arrive	Sunday	August 22
Registration & Orientation for New Students	Mon-Tues	August 23-24
First Day of Classes	Wednesday	August 25
Last Day to Add/Drop, Refund Individual Class	Tuesday	August 31
Late Registration Ends	Tuesday	August 31
Mid-term	Friday	October 15
Last Day to Withdraw from a Class	Tuesday	October 26
Spring/WInter Pre-registration Begins	Monday	November 8
Thanksgiving Break	Tuesday	November 23
Classes Resume	Monday	November 29
Spring/Winter Pre-registration Ends	Friday	December 3
Last Day of Classes	Friday	December 10
Final Exam	Mon–Wed.	December 13-15
Last Day to Return Textbooks	Wednesday	December 15

2011 Spring Semester

New Students Arrive	Sunday	January 16
No Classes, M. L. King Birthday,	Monday	January 17
Registration & Orientation	Tuesday	January 18
First Day of Classes	Wednesday	January 19
Last Day to Add/Drop, Refund Individual Class	Tuesday	January 25
Late Registration Ends	Tuesday	January 25
Mid-term	Friday	March 11
Spring Break	Friday	March 11
Classes Resume	Monday	March 21
Last Day to Withdraw from a Class	Tuesday	March 29
Summer/Fall Pre-registration Begins	Monday	April 11
Summer/Fall Pre-registration Ends	Friday	April 29
Classes End	Friday	May 6
Final Exam	Mon–Wed.	May 9-11
Last Day to Return Textbooks	Wednesday	May 11
Commencement	Saturday	May 14

2011 Summer Sessions – Dates to be announced

Our Philosophy

Core Purpose
To provide career-focused, professional programs of higher education

Our Mission
Indiana Tech provides learners of all ages, at various career levels, undergraduate and graduate professional education in the areas of business, computer studies, engineering, and other professional concentrations; prepares them for active participation, career development and advancement, and leadership in the complex, global society of the 21st century; and motivates them toward a life of significance and worth.

Core Values
- Respect: Treating all stakeholders fairly and equitably
- Commitment: Affirming an unceasing dedication to educating the whole learner
- Honesty: Demonstrating truthful behavior in an open environment
- Passion: Possessing a burning desire to fulfill our purpose, mission, and vision
- Integrity: Behaving consistently with mission and core values

Operational Imperatives
- Manage the university's finances in a fiscally responsible manner
- Maintain a consistent and well-planned budget process and review
- Sustain a pleasant work environment, one that fosters challenge and productivity
- Reach our goals through team relationships across all departments
- Strive to contribute to our local communities in a positive way
- Beautify the natural aesthetics of our campuses
- Ensure a drug-free and harassment-free workplace

Vision
Indiana Tech is dedicated to preparing our students for professional and personal success in the real world. To that end, we are committed to the following:

- Striving for academic excellence and continuous improvement in all programs
- Strengthening and building upon our commitment to relationship-based education
- Attracting, developing, and retaining dedicated and excellent teachers, staff, and administrators committed to making a significant difference in the lives of our students and the community
- Integrating theory and practice through learning activities encompassing real-world experience and scholarly exploration.
- Expanding the scope of programs offered, thereby giving students more career options
- Giving each student the support and encouragement needed to stay in school to complete their education
- Emphasizing ethics and integrity in all that we do
- Fostering a life of balance among academics, social and cultural activities
- Increasing the geographic diversity of our student population
- Providing professional development and life-long learning
- Evaluating each decision by asking, "Does It Positively Impact Students?" (DIPIS)

Faculty

Listed below are the full-time faculty, emeritus faculty, and academic staff of Indiana Tech with the year of initial appointment given in parentheses.

Timothy Allwein (2000)
Associate Professor of Business Administration
B.A., Indiana University, 1979
M.B.A., Indiana University, 1980
Th.M., Dallas Theological Seminary, 1986

David A. Aschliman (2002)
Dean, College of Engineering
Associate Professor of Mechanical Engineering
B.S.M.E., Purdue University, 1976
M.S.M.E., Purdue University, 1987

Shankar Atre (2008)
Associate Professor of Electrical Engineering
B.S., Nagpur University, 1962
B.E., Nagpur University, 1965
M.E., M.S. University of Baroda, 1968
Ph.D., Indian Institute of Technology, 1973

Marc Barnes (2009)
Associate Professor of Psychology
B.A., University of Nebraska
M.P.E., University of Nebraska
Ph.D., University of Nebraska

Justin Boyce (2010)
Associate Professor of Psychology
B.S., University of the Virgin Islands, 1994
M.A., University of the Virgin Islands, 1996
Ph.D., West Virginia University, 2000

Margaret A. Canales (2001)
Associate Professor of Industrial and Manufacturing Engineering
B.S.M.E., Tri-State University, 1985
M.B.A., Indiana Wesleyan University, 1992
Ph.D., Columbus University, 2001
Certified Instructor by the National Institute of Standards and Technology

Steve Dusseau (1996)
Professor of Industrial and Manufacturing Engineering
B.S.Met.E., Michigan Technological University, 1989
M.B.A., Northwest Missouri State University, 1993
Ph.D., University of Missouri-Rolla, 1996

Craig Dyer (2006)
Assistant Professor of Sports Management
B.S., Indiana State University, 1995
M.B.A., Indiana Tech, 2004

Zachary Engan (2008)
Assistant Professor of Mechanical Engineering
B.S., Bradley University, 1985
M.S., Bradley University, 1990

Robert J. Fontaine (2000)
Associate Professor of Information Systems
B.S.E.E., Union College, 1987
M.B.A., Indiana Tech, 2002

Robert Freewalt (2002)
Associate Professor of Accounting
B.S., University of Illinois, 1971
M.B.A., Northwestern University, 1974
Certified Public Accountant

Dennis Gayle (2010)
Vice President of Academic Affairs
B.A., University of the West Indies (1970)
P.G.Dip.,Oxford University (1972)
M.S., London School of Economics and Political Science (1975)
Ph.D., University of California, Los Angeles (1982)

Tamara Hamilton (2010)
NCATE Coordinator for Education Program
B.S., University of Memphis, 1999
M.E.d. Union University, 2003
+45 Endorsement, Walden University, 2007

Sherrill L. Hamman (1985)
Associate Professor of Business Administration
B.S., Ball State University, 1976
M.S.Ed., Indiana University, 1996

Gary Hawkins (2008)
Assistant Professor of Business Administration
B.S., Ball State University
M.A., Ball State University

Jerome Heaven (2005)
Assistant Professor of Mathematics
B.S., University of the West Indies
M.S., Temple University, 2000

Steven F. Hundersmarck, Ph.D. (2008)
Director, Center for Criminal Justice
B.S., Madonna University, 1991
M.A., Central Michigan University, 1996
Ph.D., Michigan State University, 2004

Rex W. Joyner (1990)
Professor of Physics
B.S., Rose-Hulman Institute of Technology, 1980
M.S., University of Notre Dame, 1983
Ph.D., University of Notre Dame, 1988

Amber E. Katris (2009)
Assistant Professor of Accounting and Finance
B.S., Purdue University, Accounting, 1994
M.B.A., Northwestern University,
Kellogg School of Management, 2001

Dinesh Lad (2006)
Assistant Professor of Computer Engineering
B.S., Sardar Patel University
M.S., University of Puerto Rico

Brian Lewandoski (2008)
Software Engineering Program Director
Instructor of Software Engineering
B.S., Indiana Tech, 2008

Randall Liechty (2004)
Assistant Professor of Mathematics
Developmental Mathematics Specialist
B.A., Ball State University, 1970
M.A., Purdue University, 1973

Steve M. Malloris (2002)
Associate Professor of English
B.A., Indiana University, 1976
M.L.S., Indiana University, 1999
M.A., Butler University, 2008

Julie Mansfield (2002)
Associate Professor of Computer Science
High School Outreach Coordinator, Computer Studies
B.S., Indiana Tech, 1993
M.B.A., Indiana Tech, 2004
CCNA, Cisco Certified Networking Associate
CCAI, Cisco Certified Academy Instructor

Martin F. Mansfield (1984)
Associate Professor of Computer Science
Control Data Institute, 1974
B.S., University of Iowa, 1982
M.S.C.S., Ball State University, 1992

Susan McGrade (2002)
Associate Professor of English
B.A., Earlham College, 1996
M.A., Indiana University, 2002
Candidate-Ph.D. Indiana University of Pennsylvania

Gary A. Messick (1987)
Associate Dean, School of Computer Sciences
Associate Professor of Chemistry
B.S.Ch., Purdue University, 1970
M.S., Purdue University, 1975

David O. Middleton (1978)
Associate Professor of Accounting
B.S., Indiana University, 1971
M.S., Indiana University, 1980
C.M.A.
Certified Public Accountant

Maurice Napper (2008)
Developmental Specialist
B.S., Indiana Tech, 2006

Andrew Nwanne (2006)
Associate Dean, College of Professional Studies
Associate Professor of Business
B.A., Bishop College, 1979
M.S., Amberton University, 1982
Ph.D., University of North Texas, 1986

Alexander Odemba (2007)
Assistant Professor of Business Administration
M.B.A., Fordham University, 1987
M.A. Economics, University of Notre Dame, 2001
Ph.D., University of Notre Dame, 2005

Maximo Ortega (2006)
Assistant Professor of Industrial and
Manufacturing Engineering
B.S., Chihuahua Institute of Technology, Mexico, 1982
M.S., Research and Advanced Studies Center, Mexico, 1990
M.S., Juarez institute of Technology, Mexico, 1995
Ph.D., State University of New York at Buffalo, 2001

Barbara Perry (2006)
Dean, College of General Studies
Associate Professor of Education
B.A., University of Michigan, 1971
M.S., Robert Morris College. 1982
Ed.D., University of Memphis. 2005

Jack Phlipot (2005)
Associate Professor and Program Coordinator
of Biomedical Engineering
B.S., Bowling Green State University, 1986
M.B.A., Indiana Tech, 2004

Kenneth Rauch (2010)
Director, Ph.D. in Global Leadership
Associate Professor of Leadership
A.S., Purdue University, 1987
B.S., Indiana Wesleyan University, 1989
M.S., Indiana University, 1992
Ed.D., Indiana Wesleyan University, 2007

Faculty
(continued)

John Renie (2010)
Associate Professor of Mechanical Engineering
B.S., Purdue University, 1974
M.S., Purdue University, 1976
Ph.D., Purdue University, 1982
Postdoctoral Fellowship, Purdue University, 1983

Cortney Robbins (2007)
Assistant Professor of English
B.A. Ball State University, 2004
M.A. Ball State University, 2007

Beth A. Robinson (2002)
Associate Professor of Therapeutic Recreation
B.S., Northwest Missouri State University, 1992
M.A., University of Nebraska at Omaha, 2000

Edward Ruppel (2007)
Assistant Professor of Business Administration
B.S.B.A., LaSalle University, 1972
M.B.A., Xavier University, 1982

Eva Sagan (2004)
Assistant Professor of Mathematics
B.A., Beloit College, 1993
M.B.A., University of Illinois, 1995
M.Ed., University of Georgia, 1997

James Schaffer (1997)
Associate Professor of Business Administration
B.A., Oral Roberts University, 1997
M.S., Oklahoma University, 1981
Ph.D., Indiana University, 2000

Angela Schuricht (2010)
Assistant Professor of English
B.S., Ball State University, 1997
M.A., Northern Arizona University, 2003

Constance Scott (2005)
Director, McMillen Library
B.A., Indiana State University
M.L.S., University of Wisconsin-Milwaukee

Mary C. Scudder (1997)
Director of Freshman College
Assistant Professor of Social Sciences
B.A., Purdue University, 1984
M.S., St. Francis College, 1994

Brad Shank (2002)
Associate Professor of Business
B.S., Purdue University, 1990
M.A., Ball State University, 1995

Arthur E. Snyder (2003)
President
B.S., Barry University
M.B.A., Barry University
Ed.D., Wilmington College

Kim Spielman (2007)
Associate Professor of Criminal Science
B.S., Indiana University, 1982
M.S., Indiana University, 1984
J.D., Ohio Northern University, Pettit College of Law, 1986

Janice Thompson (2008)
Associate Professor of Education
Director of Field Experience and Student Teaching
B.A., Illinois State University, 1976
M.A., Adams State College, 1992
Ph.D., University of Southern Mississippi, 1998

Cindy Price Verduce (2008)
Director, Career Planning and Development
B.A., University of South Carolina
M.Ed., University of South Carolina

Lori J. Wachtman (2000)
Academic Skills Specialist
Instructor of English
B.A., Concordia University-Wisconsin, 1991
M.A., Vermont College, 1996

Cheryl Lynne Walker (2010)
NCATE Coordinator for Education Program
B.S., Baylor University, 1980
M.Ed., University of Memphis, 1981
M.A., Fuller Theological Seminary, 1985

Jeffrey L. Walls (1989)
Professor of Business Administration
B.S., Indiana University, 1980
M.B.A., St. Francis College, 1986
Ed.D., Ball State University, 1998
Senior Professional in Human Resources

Danielle Witzigreuter (2008)
Director, Title III
B.A., Ball State University, 1998
M.A., Ball State University, 2000

Board of Trustees

Arthur E. Snyder, Ed.D.
President of the University
Indiana Tech

Robert A. Wagner, Chairman
Attorney
Shambaugh, Kast, Beck & Williams

Donald R. Willis, Vice Chairman
Chairman
FourthWave, LLC

Jeanne E. Longsworth, Secretary
Partner
Longsworth Law Offices, LLC

Cheri A. Becker
Executive Director
Leadership Fort Wayne

Steven R. Brody
Principal
Brody Consulting, LLC

Janet C. Chrzan, CPA
Principal
Vision Management Consulting

Jeffrey L. Walls, Ed.D., SPHR, Faculty Representative
Professor of Business Administration
Indiana Tech

H. Robert Gill
Principal
The Topaz Group

Diane S. Humphrey
Retired Teacher

Eric J. Jenkinson, M.D.
Sports Medicine Specialist
Orthopedics Northeast

Lawrence H. Lee
President and Owner
Leepoxy Plastics, Inc. and Midwest Epoxy Applicators, Inc.

Patricia Schaefer
Retired Director
Muncie Public Library System

Gregg C. Sengstack
Senior Vice President and President of
International & Fueling Group
Franklin Electric Co.

Nicole R. Turner-Ridley
Director of Projects
LCMS National Housing Support Corp.

Audra J. Wilcoxson, Alumni Board Representative
Independent Consultant / Business Manager
BeautiControl / National Automotive and Truck Museum
of the United States

Edwin C. Metcalfe, Chairman Emeritus
Retired Vice President and General Manager
WPTA-TV Pulitzer

Paul W. Seitz, Chairman Emeritus
Retired Chairman of Board
Erie-Haven, Inc.

Accreditation

Higher Learning Commission

Indiana Tech is accredited by The Higher Learning Commission and is a member of the North Central Association of Colleges and Schools, the regional accrediting agency for the nineteen north central states.

The Higher Learning Commission of NCA
30 North LaSalle Street, Suite 2400
Chicago, Illinois 60602-2504
Phone: (312) 263-0456

ABET

The electrical engineering and mechanical engineering degree programs are also accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology (ABET).

Government Regulations

The university is approved and officially recognized by the U.S. Office of Education and the U.S. State Department, and is approved by the State Approval Agency for the enrollment of veterans and eligible persons.

Degree Offerings

College of Business

Accounting, B.S. Acc., A.S.Acc.
Business Administration, B.S.B.A.
Concentrations:
Finance
Health Care Administration*
Human Resources
Management
Management Information Systems*
Marketing
Sports Management
Business Administration, A.S.B.A.
Concentrations
Management
Production Management*
Business Administration, M.B.A.*
Concentrations
Accounting
Management
Human Resources
Marketing
Health Care Management
Global Leadership, Ph.D.*
Specialties:
Academic Administration
Organization Management
Organizational Leadership, B.S.O.L.* , M.S.O.L.*
Management, M.S.M.*

College of Engineering

Biomedical Engineering, B.S.B.M.E.
Computer Engineering, B.S.Cp.E.
Electrical Engineering, B.S.E.E.
Energy Engineering, B.S. En.E.
Industrial and Manufacturing Engineering, B.S.I.M.E., A.S.I.M.E.*
Mechanical Engineering, B.S.M.E.
Engineering Management, M.S.E.*

School of Computer Sciences

Computer Security and Investigation, B.S.C.S.I.
Computer Science, B.S.C.S./B.A.C.S.
Digital Graphics and Design, A.S.D.G.
Information Systems, B.S.I.S; B.A.I.S.
Networking, B.S. NET
Network Management, A.S.N.M.
Software Engineering, B.S.S.E.
Optional Concentrations:
Systems
Game Development
Web Design, A.S.W.D.
Web Development, B.S.W.D.

College of General Studies

Communication, B.A.Comm.
Elementary Education, B.S.Ed.
Physical Education, B.S.Ed.
General Studies, A.S.G.S.
Human Services, B.S.H.S.*
Psychology, B.S.Psy.
Recreation Management, B.S.R.M., A.S.R.M.
Optional Concentration:
Sports Management
Therapeutic Recreation, B.S.T.R.

Center for Criminal Sciences

Criminal Justice, B.S.C.J.
Specialties:
Crime Analysis
Criminal Justice Administration
Rehabilitative Services
Criminal Justice, A.S.C.J.
Police Administration, M.P.A.*

Minors: See pages 76 and 77 for a listing of minors currently available to traditional students only.

* Offered *only* through the College of Professional Studies

COLLEGE of BUSINESS

About the College of Business

Indiana Tech's College of Business is committed to the development of professionals prepared to thrive in the complex business environment. To achieve this commitment, the college provides our students a broad-based undergraduate education built upon specific business knowledge. It offers advanced graduate programs which include in-depth studies with concentrations in specific areas of business. The programs foster graduates who are business leaders, life long learners, and well-rounded, educated citizens of the world.

Indiana Tech's College of Business will achieve its mission by emphasizing academic excellence and relationship-based education. It will maintain relevant undergraduate and graduate programs to meet current and evolving demands of business. These efforts include:

- General education competencies that are integrated within the business curriculum
- Emphasis on integrity and ethical behavior in all business and life decisions.
- Ongoing assessment of programs and review of policies to drive continuous improvement.
- Employment and development of faculty who are experts in their fields.

The college offers semester and accelerated formats and utilizes distance learning to extend educational opportunities to students.

Contents

College of Business

Accounting/Associate of Science

The purpose of the accounting associate degree program is to develop business people for entry-level positions in management accounting, financial services, auditing, management services, governmental and nonprofit agencies, public accounting, and taxation. There is an emphasis upon developing an understanding and respect for the ethical and professional standards of the accounting profession. Accountants are trained in our program to develop problem-solving skills and increase efficiency, improving both operating results and business value for their prospective employers.

Accounting courses are taught using case studies, problems, and computer applications so that concepts can be applied to real-life situations. The high level of student-professor interaction provides a learning environment that contributes to students with the practical experience and the skills that they need to participate in the fast-paced business environment.

Semester I

MA 1000	Foundations of College Math	3
ENG 1250	English Composition I	3
BA 1200	Foundations of Business	3
MIS 1300	Software Tools	3
PSY 1700	Introduction to Psychology	3
IIT 1000	University Experience	1

total: 16

Semester II

MA 1025	Mathematical Problem-Solving	3
ENG 1270	English Composition II	3
ACC 1010	Accounting Principles	3
SS 2200	Macroeconomics	3
IIT 1270	Introduction to Critical Inquiry	3
*IIT 2000	Pre-Internship Seminar	0

total: 15

Semester III

MA 2025	Statistical Problem-Solving	3
BA 2010	Principles of Management	3
ACC 2140	Managerial Accounting	3
ENG 2320	Professional Communication	3
ACC 2200	Intermediate Accounting I	3
HUM 2000	Introduction to Humanities	3

total: 18

Semester IV

ACC 2240	Intermediate Accounting II	3
ACC 2400	Cost Accounting	3
SS 2210	Microeconomics	3
BA 2850	Managing in the Legal Environment	3
Elective	(Humanities)	3

total: 15

total credits required: 64

**Required by all students who plan on completing an internship*

College of Business

Accounting/Bachelor of Science

The purpose of the accounting program is to develop professional business people with careers in management accounting, financial services, auditing, management services, governmental and nonprofit agencies, public accounting, and taxation. There is an emphasis upon developing an understanding and respect for the ethical and professional standards of the accounting profession. Accountants are trained in our program to develop problem-solving skills and increase efficiency, improving both operating results and business value for their prospective employers.

Indiana Tech's baccalaureate accounting program provides graduates with a sound foundation in management accounting and is built upon a solid foundation of knowledge in the areas of business, English, humanities, and social sciences. There are significant electives in the program as well, allowing students flexibility to emphasize optional areas of study in their academic preparation.

Accounting courses are taught using case studies, problems, and computer applications so that concepts can be applied to real-life situations. The high level of student-professor interaction provides a learning environment that contributes to graduates with strong accounting skills, business ethics, and integrity.

Semester I

MA 1000	Foundations of College Math	3
ENG 1250	English Composition I	3
BA 1200	Foundations of Business	3
MIS 1300	Software Tools	3
PSY 1700	Introduction to Psychology	3
IIT 1000	University Experience	1
		total: 16

Semester II

MA 1025	Mathematical Problem-Solving	3
ENG 1270	English Composition II	3
IIT 1270	Introduction to Critical Inquiry	3
BA 2500	Marketing	3
ACC 1010	Accounting Principles	3
*IIT 2000	Pre-Internship Seminar	0
		total: 15

Semester III

MA 2025	Statistical Problem-Solving	3
ACC 2140	Managerial Accounting	3
ACC 2200	Intermediate Accounting I	3
BA 2010	Principles of Management	3
SS 2200	Macroeconomics	3
		total: 15

Semester IV

ACC 2240	Intermediate Accounting II	3
ACC 2400	Cost Accounting	3
HUM 2000	Introduction to Humanities	3
SS 2210	Microeconomics	3
ENG 2320	Professional Communication	3
		total: 15

Semester V

ACC 2500	Individual Income Tax	3
Choose one of the following two courses:		3
SS 2800	Sociology	
SS 2720	Group Dynamics	
Elective	(Humanities - 3 credits must be literature)	3
BA 2020	Operations Management	3
BA 2410	Human Resource Management	3
Elective	(Math)	3
		total: 18

Semester VI

ACC 3500	Corporate Income Tax	3
BA 2700	Organizational Behavior	3
BA 2850	Managing in the Legal Environment	3
FIN 3600	Corporate Finance	3
Elective	(Humanities)	3
		total: 15

Semester VII

ACC 4700	Advanced Accounting I	3
BA 3200	Business Ethics	3
BA 4910	Business Policy & Strategic Planning	3
Elective	(ENG/HUM/PSY/SS)	3
Science Elective	(BIO 1000, PH 1000, CH 1000, SCI 2000)	3
		total: 15

Semester VIII

ACC 4740	Advanced Accounting II	3
ACC 3300	Auditing	3
Electives	(Approved)	9
		total: 15

total credits required: 124

**Required by all students who plan on completing an internship*

College of Business

Business Administration/Bachelor of Science & Associate of Science

About the Programs

The program leading to the Bachelor of Science in Business Administration is based upon a philosophy of total student development. Students choosing this degree program are provided with an education that stresses an interdisciplinary approach. They are exposed to all aspects of the complex and changing business environment with a specific emphasis upon social, cultural, and political factors.

The total development objective creates a program blending a business education with that of the liberal arts. All students choosing a degree in business administration take a common core of ten courses such as Principles of Management, Marketing, Human Resources, Management, and a capstone course called Business Policy and Strategic Planning. Additional courses are required in economics, accounting, math, computer information systems, English, social sciences, and humanities.

Business administration majors choose a course concentration based on their interests and career goals. Each concentration carries a minimum of an additional five-course specialization so that the major will require at least fifteen business courses. The program includes sufficient electives to allow students the option of a dual concentration if they plan their program of study carefully. In addition, the liberal arts component provides a sound foundation for both behavioral and quantitative business majors through the broadening of the students' social and cultural backgrounds.

Students in the business administration program gain an in-depth study of all facets of the business world. Students will study accounting, business law, human resource management and management problems and policies.

Classroom discussions are designed to help the student grasp fundamental principles and to motivate utilization of these principles in solving typical management problems.

Students graduating in business administration are qualified to assume positions as management trainees, working toward middle and upper-level management positions in a variety of businesses. Credits earned in the associate program are fully applicable toward the Bachelor of Science in Business Administration.

Business Administration /Bachelor of Science
Health Care Administration Concentration**

Business Administration Core

BA 1200	Foundations of Business	3
BA 2010	Principles of Management	3
BA 2020	Operations Management	3
BA 2410	Human Resource Management	3
BA 2430	International Management	3
BA 2500	Marketing	3
BA 2700	Organizational Behavior	3
BA 2850	Managing in a Legal Environment	3
BA 3200	Business Ethics	3
BA 4910	Business Policy & Strategic Planning	3
FIN 3600	Corporate Finance	3

Math

MA 1000	Foundations of College Math	3
MA 1025	Mathematical Problem-Solving	3
MA 2025	Statistical Problem-Solving	3

Accounting & Information Systems

ACC 1010	Accounting Principles	3
ACC 2140	Managerial Accounting	3
MIS 1300	Software Tools	3

English

ENG 1250	English Composition I	3
ENG 1270	English Composition II	3
ENG 2320	Professional Communication	3

Humanities & Social Sciences

HUM 2000	Introduction to Humanities	3
Electives	(Humanities - 3 credits must be literature)	6
PSY 1700	Introduction to Psychology	3
SS 2200	Macroeconomics	3
SS 2210	Microeconomics	3
SS 2800	Introduction to Sociology	3

Health Care Administration Concentration

*BIO 1140	Medical Terminology	3
HCA 1100	Introduction to Health Care Administration	3
*HCA 2100	Legal Aspects of Health Care Administration	3
*HCA 3100	Finance of Health Care Administration.	3
*HCA 3200	Health Care Policy	3
*HCA 4100	Managed Care & Medical Group Practice	3
*HCA 4200	Long Term Care Administration	3

Science

Choose one of the following two courses: 3

- BIO 1000 Introductory Biology
- SCI 2000 Contemporary Issues in Science

Approved Electives.....18

total credits required: 123

About TEAM Enrollment

The health care administration concentration uses the TEAM approach. Courses marked with an asterisk (*) require TEAM enrollment. Although the College of Professional Studies gives students a great deal of flexibility in scheduling, some degree programs do require that a group of courses be taken in a certain order. This system, referred to as Tracked Educational Adult Modules (TEAM), uses a tracked teaching approach with students organized into TEAM groups of 12 to 18 members. The TEAM proceeds in a predetermined order through the courses that are unique to the degree.

**Required TEAM enrollment*

***Offered only through the College of Professional Studies*

Business Administration/Bachelor of Science
Finance Concentration

Semester I

BA 1200	Foundations of Business	3
PSY 1700	Introduction to Psychology	3
ENG 1250	English Composition I	3
MIS 1300	Software Tools	3
MA 1000	Foundations of College Math	3
IIT 1000	University Experience	1

total: 16

Semester II

MA 1025	Mathematical Problem-Solving	3
BA 2010	Principles of Management	3
ENG 1270	English Composition II	3
Elective	(Approved)	3
IIT 1270	Introduction to Critical Inquiry	3
*IIT 2000	Pre-Internship Seminar	0

total: 15

Semester III

ACC 1010	Accounting Principles	3
BA 2500	Marketing	3
BA 2850	Managing in the Legal Environment	3
ENG 2320	Professional Communication	3
BA 2430	International Management	3

total: 15

Semester IV

BA 2410	Human Resource Management	3
BA 2020	Operations Management	3
MA 2025	Statistical Problem-Solving	3
SS 2200	Macroeconomics	3
ACC 2140	Managerial Accounting	3

total: 15

Semester V

BA 2700	Organizational Behavior	3
HUM 2000	Introduction to Humanities	3
FIN 3600	Corporate Finance	3
BA 3200	Business Ethics	3
Choose one of the following two courses:		3
SS 2800	Sociology	
SS 2720	Group Dynamics	

total: 15

Semester VI

BA 3110	Project Management	3
SS 2210	Microeconomics	3
FIN3660	Working Capital Management	3
Elective	(Humanities)	3
FIN 3680	Capital Structure & Capital Markets.	3

total: 15

Semester VII

BA 4010	Quality Management	3
FIN 3700	Mergers & Acquisitions	3
Electives	(Approved)	6
Science Elective	(BIO 1000, PH 1000, CH 1000, SCI 2000)	3
FIN 3800	Investments	3

total: 18

Semester VIII

BA 4910	Business Policy & Strategic Planning	3
FIN 4600	Seminar in Finance	3
Electives	(Approved)	6
Elective	(Humanities - 3 credits must be literature)	3

total: 15

total credits required: 124

**Required by all students who plan on completing an internship*

Business Administration/Bachelor of Science
Human Resources Concentration

Semester I

BA 1200	Foundations of Business	3
PSY 1700	Introduction to Psychology	3
ENG 1250	English Composition I	3
MIS 1300	Software Tools	3
MA 1000	Foundations of College Math	3
IIT 1000	University Experience	1

total: 16

Semester II

MA 1025	Mathematical Problem-Solving	3
BA 2010	Principles of Management	3
ENG 1270	English Composition II	3
Elective	(Approved)	3
IIT 1270	Introduction to Critical Inquiry	3
*IIT 2000	Pre-Internship Seminar	0

total: 15

Semester III

ACC 1010	Accounting Principles	3
BA 2500	Marketing	3
BA 2850	Managing in the Legal Environment	3
ENG 2320	Professional Communication	3
BA 2410	Human Resource Management	3

total: 15

Semester IV

BA 2430	International Management	3
BA 3650	Compensation Management	3
MA 2025	Statistical Problem-Solving	3
ACC 2140	Managerial Accounting	3
BA 2020	Operations Management	3

total: 15

Semester V

BA 2700	Organizational Behavior	3
HUM 2000	Introduction to Humanities	3
SS 2200	Macroeconomics	3
BA 3200	Business Ethics	3
BA 2600	Occupational Safety & Health	3

total: 15

Semester VI

PSY 3740	Counseling Techniques	3
SS 2210	Microeconomics	3
Science Elective	(BIO 1000, PH 1000, CH 1000, SCI 2000)	3
Elective	(Humanities - 3 credits must be literature)	3
Choose one of the following two courses:		3
SS 2800	Sociology	
SS 2720	Group Dynamics	

total: 15

Semester VII

BA 3800	Labor Relations	3
BA 4700	Training & Development	3
FIN 3600	Corporate Finance	3
Electives	(Approved)	9

total: 18

Semester VIII

BA 4910	Business Policy & Strategy Planning	3
Electives	(Approved)	9
Electives	(Humanities)	3

total: 15

total credits required: 124

**Required by all students who plan on completing an internship*

Business Administration/Bachelor of Science Management Concentration

Semester I

BA 1200	Foundations of Business	3
PSY 1700	Introduction to Psychology	3
ENG 1250	English Composition I	3
MIS 1300	Software Tools	3
MA 1000	Foundations of College Math	3
IIT 1000	University Experience	1

total: 16

Semester II

MA 1025	Mathematical Problem-Solving	3
BA 2010	Principles of Management	3
ENG 1270	English Composition II	3
Elective	(Approved)	3
IIT 1270	Introduction to Critical Inquiry	3
*IIT 2000	Pre-Internship Seminar	0

total: 15

Semester III

ACC 1010	Accounting Principles	3
BA 2500	Marketing	3
BA 2850	Managing in the Legal Environment	3
ENG 2320	Professional Communication	3
BA 2430	International Management	3

total: 15

Semester IV

BA 2410	Human Resource Management	3
BA 2020	Operations Management	3
MA 2025	Statistical Problem-Solving	3
Electives	(Approved)	3
ACC 2140	Managerial Accounting	3

total: 15

Semester V

BA 2700	Organizational Behavior	3
HUM 2000	Introduction to Humanities	3
SS 2200	Macroeconomics	3
BA 3200	Business Ethics	3
Choose one of the following two courses:		3
SS 2800	Sociology	
SS 2720	Group Dynamics	

total: 15

Semester VI

BA 3110	Project Management	3
SS 2210	Microeconomics	3
BA 3710	Leadership	3
Science Elective	(BIO 1000, PH 1000, CH 1000, SCI 2000)	3
Elective	(Humanities - 3 credits must be literature)	3

total: 15

Semester VII

BA 4010	Quality Management	3
BA 4700	Training & Development	3
Electives	(Approved)	6
FIN 3600	Corporate Finance	3
BA 4800	Public Relations	3

total: 18

Semester VIII

BA 4910	Business Policy & Strategic Planning	3
Electives	(Approved)	9
Elective	(Humanities)	3

total: 15

total credits required: 124

**Required by all students who plan on completing an internship*

Business Administration/Associate of Science Management Concentration

Semester I

BA 1200	Foundations of Business	3
PSY 1700	Introduction to Psychology	3
ENG 1250	English Composition I	3
MIS 1300	Software Tools	3
MA 1000	Foundations of College Math	3
IIT 1000	University Experience	1

total: 16

Semester II

MA 1025	Mathematical Problem-Solving	3
BA 2010	Principles of Management	3
ENG 1270	English Composition II	3
Elective	(Approved)	3
IIT 1270	Introduction to Critical Inquiry	3
*IIT 2000	Pre-Internship Seminar	0

total: 15

Semester III

ACC 1010	Accounting Principles	3
BA 2500	Marketing	3
BA 2850	Managing in the Legal Environment	3
ENG 2320	Professional Communication	3
BA 2430	International Management	3

total: 15

Semester IV

BA 2410	Human Resource Management	3
BA 2020	Operations Management	3
MA 2025	Statistical Problem-Solving	3
Electives	(Approved)	3
ACC 2140	Managerial Accounting	3

total: 18

total credits required: 64

**Required by all students who plan on completing an internship*

Business Administration/Bachelor of Science Management Information Systems Concentration**

Business Administration

BA 1200	Foundations of Business	3
BA 2010	Principles of Management	3
BA 2020	Operations Management	3
BA 2410	Human Resource Management	3
BA 2430	International Management	3
BA 2500	Marketing	3
BA 2700	Organizational Behavior	3
BA 2850	Managing in the Legal Environment	3
BA 3200	Business Ethics	3
BA 4910	Business Policy & Strategic Planning	3
FIN 3600	Corporate Finance	3

Management Information Systems

MIS 1300	Software Tools	3
MIS 1500	Computer Systems & Hardware	3
MIS 2100	Networking & Infrastructure	3
MIS 2150	Component Analysis & Design	3
MIS 3000	Programming & Logic	3
MIS 3100	Database Management	3
MIS 3150	Database Application Development	3
MIS 3200	Web Applications & the Internet	3
MIS 4000	Enterprise Resource Planning	3
MIS 4200	Systems Analysis & Design	3
MIS 4400	MIS Project Management	3

Accounting

ACC 1010	Accounting Principles	3
ACC 2140	Managerial Accounting	3

Mathematics

MA 1000	Foundations of College Math	3
MA 1025	Mathematical Problem-Solving	3
MA 2025	Statistical Problem-Solving	3

English

ENG 1250	English Composition I	3
ENG 1270	English Composition II	3
ENG 2320	Professional Communication	3

Social Sciences

HUM 2000	Introduction to Humanities	3
Elective	(Humanities - 3 credits must be literature)	6
PSY 1700	Introduction to Psychology	3
SS 2200	Macroeconomics	3
SS 2210	Microeconomics	3
Choose one of the two following courses:		3
SS 2720	Group Dynamics	
SS 2800	Introduction to Sociology	

Science

Choose one of the following two courses:		3
BIO 1000	Introductory Biology	
SCI 2000	Contemporary Issues in Science	

Approved Electives..... 9

total credits required: 123

*** Offered only through the College of Professional Studies*

Business Administration/Bachelor of Science
Marketing Concentration

Semester I

BA 1200	Foundations of Business	3
PSY 1700	Introduction to Psychology	3
ENG 1250	English Composition I	3
MIS 1300	Software Tools	3
MA 1000	Foundations of College Math	3
IIT 1000	University Experience	1

total: 16

Semester II

MA 1025	Mathematical Problem-Solving	3
BA 2010	Principles of Management	3
ENG 1270	English Composition II	3
Elective	(Approved)	3
IIT 1270	Introduction to Critical Inquiry	3
*IIT 2000	Pre-Internship Seminar	0

total: 15

Semester III

ACC 1010	Accounting Principles	3
BA 2500	Marketing	3
BA 2850	Managing in the Legal Environment	3
ENG 2320	Professional Communication	3
BA 2410	Human Resource Management	3

total: 15

Semester IV

BA 2430	International Management	3
BA 2020	Operations Management	3
BA 2800	E-Commerce	3
MA 2025	Statistical Problem-Solving	3
ACC 2140	Managerial Accounting	3

total: 15

Semester V

BA 2700	Organizational Behavior	3
HUM 2000	Introduction to Humanities	3
SS 2200	Macroeconomics	3
BA 3200	Business Ethics	3
BA 2550	Personal Selling	3

total: 15

Semester VI

BA 3500	Advertising	3
SS 2210	Microeconomics	3
BA 3550	International Marketing	3
Elective	(Humanities - 3 credits must be literature)	3
Choose one of the following two courses:		3
SS 2800	Sociology	
SS 2720	Group Dynamics	

total: 15

Semester VII

BA 3300	Marketing Research & Decision Making	3
BA 4500	Purchasing	3
FIN 3600	Corporate Finance	3
Science Elective	(BIO 1000, PH 1000, CH 1000, SCI 2000)	3
Electives	(Approved)	6

total: 18

Semester VIII

BA 4910	Business Policy & Strategic Planning	3
Electives	(Approved)	9
Elective	(Humanities)	3

total: 15

total credits required: 124

**Required by all students who plan on completing an internship*

Business Administration/Bachelor of Science Sports Management Concentration#

Semester I

BA 1200	Foundations of Business	3
PSY 1700	Introduction to Psychology	3
ENG 1250	English Composition I	3
SM 1400	Introduction to Sports Management	3
MA 1000	Foundations of College Math	3
IIT 1000	University Experience	1

total: 16

Semester II

MA 1025	Mathematical Problem-Solving	3
BA 2010	Principles of Management	3
ENG 1270	English Composition II	3
IIT 1270	Introduction to Critical Inquiry	3
MIS 1300	Software Tools	3

total: 15

Semester III

REC 1250	Introduction to Sport Programming	3
ACC 1010	Accounting Principles	3
BA 2850	Managing in the Legal Environment	3
BA 2410	Human Resource Management	3
ENG 2320	Professional Communications	3

total: 15

Semester IV

PSY 1750	Human Growth & Development	3
BA 2500	Marketing	3
SM 2600	Field Experience	3
MA 2025	Statistical Problem-Solving	3
ACC 2140	Managerial Accounting	3

total: 15

Semester V

BA 2700	Organizational Behavior	3
HUM 2000	Introduction to Humanities	3
SS 2200	Macroeconomics	3
SM 3100	Facilities Management	3
BA 3200	Business Ethics	3

total: 15

Semester VI

SS 2210	Microeconomics	3
BA 2430	International Management	3
Elective	(Humanities - 3 credits must be literature)	3
BA 2020	Operations Management	3
Choose one of the following two courses:		3
SS 2800	Sociology	
SS 2720	Group Dynamics	

total: 15

Semester VII

SM 4200	Marketing & Promotion in Sports Admin	3
FIN 3600	Corporate Finance	3
Science Elective	(BIO 1000, PH 1000, CH 1000, SCI 2000)	3
Electives	(Approved)	9

total: 18

Semester VIII

BA 4910	Business Policy & Strategic Planning	3
SS 3300	Sports in Society	3
Elective	(Humanities)	3
Electives	(Approved)	6

total: 15

total credits required: 124

**Required by all students who plan on completing an internship*

 # Only available in the traditional day program

Business Administration/Associate of Science Production Management Concentration**

Business Administration

BA 1200	Foundations of Business	3
BA 2010	Principles of Management	3
BA 2020	Operations Management	3
BA 2600	Occupational Safety and Health	3
BA 2700	Organizational Behavior	3
BA 3110	Project Management I	3

Math

MA 1000	Foundations of College Math	3
MA 1025	Mathematical Problem-Solving	3
MA 2025	Statistical Problem-Solving	3

Accounting & Information Systems

ACC 1010	Accounting Principles	3
ACC 2140	Managerial Accounting	3
MIS 1300	Software Tools	3

English

ENG 1250	English Composition I	3
ENG 1270	English Composition II	3
ENG 2320	Professional Communication	3

Humanities & Social Sciences

HUM 2000	Introduction to Humanities	3
PSY 1700	Introduction to Psychology	3
SS 2200	Macroeconomics	3
SS 2210	Microeconomics	3

Approved Electives..... 6

total credits required: 63

*** Offered only through the College of Professional Studies*

College of Business

Organizational Leadership/Bachelor of Science**

The organizational leadership program provides students with the leadership competencies needed for middle management success in a variety of job families and functions. To fully develop the leadership skills of students, the program focuses on four key competency areas: operations and administrative competencies; human relations and interpersonal competencies; decision-making and critical thinking competencies; and communication competencies. To facilitate development of these competencies, courses marked with an asterisk (*) must be taken in sequence as part of a Tracked Educational Adult Module (TEAM). Since each course builds upon the previous one, students cannot drop in or out of the TEAM at will. If you drop from a TEAM, you may have to wait until the next TEAM to re-register for classes. For additional information, please contact the Warrior Information Network. Please check the schedule for TEAM starting dates.

Operations & Administrative Competencies

BA 1200	Foundations of Business	3
BA 2010	Principles of Management	3
BA 2410	Human Resource Management	3
BA 2500	Marketing	3
BA 2850	Managing in a Legal Environment	3
MIS 1300	Software Tools	3

Human Relations & Interpersonal Competencies

BA 2700	Organizational Behavior	3
BA 3710	Leadership	3
*OL 3000	Employee Development	3
PSY 2000	Understanding Diversity	3
SS 2850	Conflict Resolution	3

Decision-Making & Critical Thinking Competencies

BA 3200	Business Ethics	3
*OL 3200	Managing Organizational Change & Continuous Improvement	3
*OL 3300	Quantitative Decision Making	3
*OL 3400	Financial Systems for Decision-Making	3
*OL 4000	Strategic Planning	3
*OL 4100	Qualitative Decision Making	3
*OL 4900	Organizational Leadership Capstone	3

Communication Competencies

ENG 1250	English Composition I	3
ENG 1270	English Composition II	3
ENG 2320	Professional Communication	3

Humanities & Social Sciences

HUM 2000	Introduction to Humanities	3
HUM	Electives (3 credits must be literature)	6
PSY 1700	Introduction to Psychology	3
SS 2800	Introduction to Sociology	3
SS or PSY	Electives	3

Math & Sciences

MA 2025	Statistical Problem-Solving	3
One of the two following courses		3
BIO 1000 Introduction to Biology		
SCI 2000 Contemporary Issues in Science		

Approved Electives.....33

total credits required: 120

* Students must complete at least 45 credit hours, including ENG 1250 and BA 2700, before enrolling in the organizational leadership TEAM.

COLLEGE of ENGINEERING

About the College of Engineering

The fundamental mission of the College of Engineering is to provide the individual student with an educational foundation broad enough to support a lifetime of learning and specific enough to provide the necessary skills for a successful entry into professional life or graduate study in engineering and/or computer science.

The engineer of the future must function in a global marketplace driven by technology and ruled by open competition. The College of Engineering recognizes that its fundamental obligation is to provide an engineering education rooted in solid fundamental knowledge and structured around up-to-date technical skills. However, it must also provide undergraduate students with a liberal and humanistic education to help them acquire an understanding of society and their cultural heritage; it must provide them with a breadth of knowledge and sensitivity to weigh ethical and moral issues and form values and life goals.

The college offers baccalaureate degrees in six academic areas: biomedical engineering, computer engineering, electrical engineering, energy engineering, mechanical engineering, and industrial and manufacturing engineering. Students in each program are provided with a solid foundation in the basic sciences and mathematics. In order to furnish breadth to the technical education of the students, supporting courses in communications, humanities, and social sciences are included in all the engineering and computer science programs. The use of computers is emphasized throughout all the academic offerings.

The college encourages life long learning among the faculty as a means of supporting the teaching commitments of the university. The engineering faculty at Indiana Tech are particularly dedicated to the educational process, in which teaching is of primary importance. All courses in the college are taught by experienced and professional faculty, some of whom are local practicing engineers.

Contents

College of Engineering
Biomedical Engineering/Bachelor of Science

This program will provide graduates with careers in the biomedical engineering field with a specialization in biomechanical skills. This interdisciplinary degree combines classical mechanical engineering and biological sciences. With a biomedical engineering degree, graduates are prepared to work at companies that design and manufacture replacement limbs, joints, and tissues for the human body. The graduates will be successful in completing the eleven ABET program outcomes:

- Have the ability to use mathematics and the physical sciences to solve engineering problems
- Have the ability to design and conduct experiments, and analyze and interpret data
- Have the ability to design and build a system, component, or process to meet desired needs
- Work effectively on project teams
- Have the ability to identify, model, and solve engineering problems
- Have effective written and oral communication skills
- Have the broad education necessary to understand how engineering solutions impact society
- Recognize the need for, and have the ability to engage in life-long learning
- Have a knowledge of contemporary issues that affect the biomedical engineering profession
- Have the ability to use the modern engineering tools necessary for the engineering practice
- Understand professional and ethical responsibilities

Semester I

CH 1220	General Chemistry & Lab I	3
EGR 1710	Engineering Graphics & Design	3
ENG 1250	English Composition I	3
MA 1200	Calculus I	4
BIO 2710	Human Anatomy and Physiology I	3
BIO 2720	Human Anatomy and Physiology I Lab	1
IIT 1000	University Experience	1

total: 18

Semester II

MA 1210	Calculus II	4
BIO 2730	Human Anatomy & Physiology II	3
BIO 2740	Human Anatomy & Physiology II Lab	1
ENG 1270	English Composition II	3
PH 1300	General Physics I	3
PH 1310	General Physics I Laboratory	1
*IIT 2000	Pre-Internship Seminar	0

total: 15

Semester III

EGR 2000	Engineering Communication	3
EM 2010	Statics	3
MA 2100	Differential Equations & Linear Algebra	4
PH 2300	General Physics II	3
EGR 1500	Computer Programming for Engineers	3

total: 16

Semester IV

CH 1230	General Chemistry II	3
EE 2050	Electrical Engineering	3
EGR 3600	CAD I—Parametric Modeling	3
EM 2020	Dynamics	3
EM 3100	Mechanics of Materials	3
EM 3150	Mechanics of Materials Laboratory	1

total: 16

Semester V

BIOL 2950	Genetics	4
HUM 2000	Introduction to Humanities	3
MA 2430	Probability & Statistics for Engineers	3
ME 3400	Mechanical Engineering Design I	3
PSY 1700	Introduction to Psychology	3

total: 16

Semester VI

BIO 2700	Pathophysiology	3
BME 3100	Bio-Materials	3
BME 3200	Thermodynamics & Fluids	3
BME 3250	Thermodynamics & Fluids Lab	1
EGR 3700	CAD II including FEA	3
Elective	(Technical)	3

total: 16

Semester VII

BIO 4710	Immunology	3
BME 3500	Bio-Kinematics	3
BME 4973	BME Senior Project I	2
EGR 4400	Professional Practice I	3
Elective	(Humanities - 3 credits must be literature)	3
Elective	(Technical)	3

total: 17

Semester VIII

BIO 3500	Cell Biology	3
BME 4974	BME Senior Project II	3
SS 2200	Macroeconomics	3
Elective	(SS 2720 or SS 2800)	3
Elective	(Humanities)	3

total: 15

total credits required: 129

**Required by all students who plan on completing an internship*

Computer Engineering/Bachelor of Science

The computer engineering program is designed to develop professionals who will analyze, design, construct, and maintain hardware and software systems.

The program is structured so that studies in mathematics and science prepare the student for the theory of electric circuits, numerical techniques, and programming languages. Building on this foundation, studies in computer science, electronics, digital logic, and microprocessors build to an advanced study of computer hardware.

Each of these areas is supported by formal laboratory experimentation and hardware design projects. Graduates of the program work on a variety of challenging projects within the areas of computer architecture, computer logic design, computer networks, and communications.

Semester I

NET 1200	Network Design I	4
MA 1300	Calculus & Numerical Methods	4
ENG 1250	English Composition I	3
CS 1200	Introduction to Computer Science	3
EGR 1710	Engineering Graphics & Design	3
IIT 1000	University Experience	1

total: 18

Semester II

CS 1300	Computer Science I	3
NET 1250	Network Design II	4
MA 1310	Calculus & Numerical Methods II	4
ENG 1270	English Composition II	3
CH 1220	General Chemistry & Lab I	3
*IIT 2000	Pre-Internship Seminar	0

total: 17

Semester III

CS 1350	Computer Science II	3
CS 2410	Discrete Structures	3
EGR 2000	Engineering Communication	3
PH 1300	General Physics I	3
PH 1310	General Physics I Lab	1
MA 2150	Linear Algebra	3

total: 16

Semester IV

CS 2100	Introduction to Computer Systems	3
EE 2100	Circuit Analysis I	3
PH 2300	General Physics II	3
PH 2310	General Physics II Lab	1
MA 2300	Differential Equations	3
PSY 1700	Introduction to Psychology	3

total: 16

Semester V

CS 3800	Data Structures	3
CPE 3500	Computer Engineering I	3
EE 3100	Circuit Analysis II	3
EE 3200	Electronics Circuits I	3
EE 3650	Circuits Lab	2
MA 2430	Probability & Statistics for Engineers	3

total: 17

Semester VI

CS 3200	Operating Systems	3
EE 3150	Signals and Systems	3
CPE 4500	Computer Engineering II	3
CPE 3550	Computer Engineering I Lab	1
HUM 2000	Introduction to Humanities	3
Choose one of the following two courses:		3
SS 2200	Macroeconomics	
SS 2210	Microeconomics	

total: 16

Semester VII

CS 4500	Software Engineering	3
CPE 4550	Computer Engineering II Lab	1
CPE 4700	Computer Architecture	3
CPE 4710	Senior Project Proposal	2
Elective	(Humanities - 3 credits must be literature)	
Choose one of the following two courses:		3
SS2720	Group Dynamics	
SS 2800	Introduction to Sociology	

total: 15

Semester VIII

CPE 4720	Senior Project	2
CPE 4600	Embedded Systems	3
EE 4150	Digital Signal Processing	3
EGR 4400	Professional Practice	3
Elective	(Humanities)	3

total: 14

**Required by all students who plan on completing an internship*

total credits required: 129

College of Engineering
Electrical Engineering/Bachelor of Science

The electrical engineering program provides its graduates with a thorough knowledge of the fundamental principles and practices of modern electrical engineering. The program places emphasis on the general physical laws and theoretical concepts from which all technological applications derive. Studies in mathematics and science form the program foundation that prepares the student for the theories of electric circuits and electromagnetic fields. Upper level courses present the principle areas of technological application, including electronics, digital systems, controls, and communications. Computer-based simulations and laboratory-based applications support theoretical study in each of these areas. Graduates work in a variety of careers including the design, development, and testing of systems and components for the power distribution, aerospace, communications, and instrumentation industries.

Program Objective #1
Produce graduates ready for immediate productive employment as "professionals" in a variety of disciplines within electrical engineering. Supporting Outcomes:*
(d) Graduates must function effectively on project teams.
(f) Graduates must understand professional and ethical responsibilities.
(g) Graduates must have effective written and oral communication skills.

Program Objective #2
Produce graduates with the foundation in science, mathematics, social sciences, humanities, language arts, and engineering to support continuing education, including graduate studies. Supporting Outcomes:*
(h) Graduates must have the broad education necessary to understand how engineering solutions impact society.
(i) Graduates must recognize the need for, and have the ability to engage in life-long learning.
(j) Graduates must have knowledge of contemporary issues that affect the electrical engineering profession.

Program Objective #3
Produce graduates with ability to use modern engineering tools to practice electrical engineering in its major areas such as electrical power, electronics, and digital systems. Supporting Outcomes:*
(a) Graduates must have the ability to use mathematics and the physical sciences to solve engineering problems.
(c) Graduates must have the ability to design and build a system, component, or process to meet desired needs.
(k) Graduates must have the ability to use the modern engineering tools necessary for the engineering practice.

Program Objective #4
Produce graduates with the scientific and critical thinking skills enabling them to identify, model, analyze, and solve real world problems by reinforcing and expanding on their depth and breadth in engineering fundamentals, mathematics and science. Supporting Outcomes:*
(b) Graduates must have the ability to design and conduct experiments, and analyze and interpret data.
(e) Graduates must have the ability to identify, model, and solve engineering problems.

** Outcomes (a) through (k) are consistent with criteria established by ABET, Inc.*

Semester I

MA 1200	Calculus I	4
CH 1220	General Chemistry & Laboratory I	3
EGR 1710	Graphics & Design	3
ENG 1250	English Composition I	3
PSY 1700	Introduction to Psychology	3
IIT 1000	University Experience	1

total: 17

Semester II

MA 1210	Calculus II	4
CH 1230	General Chemistry II	3
PH 1300	General Physics I	3
PH 1310	General Physics I Laboratory	1
EGR 1500	Computer Programming for Engineers	3
ENG 1270	English Composition II	3
*IIT 2000	Pre-Internship Seminar	0

total: 17

Semester III

MA 2100	Differential Equations & Algebra	4
MA 2430	Probability & Statistics for Engineers	3
EM 2010	Statics	3
HUM 2000	Introduction to Humanities	3
PH 2300	General Physics II	3
PH 2310	General Physics II Laboratory	1

total: 17

Semester IV

MA 2200	Calculus III	4
EM 2020	Dynamics	3
EGR 2000	Engineering Communication	3
EE 2100	Circuit Analysis I	3
Elective	(Humanities)	3

total: 16

Semester V

EE 3100	Circuit Analysis II	3
EE 3200	Electronics I	3
EE 3500	EM Fields & Waves	3
EE 3650	Circuits Laboratory	2
CPE 3500	Computer Engineering I	3
EGR 4820	Computer Integrated Manufacturing	2

total: 16

Semester VI

EE 3150	Signals and Systems	3
EE 3220	Electronics II	3
EE 3550	Transmission Lines	3
EE 3750	Electronics Laboratory	2
CPE 3550	Computer Engineering I Lab	2
Elective	(Humanities - 3 credits must be literature)	3

total: 16

Semester VII

EGR 4400	Professional Practice I	3
EE 4200	Power Electronics	3
EE 4400	Electrical Machines	3
EE 4800	Linear Controls	3
EE 4973	EE Senior Project I	2
SS 2200	Macroeconomics	3

total: 17

Semester VIII

EE 4100	Circuit Synthesis	3
EE 4300	Principles of Communication Systems	3
EE 4350	Communications Laboratory	1
EE 4450	Machines & Controls Laboratory	1
EE 4974	EE Senior Project II	2
Choose one of the following two courses:		3
SS2720	Group Dynamics	
SS 2800	Introduction to Sociology	

total: 13

**Required by all students who plan on completing an internship*

total credits required: 129

College of Engineering
Energy Engineering/Bachelor of Science

Graduates from the Energy Engineering program will understand the fundamental science and math relevant to energy production, distribution, regulation, and end use. They will be able to apply engineering concepts, calculations, and computer models to solve problems and analyze designs in these areas. The graduates will participate in a multi-year energy project, in which they address engineering project issues, such as allocating resources, meeting milestones, and solving specific engineering problems.

Graduates will have basic knowledge in business and accounting to identify an appropriate balance of business and technical issues.

The energy engineering program objectives include the following:

- Produce graduates ready for immediate productive employment as "professionals" within industry.
- Produce graduates prepared to work in energy production, distribution, regulation, and end use.
- Produce graduates with the broad foundation in general education, business, math, science, and engineering to support life-long learning.
- Produce graduates with the technical skills, communication skills, and critical thinking skills to enable them to identify, model, analyze, and solve real-world problems.

Semester I

MA 1035	College Algebra	3
CH 1000	Fundamentals of Chemistry	3
EGR 1710	Graphics & Design	3
ENG 1250	English Composition I	3
BA 1200	Foundations of Business	3
IIT 1000	University Experience	1
		total: 16

Semester II

MA 1060	Trigonometry	3
PH 1100	Fundamentals of Physics	3
CS 1250	Problem Solving for Programmers	3
BA 2010	Principles of Management	3
ENG 1270	English Composition II	3
*IIT 2000	Pre-Internship Seminar	0
		total: 15

Semester III

MA 1100	Applied Calculus I	3
PH 2100	Fundamentals of Physics II	3
ME 2050	Overview of Machines & Fluids	3
IME 2010	Safety Engineering	3
EM 2030	Statics & Dynamics	3
		total: 15

Semester IV

EE 2050	Overview of Electricity and Electronics	3
MA 1110	Applied Calculus II	3
IME 2110	Quality Control I	3
ENE 2100	Introduction to Energy Engineering Project	1
EGR 2000	Engineering Communication	3
PSY 1700	Introduction to Psychology	3
		total: 16

Semester V

EGR 3430	Applied Probability & Statistics	3
EGR 2650	Manufacturing Processes	3
ENE 3010	Energy Engineering Project I	3
ENE 3140	Wind & Solar Power for Electrical Grid	3
ACC 1010	Accounting Principles I	3
		total: 15

Semester VI

ENE 3150	Energy Storage in Fuel Cells and Batteries	3
ENE 3160	HVAC & Geothermal Systems	3
ENE 3020	Energy Engineering Project II	3
HUM 2000	Introduction to Humanities	3
ACC 2140	Managerial Accounting	3
		total: 15

Semester VII

EGR 4400	Professional Practice I	3
IME 4010	Tech Computer Graphics	3
ENE 3200	Ethanol and Biofuels Production	3
ENE 4973	Senior Thesis I	3
Elective	(Humanities)	3
		total: 15

Semester VIII

ENE 4974	Senior Thesis II	3
ENE 4950	ENE Internship or Elective	3
Elective	(Humanities - 3 credits must be literature)	3
Choose one of the following two courses:		3
SS 2200	Macroeconomics	
SS 2210	Microeconomics	
Choose one of the following two courses:		3
SS 2720	Group Dynamics	
SS 2800	Introduction to Sociology	
		total: 15

total credits required: 122

**Required by all students who plan on completing an internship*

College of Engineering
Industrial & Manufacturing Engineering/Bachelor of Science

The fundamental activity of graduates from the industrial and manufacturing engineering program is the operation of a manufacturing plant in the most efficient manner. The curriculum encompasses not only the basic math and science courses taken by other branches of engineering, but also specialized knowledge in optimization techniques, industrial administration, and management of human resources. An important emphasis is placed on the concept of Total Quality throughout the program.

The program also includes courses in areas of high demand, such as computer-aided design and manufacturing, automation, and robotics. An industrial and manufacturing engineer may seek employment in any company engaged in manufacturing operations.

The IME program will produce graduates who have the ability to:

- Communicate effectively through the use of engineering documents, technical reports, and presentations.
- Utilize critical thinking and comprehension skills.
- Function in multi-disciplinary teams.
- Understand the impact of engineering in a global/societal context.
- Integrate ethical and professional norms and a sense of fiscal responsibility.
- Understand contemporary issues.
- Engage in lifelong learning.
- Apply appropriate engineering tools to model and analyze manufacturing operations.

Semester I

MA 1035	College Algebra	3
CH 1000	Fundamentals of Chemistry	3
EGR 1710	Graphics and Design	3
BA 1200	Foundations of Business	3
ENG 1250	English Composition I	3
IIT 1000	University Experience	1
		total: 16

Semester II

CS 1250	Problem Solving for Programmers	3
MA 1060	Trigonometry	3
PH 1100	Fundamentals of Physics I	3
BA 2010	Principles of Management	3
ENG 1270	English Composition II	3
*IIT 2000	Pre-Internship Seminar	0
		total: 15

Semester III

PSY 1700	Introduction to Psychology	3
MA 1100	Applied Calculus I	3
PH 2100	Fundamentals of Physics	3
IME 2010	Safety Engineering	3
EM 2030	Statics & Dynamics	3
		total: 15

Semester IV

EGR 2000	Engineering Communication	3
EGR 2600	Materials Science	3
MA 1110	Applied Calculus II	3
IME 2110	Quality Control I	3
IME 2020	Work Design	3
		total: 15

Semester V

EGR 2650	Manufacturing Processes	3
EGR 3430	Applied Probability & Statistics	3
IME 3040	Computer Integrated Mfg. Systems	4
IME 3110	Quality Control II	3
ACC 1010	Accounting Principles	3
		total: 16

Semester VI

IME 3020	Computer Simulation of Mfg. Proc.	3
IME 3120	Design of Experiments	3
IME 3060	Advanced Computer Integrated Mfg.	3
HUM 2000	Introduction to Humanities	3
ACC 2140	Managerial Accounting	3
		total: 15

Semester VII

EGR 4400	Professional Practice I	3
IME 4010	Tech Computer Graphics	3
IME 4020	Lean Manufacturing	3
IME 4973	IME Senior Project I	2
SS 2200	Macroeconomics	3
Elective	(Humanities - 3 credits must be literature))	3
		total: 17

Semester VIII

IME 4110	Total Quality Management	3
IME 4974	IME Senior Project II	2
Elective	(SS 2720 or SS 2800)	3
Elective	(Humanities - 3 credits must be literature)	3
IME 4950	IME Internship or Elective (Approved)	3
		total: 14

total credits required: 123

**Required by all students who plan on completing an internship*

Industrial & Manufacturing Engineering/Associate of Science**

Graduates from this two-year degree understand the operational side of manufacturing systems. The curriculum encompasses the foundational math and science courses and introduces the student to optimization techniques, industrial administration, and management of human resources. Quality, lean manufacturing, safety, and other high-demand topics from the industrial and manufacturing fields yield a broad understanding of manufacturing operations.

Business Administration

BA 1200	Foundations of Business	3

English

ENG 1250	English Composition I	3
ENG 1270	English Composition II	3

Humanities and Social Sciences

HUM 2000	Introduction to Humanities	3
SS 2200	Macroeconomics	3

Math and Science

*MA 1035	College Algebra	3
*MA 1060	Trigonometry	3
*MA 1100	Applied Calculus I	3
*CH 1000	Fundamentals of Chemistry	3
*PH 1100	Fundamentals of Physics	3

Engineering

*EGR 1710	Graphics & Design	3
*EGR 2000	Engineering Communication	3
*EGR 2650	Manufacturing Processes	3
*EGR 3430	Applied Probability & Statistics	3
*IME 2010	Safety Engineering	3
*IME 2020	Work Design	3
*IME 2110	Quality Control	3
*IME 3020	Computer Simulation of Mfg. Processes	3
*IME 4020	Lean Manufacturing	3
*IME 4300	Integrated Resource Management	3

total credits required: 60

About TEAM Enrollment

The industrial & manufacturing engineering associate degree uses the TEAM approach. Courses marked with an asterisk (*) require TEAM enrollment. Although the College of Professional Studies gives students a great deal of flexibility in scheduling, some degree programs do require that a group of courses be taken in a certain order. This system, referred to as Tracked Educational Adult Modules (TEAM), uses a tracked teaching approach with students organized into TEAM groups of 12 to 18 members. The TEAM proceeds in a predetermined order through the courses that are unique to the degree.

**Required TEAM enrollment*

*** Offered only through the College of Professional Studies*

College of Engineering

Mechanical Engineering/Bachelor of Science

The mechanical engineering program provides its graduates with a foundation in mathematics, science and engineering fundamentals, as well as a comprehensive knowledge of the mechanical engineering discipline. In the program, emphasis is placed on the general physical laws and theoretical concepts from which all technological applications derive. The program is structured so that studies in mathematics and science prepare the student for the theories of solid structures, thermodynamics, and fluid mechanics. From this foundation, the principal areas of application are covered, including: design of machines, heat transfer, and energy systems. Theoretical study in each of these areas is supported by extensive laboratory work with professional test instrumentation. Graduates often choose careers in the design and manufacturing of thermal and mechanical systems in traditional fields such as automotive, aerospace, and instrumentation.

Program Objective #1

Produce graduates ready for immediate productive employment as "professionals" within industry. Supporting Outcomes:*

(d) Graduates must work effectively on multidisciplinary project teams

(f) Graduates must understand professional and ethical responsibilities

(g) Graduates must have effective written and oral communication skills

Program Objective # 2

Produce graduates with the foundation in science, mathematics, social sciences, humanities, language arts, and engineering to support continuing education, including graduate studies. Supporting Outcomes:*

(h) Graduates must have the broad education necessary to understand how engineering solutions impact the global society, environment, and economy

(i) Graduates must recognize the need for and have the ability to engage in life-long learning

(j) Graduates must have a knowledge of contemporary issues that affect the mechanical engineering profession

Program Objective # 3

Produce graduates prepared to design, develop, produce, and maintain mechanical devices, components, and systems. Supporting Outcomes:*

(a) Graduates must have the ability to use mathematics and the physical sciences to solve engineering problems

(c) Graduates must have the ability to design and build a system, component, or process to meet desired needs within realistic constraints

(k) Graduates must have the ability to use the modern engineering tools necessary for the engineering practice

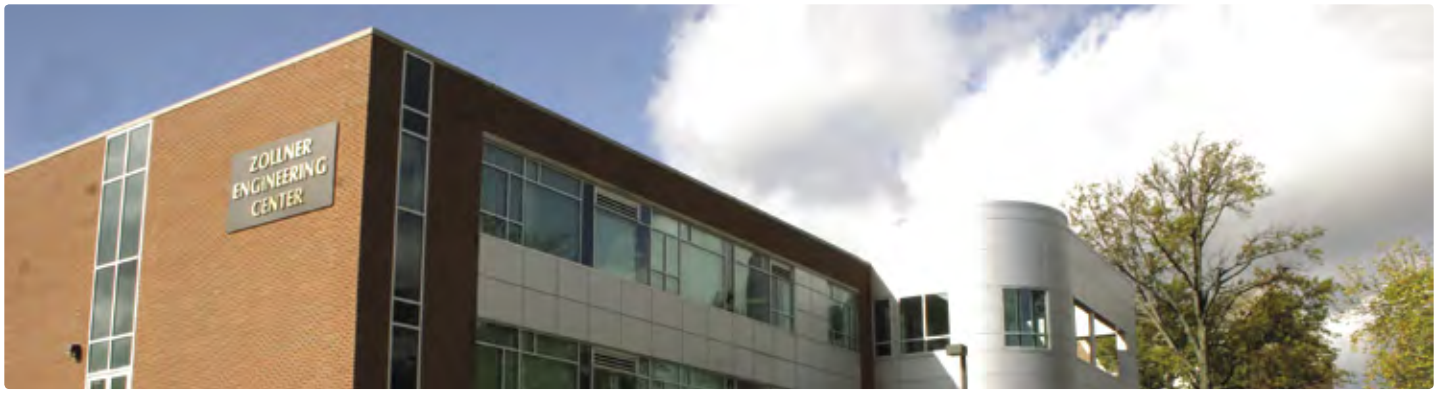
Program Objective # 4

Produce graduates with the scientific and critical thinking skills enabling them to identify, model, analyze, and solve real-world problems. Supporting Outcomes:*

(b) Graduates must have the ability to design and conduct experiments, and analyze and interpret data

(e) Graduates must have the ability to identify, model, and solve engineering problems

** Outcomes (a) through (k) are consistent with criteria established by ABET, Inc.*



Semester I

MA 1200	Calculus I	4
CH 1220	General Chemistry & Laboratory I	3
EGR 1710	Graphics & Design	3
ENG 1250	English Composition I	3
PSY 1700	Introduction to Psychology	3
IIT 1000	University Experience	1

total: 17

Semester II

MA 1210	Calculus II	4
CH 1230	General Chemistry II	3
PH 1300	General Physics I	3
PH 1310	General Physics I Laboratory	1
EGR 1500	Computer Programming for Engineers	3
ENG 1270	English Composition II	3
*IIT 2000	Pre-Internship Seminar	0

total: 17

Semester III

MA 2100	Differential Equations & Linear Algebra	4
MA 2430	Probability & Statistics for Engineers	3
PH 2300	General Physics II	3
PH 2310	General Physics II Laboratory	1
EM 2010	Statics	3
EGR 2000	Engineering Communication	3

total: 17

Semester IV

MA 2200	Calculus III	4
EGR 2600	Materials Science	3
EM 2020	Dynamics	3
EM 3100	Mechanics of Materials	3
EM 3150	Mechanics of Materials Laboratory	1
HUM 2000	Introduction to Humanities	3

total: 17

Semester V

EM 3500	Fluid Mechanics	3
EM 3550	Fluid Mechanics Laboratory	1
ME 3110	Theory of Machines	3
ME 3200	Thermodynamics I	3
ME 3400	Mechanical Engineering Design I	3
Elective	(Humanities - 3 credits must be literature)	3

total: 16

Semester VI

ME 4260	Heat Transfer	3
ME 4270	Heat Transfer Laboratory	1
ME 3410	Mechanical Engineering Design II	3
ME 3460	Computer-Aided Design	4
EE 2050	Electrical Engineering	3
Elective	(Humanities)	3

total: 17

Semester VII

EGR 2650	Manufacturing Processes	3
EGR 4400	Professional Practice I	3
ME 4973	ME Senior Project I	2
SS 2200	Macroeconomics	3
EGR 4820	Computer Integrated Manufacturing	2
ME 4200	Thermodynamics II	3

total: 16

Semester VIII

EM 3700	Mechanical Vibrations	3
ME 4974	ME Senior Project II	2
Elective	(SS 2720 or SS 2800)	3
ME 4950	Internship or Tech Elective	3
ME 4280	Energy Systems Design	2

total: 13

total credits required: 130

**Required by all students who plan on completing an internship*
Technical electives must be chosen from 3000-4000 level courses.

SCHOOL of COMPUTER SCIENCES

part of the College of Engineering

About the School of Computer Sciences

Indiana Tech has the programs to help you push the boundaries of computer science. Our degrees are designed as intense programs to prepare you for the challenges of this competitive field. Our faculty works hard to make the course work valuable by keeping it up-to-date with the knowledge and skills that are important to business and industry. They also specialize in individual attention to ensure that you get the education you need and want.

Whichever computer studies degree you choose, you can be assured that you'll get a well-rounded education that also includes English, humanities, and social science. Upon graduation you'll be well-prepared to enter the workforce with a wealth of background knowledge, technical skills, and practical experience.

Contents

School of Computer Sciences
Computer Science/Bachelor of Arts

This program provides the student with a broad background in the field of computer science while allowing the latitude to fill out his or her education in other fields such as information systems, humanities, social sciences, or business. Students will acquire a theoretical background in computer science with study in the basics of program development, data structures, operating systems, computer architecture, and theory of computation. Emphasis is placed on software design and development.

Graduates are prepared to enter the software development field at the programmer level. Graduates will be prepared to work in various technology support roles that require a high level of technical competency. Depending on the student's choice of elective courses, the graduate may find employment in management, sales, accounting, or any field of endeavor that requires computer expertise. The graduate may also pursue further education in graduate school.

Semester I

CS 1200	Introduction to Computer Science	3
MA 1035	College Algebra	3
ENG 1250	English Composition I	3
PSY 1700	Introduction to Psychology	3
IIT 1000	University Experience	1
Elective	(Approved)	3

total: 16

Semester II

CS 1300	Computer Science I	3
HUM 2000	Introduction to Humanities	3
MA 1060	Trigonometry	3
ENG 1270	English Composition II	3
Elective	(CH 1100 or CH 1220)	3
*IIT 2000	Pre-Internship Seminar	0

total: 15

Semester III

CS 1350	Computer Science II	3
ENG 2320	Professional Communication	3
CS 2410	Discrete Structures	3
Electives	(Approved)	3
Choose one of the following two courses:		3
MA 1100	Applied Calculus I	
MA 1200	Calculus I	

total: 15

Semester IV

CS 2100	Introduction to Computer Systems	3
Choose one of the following two courses:		3
SS 2200	Macroeconomics	
SS 2210	Microeconiomics	
Elective	(Science)	3
Elective	(Approved)	3
Choose one of the following two courses:		3
MA 1110	Applied Calculus II	
MA 1210	Calculus II	

total: 15

Semester V

CS 3800	Data Structures & Algorithms	3
Elective	(Science)	3
Elective	(SS or PSY)	3
Elective	(Approved)	3
MA 3430	Probability & Statistics for Engineers	3

total: 15

Semester VI

CS 3700	Object Orientation	3
CS 3200	Operating Systems	3
Elective	(Humanities)	3
Electives	(Approved)	6

total: 15

Semester VII

CS 4500	Software Engineering	3
CS 4600	Organization of Programming Languages	3
Elective	(SS 2720 or SS 2800)	3
Elective	(Humanities - 3 credits must be literature)	3
Elective	(Approved)	3

total: 15

Semester VIII

CS 4000	Seminar	1
CS 4800	System Software	3
MA 3200	Graph Theory	3
Elective	(Humanities)	3
Electives	(Approved)	6

total: 16

total credits required: 122

Computer Science/Bachelor of Science

This program provides the student with a broad, theoretical background in computer science with study in the basics of program development, data structures, operating systems, computer architecture, theory of computation, network design and implementation, and allied sciences. Emphasis is placed on software design and development and networking. Students undertake network and software projects of increasing sophistication as they progress through their coursework.

This program prepares students either to enter a career upon graduation or to enter graduate school. Graduates can expect employment opportunities in industry and government that are exciting, challenging, and well paid.

A graduate of this program is equipped to design and create software to meet a variety of needs. Graduates are also capable of working in a range of technology support roles that require a high level of competency. Graduates have gone on to become software engineers, software developers, web developers, database programmers, and system administrators, as well as to continue their education in graduate school.

Semester I

CS 1200	Introduction to Computer Science	3
MA 1300	Calculus & Numeric Methods I	4
NET 1200	Network Design I	4
ENG 1250	English Composition I	3
IIT 1000	University Experience	1

total: 15

Semester II

MA 1310	Calculus & Numeric Methods II	4
CS 1300	Computer Science I	3
ENG 1270	English Composition II	3
NET 1250	Network Design II	4
CH 1220	General Chemistry & Lab I	3
*IIT 2000	Pre-Internship Seminar	0

total: 17

Semester III

Choose one of the following two courses:		3
ENG 2320	Professional Communication	
EGR 2000	Engineering Communication	
PH 1300	General Physics I	3
PH 1310	General Physics I Lab	1
CS 1350	Computer Science II	3
CS 2410	Discrete Structures	3
PSY 1700	Introduction to Psychology	3

total: 16

Semester IV

PH 2300	General Physics II	3
PH 2310	General Physics II Laboratory	1
CS 2100	Introduction to Computer Systems	3
CS 2500	Database Systems	3
HUM 2000	Introduction to Humanities	3
Elective	(Approved)	3

total: 16

Semester V

MA 3430	Probability & Statistics for Engineers	3
MA 2110	Differential Equations & Linear Algebra	3
CPE 3500	Computer Engineering I	3
CS 3800	Data Structures & Algorithms	3
Elective	(Approved)	3

total: 15

Semester VI

CS 3200	Operating Systems	3
MA 2300	Differential Equations	3
CS 3700	Object Orientation	3
Elective	(Humanities - 3 credits must be literature)	3
Elective	(Approved)	3

total: 15

Semester VII

CS 4500	Software Engineering	3
CS 4600	Organization of Programming Languages	3
EE 2050	Overview of Electricity & Electronics	3
Elective	(SS 2720 or SS 2800)	3
Elective	(Approved)	3

total: 15

Semester VIII

CS 4000	Computer Science Seminar	1
CS 4800	System Software	3
Choose one of the following two courses:		3
SS 2200	Macroeconomics	
SS 2210	Microeconiomics	
MA 3200	Graph Theory	3
Elective	(Humanities)	3
Elective	(Approved)	3

total: 16

total credits required: 125

**Required for all students who plan on completing an internship*

Computer Security & Investigation/Bachelor of Science

Semester I

CJ 1100	Introduction to the Criminal Justice System	3
CS 1250	Problem Solving	3
ENG 1250	English Composition I	3
IS 1150	Principles of Information Systems	3
MA 1035	College Algebra	3
IIT 1000	University Experience	1

total: 16

Semester II

BA 1200	Foundations of Business	3
ENG 1270	English Composition II	3
IS 1300	Programming I	4
MA 1060	Trigonomometry	3
NET 1500	Circuits & Signals	3
*IIT 2000	Pre-Internship Seminar	0

total: 18

Semester III

PSY 1700	Introduction to Psychology	3
CJ 2400	Understanding Procedural Law	3
HUM 2000	Introduction to Humanities	3
IS 2100	Internet Fundamentals	3
NET 1200	Network Design I	4

total: 18

Semester IV

IS 2000	Physical Forensics	3
ENG 2320	Professional Communication	3
IS 2300	Programming II	3
MA 2025	Statistical Problem Solving	3
NET 1250	Network Design II	4

total: 16

Semester V

CJ 3600	Basics of Criminal Investigation	3
CS 2500	Database Systems	3
IS 3100	Information Security	3
PSY 3760	Abnormal Psychology	3
Elective	(Approved)	3

total: 15

Semester VI

CJ 3200	Understanding Criminal Behavior	3
HUM 3710	Ethics	3
IS 3200	Computer Forensics	3
NET 2900	Network Administration	3
SS 2800	Sociology	3

total: 15

Semester VII

IS 4700	Senior Project	3
IS 4100	System Analysis & Design	3
Elective	(Social Science)	3
SS 2210	Microeconomics	3
Elective	(Humanities)	3

total: 15

Semester VIII

CJ 4400	Fundamentals of Crime Analysis	3
IS 4600	Disaster Recovery	3
IS 4950	Internship or Elective (Approved)	6
NET 3300	Network Security	3

total: 15

total credits required: 128

**Required for all students who plan on completing an internship*

Digital Graphics & Design/Associate of Science

Semester I

IS 1150	Principles of Information Systems	3
IS 1200	Digital Imaging	3
ENG 1250	English Composition I	3
BA 1200	Foundations of Business	3
MA 1025	Mathematical Problem Solving	3
IIT 1000	University Experience	1

total: 16

Semester II

BA 2500	Marketing	3
ENG 1270	English Composition II	3
IS 1600	Drawing: Design Reasoning	3
PSY 1700	Introduction to Psychology	3
IS 1400	Visual Communications	3
*IIT 2000	Pre-Internship Seminar	0

total: 15

Semester III

IS 1800	Web Multimedia	3
ENG 2320	Professional Communication	3
IS 2400	Design Fundamentals	3
HUM 2000	Introduction to Humanities	3
SS 2210	Microeconomics	3

total: 15

Semester IV

IS 2450	3-D Animation	3
IS 2950	Graphics Portfolio	3
BA 2550	Personal Selling	3
BA 3500	Advertising	3
Elective	(Science)	3

total: 15

total credits required: 61

**Required for all students who plan on completing an internship*

Information Systems/Bachelor of Arts

Semester I

ACC 1010	Accounting Principles	3
CS 1250	Problem Solving	3
ENG 1250	English Composition I	3
IS 1150	Principles of Information Systems	3
MA 1035	College Algebra	3
IIT 1000	University Experience	1

total: 16

Semester II

ACC 2140	Managerial Accounting	3
BA 1200	Foundations of Business	3
ENG 1270	English Composition II	3
IS 1300	Programming I	4
PSY 1700	Introduction to Psychology	3
*IIT 2000	Pre-Internship Seminar	0

total: 16

Semester III

BA 2500	Marketing	3
HUM 2000	Introduction to Humanities	3
IS 2100	Internet Fundamentals	3
IS 2200	Developing Business Solutions	3
Elective	(Approved)	3

total: 15

Semester IV

BA 2010	Principles of Management	3
IS 2300	Programming II	3
MA 2025	Statistical Problem Solving	3
Elective	(Humanities)	3
Elective	(Science)	3

total: 15

Semester V

BA 2800	E-commerce	3
ENG 2320	Professional Communication	3
CS 2500	Database Systems	3
IS 3100	Information Security	3
Elective	(Approved)	3

total: 15

Semester VI

HUM 3710	Ethics	3
IS 2900	Web Applications	3
SS 2800	Sociology	3
Elective	(Approved)	3
Elective	(Humanities - 3 credits must be literature)	3

total: 15

Semester VII

IS 4100	Systems Analysis & Design	3
SS 2210	Microeconomics	3
Elective	(Approved)	3
Elective	(Approved)	3
Elective	(Humanities)	3

total: 15

Semester VIII

IS 4600	Disaster Recovery	3
IS 4700	IS Senior Project	3
IS 4950	Internship or Electives (Approved)	6
Elective	(Social Science)	3

total: 15

total credits required: 122

**Required for all students who plan on completing an internship*

Information Systems/Bachelor of Science

Semester I

ACC 1010	Accounting Principles	3
CS 1250	Problem Solving	3
ENG 1250	English Composition I	3
IS 1150	Principles of Information Systems	3
MA 1035	College Algebra	3
IIT 1000	University Experience	1

total: 16

Semester II

BA 1200	Foundations of Business	3
ENG 1270	English Composition II	3
IS 1300	Programming I	4
MA 1060	Trigonometry	3
NET 1500	Circuits & Signals	3
PSY 1700	Introduction to Psychology	3
*IIT 2000	Pre-Internship Seminar	0

total: 16

Semester III

BA 2500	Marketing	3
HUM 2000	Introduction to Humanities	3
IS 2100	Internet Fundamentals	3
IS 2200	Developing Business Solutions	3
NET 1200	Network Design I	4

total: 16

Semester IV

BA 2010	Principles of Management	3
IS 2300	Programming II	3
MA 2025	Statistical Problem Solving	3
NET 1250	Network Design II	4
Elective	(Science)	3

total: 16

Semester V

BA 2800	E-commerce	3
ENG 2320	Professional Communication	3
CS 2500	Database Systems	3
IS 3100	Information Security	3
Elective	(Approved)	3

toatl: 15

Semester VI

HUM 3710	Ethics	3
IS 2900	Web Applications	3
IS 3200	Computer Forensics	3
NET 2900	Network Administration	3
SS 2800	Sociology	3

total: 15

Semester VII

IS 4100	System Analysis & Design	3
NET 3300	Network Security	3
SS 2210	Microeconomics	3
Elective	(Humanities)	3

total: 12

Semester VIII

IS 4600	Disaster Recovery	3
IS 4700	Information Systems Senior Project	3
IS 4950	Internship or Elective (Approved)	6
Elective	(Social Science)	3

total: 15

total credits required: 121

**Required for all students who plan on completing an internship*

Networking/Bachelor of Science

Semester I

CS 1250	Problem Solving	3
MA 1035	College Algebra	3
ENG 1250	English Composition I	3
NET 1200	Network Design I	4
IS 1800	Web Multimedia	3
IIT 1000	University Experience	1

total: 17

Semester II

NET 1250	Network Design II	4
ENG 1270	English Composition II	3
IS 1300	Programming I	4
EE 2050	Overview of Electricity & Electronics	3
MA 1060	Trigonometry	3
*IIT 2000	Pre-Internship Seminar	0

total: 17

Semester III

PSY 1700	Introduction to Psychology	3
NET 2000	Windows Networking	3
NET 2300	Script Programming	3
EGR 2000	Engineering Communication	3
Elective	(Communication or Literature)	3

total: 15

Semester IV

NET 2500	Linux Networking	3
NET 2900	Network Administration	3
Elective	(Science)	3
HUM 2000	Introduction to Humanities	3
Elective	(Approved)	3

total: 15

Semester V

CS 2500	Database Systems	3
CS 2410	Discrete Structures	3
IS 3100	Information Security	3
Choose one of the following two courses:		3
SS 2200	Macroeconomics	
SS 2210	Microeconomics	
Elective	(Approved)	3

total: 15

Semester VI

NET 3200	Wireless Communication	3
NET 3400	Directed Studies/Networking	3
NET 3300	Network Security	3
Electives	(Approved)	6

total: 15

Semester VII

IS4800	Technical Project Management	3
NET4300	Voice & Video systems	3
Elective	(Humanities)	3
IS 4100	Systems Analysis & Design	3
Elective	(Approved)	3

total: 15

Semester VIII

NET4000	Networking Seminar	1
NET4900	Networking Project/Internship	3
Choose one of the following two courses:		3
SS 2720	Group Dynamics	
SS 2800	Introduction to Sociology	
Elective	(Humanities - 3 credits must be literature)	3
Electives	(Approved)	6

total: 16

total credits required: 125

**Required for all students who plan on completing an internship*

Network Management/Associate of Science

This program provides the student with a background in local and wide area network (LAN/WAN) design and implementation. Network administration issues are also addressed. This program helps to prepare a student to pursue certification as a Cisco Certified Net-working Associate.

Graduates will be prepared to enter the networking field at a technician level. Graduates will be able to assist in the design and installation of network solutions for businesses, schools, or government offices.

Semester I

CS 1250	Problem Solving for Programmers	3
IS 1150	Principles of Information Systems	3
ENG 1250	English Composition 1	3
MA 1035	College Algebra	3
NET 1200	Network Design I	4
IIT 1000	University Experience	1

total: 17

Semester II

ENG 1270	English Composition II	3
NET 1250	Network Design II	4
IS 1300	Programming I	4
PSY 1700	Introduction to Psychology	3
MA 1060	Trigonometry	3

total: 17

Semester III

IS 2100	Internet Fundamentals	3
Choose one of the following two courses:		3
ENG 2320	Professional Communication	
EGR 2000	Engineering Communication	
NET 2000	Windows Networking	3
NET 2300	Script Programming	3
Elective	(Approved)	3

total: 15

Semester IV

NET 2500	Linux Networking	3
CH 1100	Chemistry for Changing Times	3
NET 2900	Network Design & Administration	3
Choose one of the following two courses:		3
SS 2200	Macroeconomics	
SS 2210	Microeconomics	
HUM 2000	Introduction to Humanities	3

total: 15

total credits required: 64

School of Computer Sciences
Software Engineering/Bachelor of Science

A new era in education has begun. In the software engineering program (S.E.), semesters are based around completing various projects, not just going through a schedule of individual classes. You will still have courses in math, English, and other humanities, but now they all directly relate to the S.E. projects you are working on.

For instance, what is learned in calculus will have a direct application to what is being worked on in S.E. And the skills gained from composition will directly enhance a student's ability to communicate S.E. concepts in the business world. And rather than having each course for an entire semester, classes are arranged into 3-to 6-week learning modules that revolve around S.E. projects. The result? A program that is intensely practical and academically rigorous.

Semester I

SE 1100	Introduction to SE/Projects	3
CS 1300	Computer Science I	3
MA 1300	Calculus & Numeric Methods I	4
SS 2720-SE	Group Dynamics	3
ENG 1250A	English Composition I	1
ENG 1270A	English Composition II	1
IIT 1000	University Experience	1

total: 16

Semester II

SE 2100	SE Project I	3
CS 1350	Computer Science II	3
MA 1310	Calculus & Numeric Methods I	4
PSY 1700	Introduction to Psychology	3
ENG 1250B	English Composition I	1
ENG 1270B	English Composition II	1

total: 15

Semester III

SE 2110	SE Project II	3
CS 2500	Database Systems	3
CS 2410	Discrete Structures	3
MA 2150	Linear Algebra	3
ENG 1250C	English Composition I	1
ENG 1270C	English Composition II	1
ENG 2320A	Professional Communications	1

total: 15

Semester IV

SE 2120	SE Project III	3
CS 3700	Object Orientation	3
MA 2300	Differential Equations	3
PH 1300	Physics I	3
PH 1310	Physics I Lab	1
ENG 2320B	Professional Communications	1
HUM 2000	Introduction to Humanities	3

total: 17

Semester V

SE 3110	SE Project IV*	3
CS 3800	Data Structures & Algorithms	3
EGR 3410	Statistical Quality Analysis I	3
PH 2300	Physics II	3
PH 2310	Physics II Lab	1
ENG 2320C	Professional Communications	1
SS 2200/10	Economics	3

total: 17

Semester VI

SE 3120	SE Project V*	3
CS 3200	Operating Systems	3
EGR 3420	Statistical Quality Analysis II	3
CH 1220	General Chemistry & Lab I	3
	Humanities (Elective)	3

total: 15

Semester VII

SE 4900	SE Project/Directive Studies/Internship*	6
CS 4600	Organization of Progressive Languages	3
	Humanities (Elective)	3
	Elective (Approved)	3

total: 15

Semester VIII

SE 4950	SE Project/Internship	12

total: 12

total credits required: 122

School of Computer Sciences

Software Engineering/Bachelor of Science

Gaming Concentration

Semesters I, II, and III are same as previous page.

Semester IV

SE 2120	SE Project III	3
CS 2100	Introduction to Computer Systems	3
MA 2300	Differential Equations	3
PH 1300	Physics I	3
PH 1310	Physics I Lab	1
ENG 2320B	Professional Communications	1
CH 1220	General Chemistry & Lab I	3

total: 17

Semester V is same as previous page.

Semester VI

SE 3120	SE Project V/Game Design	3
CS 3200	Operating Systems	3
EGR 3420	Statistical Quality Analysis II	3
CS 3700	Object Orientation	3
CS 4800	Systems Software	3

total: 15

Semester VII

SE 4900	SE Project/Distribution Processing	3
CS 4600	Organization of Progressive Languages	3
	Humanities (Elective)	9

total: 15

Semester VIII

SE 4950	SE Project/Internship	12

total: 12

total credits required: 122

School of Computer Sciences

Software Engineering/Bachelor of Science

Systems Concentration

Semester I

SE 1100	Introduction to SE/Projects	3
CS 1300	Computer Science I	3
MA 1300	Calculus & Numeric Methods I	4
SS 2720-SE	Group Dynamics	3
ENG 1250A	English Composition I	1
CS 2990	Introduction to Server Systems	3
IIT 1000	University Experience	1

total: 18

Semesters II and III are same as previous page.

Semester IV

SE 2120	SE Project III	3
CS 3700	Object Orientation	3
MA 2300	Differential Equations	3
PH 1300	Physics I	3
PH 1310	Physics I Lab	1
CS 2100	Introduction to Computer Systems	3
ENG 1270C	English Comp II	1

total: 17

Semester V is same as previous page.

Semester VI

CS 4800	Systems Software	3
CS 3200	Operating Systems	3
EGR 3420	Statistical Quality Analysis II	3
CH 1220	General Chemistry & Lab I	3
ENG 2320C	Professional Communications	1
	Humanities (Elective)	3

total: 16

Semester VII

SE 4900	SE Project/Systems Software	3
CS 4600	Organization of Progressive Languages	3
	Humanities (Elective)	6

total: 12

Semester VIII

SE 4950	SE Project/Internship	12

total: 12

total credits required: 122

Web Development/Bachelor of Science

Semester I

CS 1250	Problem Solving	3
ENG 1250	English Composition I	3
IS 1150	Principles of Info Systems	3
IS 1200	Digital Imaging	3
MA 1035	College Algebra	3
IIT 1000	University Experience	1

total: 16

Semester II

BA 1200	Foundations of Business	3
ENG 1270	English Composition II	3
IS 1300	Programming I	4
IS 1400	Visual Communication	3
PSY 1700	Introduction to Psychology	3
*IIT 2000	Pre-Internship Seminar	0

total: 16

Semester III

BA 2500	Marketing	3
IS 2100	Internet Fundamentals	3
IS 2600	Web Site Design	3
IS 1800	Web Multimedia	3
NET 1200	Network Design I	4

total: 16

Semester IV

BA 2550	Personal Selling	3
BA 2010	Principals of Management	3
ENG 2320	Professional Communication	3
IS 2300	Programming II	3
MA 2025	Statistical Problem Solving	3

total: 15

Semester V

CS 2500	Database Systems	3
HUM 2000	Introduction to Humanities	3
IS 3100	Information Security	3
IS 3000	Cascading Style Sheets	3
BA 2800	E-Commerce	3

total: 15

Semester VI

CH 1100	Chemistry for Changing Times	3
IS 2900	Web Applications	3
NET 2900	Network Design & Administration	3
SS 2800	Sociology	3
Elective	(Humanities - 3 credits must be literature)	3

total: 15

Semester VII

IS 4910	Portfolio I	2
BA 2700	Organizational Behavior	3
IS 4100	Systems Analysis & Design	3
SS 2210	Microeconomics	3
Elective	(Approved)	3

total: 14

Semester VIII

IS 4920	Portfolio II	2
IS 4950	Internship or Elective (Approved)	6
Elective	(Social Sciences)	3
Elective	(Humanities)	3

total: 14

total credits required: 121

**Required for all students who plan on completing an internship*

Web Design/Associate of Science

Semester I

CS 1250	Problem Solving	3
IS 1150	Principles of Information Systems	3
ENG 1250	English Composition I	3
MA 1035	College Algebra	3
IS 1200	Digital Imaging	3
IIT 1000	University Experience	1

total: 16

Semester II

ENG 1270	English Composition II	3
IS 1400	Visual Communications	3
IS 1300	Programming I	4
PSY 1700	Introduction to Psychology	3
HUM 2000	Introduction to Humanities	3

total: 16

Semester III

IS 2100	Internet Fundamentals	3
CS 2500	Database Systems	3
BA 2500	Marketing	3
IS 1800	Web Multimedia	3
NET 1200	Network Design I	4

total: 16

Semester IV

IS 2300	Programming II	3
CH 1100	Chemistry for Changing Times	3
IS 2600	Web Site Design	3
IS 2900	Web Applications	3
SS 2210	Microeconomics	3

total: 15

total credits required: 63

COLLEGE of GENERAL STUDIES

About the College of General Studies

The College of General Studies at Indiana Tech is dedicated to extending learning beyond traditional borders and engaging a richly diverse student population. Our college promotes innovative learning experiences for all students in science, mathematics, social sciences, humanities, and language arts which will enhance their critical, intellectual, and creative skills necessary in our complex world.

Through completion of these foundational general education requirements, students will be able to shape their lives and careers, and become engaged citizens and leaders in their fields. In addition, the College of General Studies offers career-focused professional preparation for vital social service programs.

Convinced that learning in the liberal arts and sciences is essential to developing the whole person, the College of General Studies seeks to promote critical, intellectual, and creative skills. The College of General Studies will achieve its vision through continually improving the educational experiences of our students. We will develop, maintain, and deliver the university general education core classes and social service programs to meet current and evolving demands of life and work beyond the college classroom by engaging in the following efforts:

The college offers semester, accelerated, and distance learning classes to accommodate the educational needs of all students.

- Providing outstanding general education courses integrated with each student's major
- Engaging in a cycle of college program and policy review as a means of ongoing assessment and continuous improvement
- Emphasizing integrity and ethical behavior in all work and life decisions
- Employing and developing faculty who create outstanding new programs, shape curricula, teach and mentor students

Contents

College of General Studies
Communications/Bachelor of Arts

Communication is an essential part of life. Consider the global economy we live in today—products can be bought, sold, shipped and delivered across the globe in a matter of hours. Cultures and societies the world over are separated by a few clicks of the mouse. Truly, businesses, organizations, and society in general rely on good communicators for success. This degree hones your ability to listen, understand, and share information. Indiana Tech's communication degree offers students a well-rounded educational experience, pooling together a variety of courses in business, humanities, psychology, and social sciences. The program puts much emphasis on understanding how social, cultural, and economic diversity effects the way people and organizations communicate. You'll be ready for an exciting career in advertising, marketing, copy writing, or public relations. The career possibilities are virtually endless for a skilled communicator.

Semester I

COMM 1250	Foundations of Communication	3
ENG 1250	English Composition I	3
IIT 1000	University Experience	1
MA 1000	Foundations of College Mathematics	3
MIS 1300	Software Tools	3
PSY 1700	Introduction to Psychology	3
		total: 16

Semester II

COMM 1500	Rhetoric & Argument	3
ENG 1270	English Composition II	3
IIT 1270	Introduction to Critical Inquiry	3
MA 1025	Mathematical Problem Solving	3
PSY 2000	Understanding Diversity	3
		total: 15

Semester III

BA 1200	Foundations of Business	3
COMM 1600	Introduction to Journalism	3
COMM 2500	Public Communication	3
ENG 2320	Professional Communication	3
Elective	(Approved)	3
		total: 15

Semester IV

BA 2010	Principles of Management	3
COMM 2000	Persuasion & Propaganda	3
HUM 2000	Introduction to Humanities	3
IS 1200	Digital Imaging	3
SS 2720	Group Dynamics	3
		total: 15

Semester V

BA 2500	Marketing	3
COMM 3100	Media Theory & Criticism	3
COMM 3150	Intercultural Communication	3
MA 2025	Statistical Problem Solving	3
Elective	(Humanities - 3 credits must be literature)	3
		total: 15

Semester VI

BA 3500	Advertising	3
COMM 3250	Media Writing	3
Choose one of the following two courses:		3
SS 2200	Macroeconomics	
SS 2210	Microeconomics	
SS 2800	Introduction to Sociology	3
Elective	Approved	3
		total: 15

Semester VII

BA 2850	Managing in the Legal Environment	3
COMM 2100	Introduction to Cinema	3
HUM 3710	Ethics	3
Electives	(Approved)	6
Elective	(Science)	3
		total: 18

Semester VIII

BA 4800	Public Relations	3
COMM 4250	Crisis Communication	3
COMM 4750	Applied Communication	3
COMM 4910	Senior Capstone	3
IS 1400	Visual Communication	3
		total: 15

total credits required: 124

College of General Studies
Human Services/Bachelor of Science**

The human services degree uses a tracked teaching approach, Tracked Educational Adult Modules (TEAM), with students organized into TEAM groups of 12 to 18 members. Each TEAM proceeds through the HS courses in a predetermined order. Since each course builds upon the previous one, students cannot drop in or out of the TEAM at will. If you drop from a TEAM, you may have to wait until the next TEAM to re-register for classes. For additional information, please contact the Warrior Information Network.

Business Administration

BA 1200	Foundations of Business	3
BA 2010	Principles of Management	3
BA 2410	Human Resource Management	3
BA 2700	Organizational Behavior	3
BA 4700	Training & Development	3

English

ENG 1250	English Composition I	3
ENG 1270	English Composition II	3
ENG 2300	Professional Communication	3
ENG 2400	Grant Writing	3

Math, Science & Computer Studies

BIO 1000	Introduction to Biology	4
MA 1000	Foundations of College Math	3
MA 1025	Mathematical Problem-Solving	3
MIS 1300	Software Tools	3

Humanities & Social Sciences

CJ 3100	A System of Juvenile Justice	3
HUM 2000	Introduction to Humanities	3
HUM 3710	Ethics	3
PSY 1700	Introduction to Psychology	3
*PSY 1750	Human Growth & Development	3
PSY 2000	Understanding Diversity	3
PSY 3730	Aging	3
PSY 3740	Counseling Techniques	3
PSY 3760	Abnormal Psychology	3
*PSY 3770	Assessment in Psychology	3
*PSY 3780	Research Methods and Statistics	3
*REC 3010	Nonprofit Management	3
SS 2200	Macroeconomics	3
SS 2720	Group Dynamics	3
SS 2800	Introduction to Sociology	3
*SS 2810	Social Problems	3

Human Services

HS 1200	Introduction to Human Services	3
*HS 1500	Helping Relationships	3
*HS 2000	Human Services Programming	3
HS 2600	Field Experience	3
SS 2900	Community & Social Movements	3
HS 4950	Internship	3
*LHS 2100	First Aid in Fitness Settings	3

Electives

Electives	(PSY, SS, CJ, SPA)	6
Electives	(Humanities - 3 credits must be literature)	6
Elective	(Approved)	3

total credits required: 124

GENERAL STUDIES

* *Team courses.*

[1] *Students must complete ENG 1255, PSY 1700 and HS 1200 to enroll in the HS TEAM.*

** *Offered only through CPS*

The Recreation Management & Therapeutic Recreation Programs

Recreation management and therapeutic recreation majors are prepared for employment or graduate studies in leisure services and recreation. The recreation professional diagnoses needs, develops programs, and manages physical, social and cultural activities and facilities.

The degree in recreation management prepares a student to seek employment in a variety of recreation settings. The degree in therapeutic recreation provides students with practical experience and a theoretical background sufficient to work in therapeutic and clinical settings. Both programs have been designed according to national recreation curricular guidelines. Indiana Tech uses the guidelines set by the National Council for Therapeutic Recreation Certification in the major of therapeutic recreation. By taking the prescribed curriculum, students are eligible to take the NCTRC national certification exam. Indiana Tech offers three degree programs: A.S. in recreation management, B.S. in recreation management, and B.S. therapeutic recreation. Also, recreation management students can select a sports management concentration.

The associate degree is designed for activity specialists and programmers. Credits earned in the two-year program are fully applicable toward the bachelor's degree. The bachelor's degree prepares students for supervisory and administrative positions. Our graduates have taken jobs as managers, programmers, coaches, and administrators all over the world. They work in many types of organizations including park and recreation complexes, fitness centers, scouting, amusement centers, community centers, church ministries, YMCAs, YWCAs, art councils, hospitals, veterans' centers, sporting goods companies, and social agencies. Therapeutic recreation students work with all types of special populations. All majors are urged to tailor their degree programs by choosing their areas of career interest with electives, special topics, practicums and internships.

Recreation Management/Associate of Science

Semester I

REC 1200	Introduction to Recreation Management	3
BA 1200	Foundations of Business	3
PSY 1700	Introduction to Psychology	3
ENG 1250	English Composition I	3
MIS 1300	Software Tools	3
IIT 1000	University Experience	1

total: 16

Semester II

MA 1000	Introduction to College Mathematics	3
PSY 1750	Human Growth & Development	3
HS 1200	Introduction to Human Services	3
ENG 1270	English Composition II	3
IIT 1270	Introduction to Critical Inquiry	3
*IIT 2000	Pre-Internship Seminar	0

total: 15

Semester III

REC 2000	Recreation Programming	3
SS 2800	Introduction to Sociology	3
COMM 2500	Public Communication	3
HUM 2000	Introduction to Humanities	3
BA 2010	Principles of Management	3
Elective	(Approved)	3

total: 18

Semester IV

SS 2720	Group Dynamics	3
REC 2600	Recreation Field Experience	3
PSY 2000	Understanding Diversity	3
MA 1025	Mathematical Problem Solving	3
Elective	(Humanities)	3

total: 15

total credits required: 64

**Required for all students who plan on completing an internship*

Recreation Management/Bachelor of Science

Semester I

REC 1200	Introduction to Recreation Management	3
BA 1200	Foundations of Business	3
PSY 1700	Introduction to Psychology	3
ENG 1250	English Composition I	3
MIS 1300	Software Tools	3
IIT 1000	University Experience	1

total: 16

Semester II

MA 1000	Foundations of Quantitative Methods	3
PSY 1750	Human Growth & Development	3
ENG 1270	English Composition II	3
HS 1200	Introduction to Human Services	3
IIT 1270	Introduction to Critical Inquiry	3
*IIT 2000	Pre-Internship Seminar	0

total: 15

Semester III

REC 2000	Recreation Programming	3
SS 2800	Introduction to Sociology	3
HUM 2000	Introduction to Humanities	3
COMM 2500	Public Communication	3
BA 2010	Principles of Management	3
Elective	(Approved)	3

total: 18

Semester IV

SS 2720	Group Dynamics	3
REC 2600	Recreation Field Experience	3
PSY 2000	Understanding Diversity	3
MA 1025	Mathematical Problem Solving	3
BIO 1110	Anatomy & Physiology	3

total: 15

Semester V

SS 2810	Social Problems	3
BA 2500	Marketing	3
BA 2410	Human Resources Management	3
ENG 2400	Grantwriting	3
MA 2025	Statistical Problem-Solving	3

total: 15

Semester VI

REC 3030	Legal Issues in Recreation & Sport Mgmt.	3
SS 2200	Macroeconomics	3
PSY 3740	Counseling Techniques	3
Elective	(Approved)	3
Elective	(PSY/SS/CJ)	3

total: 15

Semester VII

BA 3710	Leadership	3
Elective	(Humanities)	3
Electives	(Approved)	6
Elective	(PSY/SS/CJ)	3

total: 15

Semester VIII

REC 4950	Recreation Internship	15

total: 15

total credits required: 124

Required for all students who plan on completing an internship

Recreation Management/Bachelor of Science
Sports Management Concentration

Semester I

REC 1200	Introduction to Recreation Services	3
BA 1200	Foundations of Business	3
SM 1400	Introduction to Sports Management	3
ENG 1250	English Composition I	3
PSY 1700	Introduction to Psychology	3
IIT 1000	University Experience	1

total: 16

Semester II

MIS 1300	Software Tools	3
BA 2500	Marketing	3
REC 1250	Introduction to Sports/Activities	3
ENG 1270	English Composition II	3
IIT 1270	Introduction to Critical Inquiry	3
*IIT 2000	Pre-Internship Seminar	0

total: 15

Semester III

MA 1000	Introduction to College Mathematics	3
REC 2000	Recreation Programming	3
HUM 2000	Introduction to Humanities	3
SS 2800	Introduction to Sociology	3
BA 2010	Principles of Management	3

total: 15

Semester IV

BA 2410	Human Resources Management	3
SM 2600	Field Experience	3
SM 3100	Facilities Management	3
PSY 1750	Human Growth & Development	3
MA 1025	Mathematical Problem Solving	3

total: 15

Semester V

COMM 2500	Public Communication	3
SS 2200	Macroeconomics	3
Choose one of the following two courses:		3
BA 2700	Organizational Behavior	
SS 2720	Group Dynamics	
Elective	(Approved)	3
Elective	(Humanities - 3 credits must be literature)	3

total: 15

Semester VI

REC 3010	Nonprofit Management Practices	3
BA 3710	Leadership	3
PSY 3740	Counseling Techniques	3
Electives	(Approved)	3
MA 2025	Statistical Problem-Solving	3

total: 15

Semester VII

SM 4200	Marketing, Promotions, Fund Raising	3
SS 3300	Sports in Society	3
BIO 1110	Anatomy & Physiology	3
Electives	(Approved)	6
Elective	(Humanities)	3

total: 18

Semester VIII

REC 4950	Recreation Internship	15

total credits required: 124

**Required for all students who plan on completing an internship*

Therapeutic Recreation/Bachelor of Science

Semester I

TR 1230	Introduction to Therapeutic Recreation	3
MA 1000	Foundations of Quantitative Methods	3
PSY 1700	Introduction to Psychology	3
ENG 1250	English Composition I	3
MIS 1300	Software Tools	3
IIT 1000	University Experience	1

total: 16

Semester II

REC 1200	Introduction to Recreation Services	3
PSY 1750	Human Growth & Development	3
ENG 1270	English Composition II	3
HS 1200	Introduction to Human Services	3
IIT 1270	Introduction to Critical Inquiry	3
*IIT 2000	Pre-Internship Seminar	0

total: 15

Semester III

REC 2000	Recreation Programming	3
HUM 2000	Introduction to Humanities	3
COMM 2500	Public Communication	3
BA 1200	Foundations of Business	3
SS 2800	Introduction to Sociology	3

total: 15

Semester IV

SS 2720	Group Dynamics	3
TR 2600	Therapeutic Recreation Field Experience	3
MA 1025	Mathematical Problem Solving	3
TR 2300	TR Intervention & Facilitation Techniques	3
BIO 1110	Anatomy & Physiology	3

total: 15

Semester V

SS 2810	Social Problems	3
PSY 3760	Abnormal Psychology	3
PSY 2000	Understanding Diversity	3
TR 3100	TR for Special Populations	3
Elective	(Humantities - 3 credits must be literature)	3

total: 15

Semester VI

SS 2200	Macroeconomics	3
PSY 3740	Counseling Techniques	3
REC 3030	Legal Issues in Recreation & Sport Mgmt	3
TR 3200	Advancement of the TR Profession	3
Elective	(Humanities)	3

total: 15

Semester VII

TR 4100	Client Assessment & Evaluation	3
TR 3300	Administration & Management in Therapeutic Recreation	3
Elective	(Humanities)	3
Elective	(PSY/SS/CJ)	6
MA 2025	Statistical Problem-Solving	3

total: 18

Semester VIII

TR 4950	Therapeutic Recreation Internship	15

total credits required: 125

**Required for all students who plan on completing an internship*

Psychology/Bachelor of Science

The human mind is a complex thing. Our minds stipulate how we communicate, think, learn, feel, act and react to our surroundings. The psychology program at Indiana Tech is designed to teach you to understand the human mind and apply that knowledge to helping people. If you're fascinated by studying people and enjoy working with them, then you're made for a career in psychology. After all, if you truly want to help someone, it's essential that you understand them.

The primary focus of the psychology curriculum is to provide the foundation for a practitioner-oriented career. The specific goals of the program are:

- Develop an appreciation and understanding of individual human behavior.
- Develop strong communication and critical thinking skills, as well as necessary math and technology skills.
- Provide students with the basic skills needed for an entry-level psychology position or for continued professional development, such as graduate study.

The curriculum also includes course requirements appropriate for students interested in further graduate study and research.

Graduates holding this degree may choose a career in many fields including human services, human resource development, sales, law enforcement, market research, child care, counseling, and residential care for elderly or developmentally impaired persons.

Semester I

PSY 1700	Introduction to Psychology	3
BA 1200	Foundation of Business	3
MA 1000	Introduction to College Mathematics	3
ENG 1250	English Composition I	3
MIS 1300	Software Tools	3
IIT 1000	University Experience	1
	total:	**16**

Semester II

PSY 1750	Human Growth & Development	3
IIT 1270	Introduction to Critical Inquiry	3
HS 1200	Introduction to Human Services	3
ENG 1270	English Composition II	3
MA 1025	Mathematical Problem Solving	3
*IIT 2000	Pre-Internship Seminar	0
	total:	**15**

Semester III

PSY 2760	Personality Theory	3
SS 2800	Introduction to Sociology	3
HUM 2000	Introduction to Humanities	3
ENG 2320	Professional Communication	3
BA 2010	Principles of Management	3
	total:	**15**

Semester IV

PSY 2780	Social Psychology	3
SS 2720	Group Dynamics	3
Chooses one of the following two courses:		3
PSY 2600	Field Experience (suggested)	
SS 2810	Social Problems	3
BIO 2710	Human Anatomy & Physiology I	3
BIO 2720	Human Anatomy & Physiology I-Lab	1
Elective	(Approved)	3
	total:	**16**

Semester V

PSY 3760	Abnormal Psychology	3
PSY 3770	Assessment in Psychology	3
SS 2200	Macroeconomics	3
Elective	(PSY)	3
Elective	(Humanities)	3
	total:	**15**

Semester VI

HS 1200	Introduction to Human Services	3
PSY 3740	Counseling Techniques	3
PSY 3780	Research & Statistics in Psychology	3
PSY 2000	Understanding Diversity	3
Elective	(Humanities - 3 credits must be literature)	3
	total:	**15**

Semester VII

PSY 4200	Senior Seminar in Psychology	3
BA 2700	Organizational Behavior	3
Choose one of the following two courses:		3
PSY 3720	Child & Adolescent Psychology	
PSY 3730	Aging	
Elective	(ENG/HUM/SS/PSY)	3
Electives	(Approved)	6
	total:	**18**

Semester VIII

PSY 4950	Internship (Suggested)	3
Electives	(Approved)	12
	total:	**15**

total credits required: 125

**Required for all students who plan on completing an internship*

School of Education

Elementary school contains some of the most crucial years of our lives. It is where we first learn mathematics, reading, and writing. What we learn in grade school is a springboard for our education in high school, college, and beyond.

At Indiana Tech we understand the importance of those first years in school. We also know that education has evolved in the last few decades; computers and the Internet have changed the way children are taught and what they learn. The changing face of our society requires new teachers to meet the needs of all students, regardless of ethnicity, learning levels, and needs.

The mission of the School of Education is to prepare elementary education professionals from diverse backgrounds with the knowledge, skills, and dispositions to promote student learning and development, especially those in urban schools. Building on quality field experiences, the program develops reflective practitioners who model lifelong learning, technological competence, and professionalism. The university and the program are committed to facilitating excellence through equity, diversity, and social advocacy. Indiana Tech's School of Education is dedicated to the following:

- To prepare, train, and strive to produce the best-trained beginning teachers in the state of Indiana
- To provide quality observations, practicum and field-based experiences for beginning and pre-service teachers
- To have program offerings in an abundance to keep up with the growing demands of teacher education
- To provide teacher candidates with opportunities to reflect on their teaching practices
- To increase the diversity and international perspective of future teachers
- To provide teachers opportunities to prepare, refurbish, and refresh themselves by engaging in opportunities to participate in research, professional development, workshops, lectures, discussions, courses, and information exchanges with colleagues from around the world.

There are a minimum number of hours required from the National Council for Accreditation of Teacher Education for teacher education programs. Therefore, every EDU course has a field component accompanying it. Some courses have 60 hours attached; others have 120 hours attached.

All students must register for teacher candidacy the semester before the actual experience begins. Teacher candidacy serves as the capstone semester of the teacher education program. This semester provides all teacher education students the opportunity to apply best professional practices in two separate and diverse experiences in state accredited P-12 schools or in designated international and national sites. .It is the policy of Indiana Tech that all course work be completed before candidacy.

Teacher Education/Bachelor of Science

K–6 with one additional emphasis for middle school/junior high highly qualified area

Semester I

ENG 1250	English Composition I	3
SPA 1100	Spanish I	3
PSY 1700	Introduction to Psychology	3
EDU 1000	Introduction to Education	3
IIT 1000	University Experience	1
Choose one of the following two courses:		3
MA 1000	Foundations of College Math	
MA 1010	Basic Algebra	

total: 16

Semester II

ENG 1270	English Composition II	3
IIT 1270	Introduction to Critical Inquiry	3
BIO 1000	General Biology & Lab	3
HUM 2000	Introduction to Humanities	3
Choose one of the following two courses:		3
MA 1010	Basic Algebra	
MA 1035	College Algebra	

total: 15

Summer Session I

All education majors must take one elective during summer or online.

Elective	(Approved)	3

Semester III

EDU 1200	Issues in American Education	3
PSY 2000	Understanding Diversity	3
ENG 2320	Professional Communication	3
HUM 2510	Music Appreciation	3
LHS 2100	First Aid in Fitness Settings	3

total: 15[1]

Semester IV

EDU 2010	Educational Psychology & Lab	3
SPA 1200	Spanish II	3
EDU 2050	Technology Tools of Teaching	3
PH 1000	Physical Science	3
SS 2410	World History	3

total: 15[2]

Summer Session II (or Online)

Electives	(Math)	6

Semester V[5]

Block A

EDU 3020	General Teaching Methods	3
EDU 3040	Teaching Methods for Language Arts & Social Studies	3
EDU 3150	Methods of Reading	3
EDU 3200	Teaching Special Needs Students	3
HUM, SS, ENG, MA, Science – required or concentration courses from approved list		3

total: 15

Semester VI[5]

Block B

EDU 3050	Teaching Methods for Math/Science	3
EDU 3100	Introduction to Literature	3
EDU 3250	Testing – Assessment for Teaching	3
EDU 4020	Inclusive Classroom Instruction	3
HUM, SS, ENG, MA, Science – required or concentration courses from approved list		3

total: 15

Summer Session: Preparation Seminar—Praxis II Prep

All coursework and Praxis exams have to be completed before teacher candidacy can begin. All courses must be completed with at least a C or better. You must have a GPA of 2.75 to complete teacher candidacy. Students who have not made passing scores on all Praxis elementary education exams will not student teach until this is accomplished. No exceptions will be made.

Semester VII[5]

EDU 4000	Functional Behavior Analysis & Behavior Management	3
EDU 4030	Integrated Methods: Art, Music, PE/Health	3
EDU 4040	Curriculum Materials in the Classroom	3
EDU 4100	School Law/State & Federal Perspectives	3
HUM, SS, ENG, MA, Science – required or concentration courses from approved list		3

total: 15

Semester VIII[5]

EDU 4900	Teacher Candidacy (Early)	6
EDU 4950	Teacher Candidacy (Middle)	6
EDU 4850	Seminar for Teacher Candidacy	1

total: 13

total credits required: 130

Students must complete all required content courses and choose one concentration area. Students can choose from the approved concentration option courses on the next page so that they have a total of 24 credits in the content area. (NCLB)

[1]Praxis I exam must be taken at anytime prior to semester V

[2]Praxis I scores must be sent to the director by the end of May to progress to junior block A (semester V)

[3]Math majors only. They must take one elective during summer or online.

[4]Social studies majors only. They must take one elective during summer or online.

[5]Courses in this semester should be considered a block and taken together.

Teacher Education/Bachelor of Science

K–6 with one additional emphasis for middle school/junior high highly qualified area

The core teacher education program prepares students for teaching grades K–6. Additionally, all students choose one of four concentrations to specialize in for grades 6–8: English, math, science, or social sciences. Which is right for you? We suggest you follow your passion. If there's a subject you love to learn, you'll probably love to teach it. The required credits and approved courses you can choose from for each concentration are listed below.

ENGLISH ELECTIVES:

18 credits from the following:

ENG 2400	Grantwriting	3
ENG 2990	Special Topics in English	Variable Credit
HUM 3310	Interpretation of Fiction	3
HUM 3320	Major British Writers	3
HUM 3335	American Writers	3
HUM 3350	Great Books of the Western World	3
HUM 3360	African American Literature	3

MATH ELECTIVES:

Required:

MA 3520	Math for Elementary Teachers	3

15 credits from the following:

MA 1040	Finite Mathematics	3
MA 1050	Geometry	3
MA 1060	Trigonometry	3
MA 1100	Applied Calculus I	3
MA 1110	Applied Calculus II	3
MA 1200	Calculus I	3
MA 1210	Calculus II	3
MA 2100	Differential Equations & Linear Algebra	3
MA 2990	Special Topics in Mathematics	Variable Credit

SCIENCE ELECTIVES:

18 credits from the following:

BIO 1100	Anatomy & Physiology	3
CH 1220	General Chemistry & Lab I	5
CH 1230	General Chemistry	3
PH 1300	General Physics I	3
PH 1310	General Physics I Lab	1
PH 2100	Fundamentals of Physics II	3
PH 2300	General Physics II	3
PH 2310	General Physics II Lab	1
PH 3300	Optics	3

SOCIAL SCIENCES

18 credits from the following:

SS 2200	Macroeconomics	3
SS 2210	Microeconomics	3
SS 2430	Early United States History	3
SS 2440	History of Modern America	3
SS 2460	African-American History & Culture	3
SS 3010	Geography	3
SS 4990	Special Topics in SS	Variable

K–12 Physical Education/Bachelor of Science
with Coaching Minor

In our fast-paced, super-sized society, it's getting harder and harder to eat right and exercise often. Physical education majors are filling an ever more important role in K–12 schools across the country. They are instilling in their students the healthy eating and exercise habits that will benefit them for a lifetime. Physical educators also teach their students about teamwork, endurance, and commitment—characteristics that are beneficial for everyone. Make a positive impact on young minds—join the ranks of the future educators in Indiana Tech's physical education program. Graduates will also be trained to coach junior high school athletics.

Semester I

ENG 1250	English Composition I	3
BIO 1000	Introductory Biology	4
SPA 01100	Spanish I	3
IIT 1000	University Experience	1
MA 1010	Basic Algebra	3
EDU 1000	Introduction to Education	3

total: 17

Semester II

ENG 1270	English Composition II	3
MA 1035	College Algebra	3
PHED 1010	Theory & Fundamentals of Developmental Skills in PE/Coaching	2
EDU 1200	Issues in American Education	3
PSY 1700	Introduction to Psychology	3
SPA 1200	Spanish II	3

total: 17

Semester III

ENG 2320	Professional Communication	3
PH 1000	Physical Science	3
EDU 2010	Educational Psychology	4
EDU 2050	Technology in Teaching	3
[4]LHS 2100	First Aid in Fitness Settings	3*

total: 16

Semester IV

LHS 2020	Theory & Fundamentals of Developmental Skills in PE/Coaching	2
SS 2410	World History	3
HUM 2510	Music Appreciation	3
BIO 1110	Anatomy & Physiology	3
LHS 2120	Care & Presentation of Athletic Injuries	3
PSY 2000	Understanding Diversity	3

total: 17

Semester V

PHED 3030	Theory & Fundamentals of Developmental Skills in PE/Coaching	2
LHS 2110	Principles of Fitness/Nutrition/WT	4
LHS 3100	Introduction to Physiology of Exercise	3
PHED 3600	History & Philosophy of PE/Sport	3
PHED 3610	Beginning Swimming	2
PHED 3800	Methods and Materials Elementary/ Intermediate PE	3

total: 17

Semester VI

PHED 3210	Principles and Philosophy of PE/Coaching	3
PHED 3650	Outdoor Leisure and Recreation	3
PHED 3700	Motor Learning	3
PHED 3720	Methods & Materials Middle/Secondary PE	3
PHED 3850	Curriculum Development & Theory	3
PHED 3040	Theory & Fundamentals of Developmental Skills in PE/Coaching	2

total: 17

Summer Session: Preparation Seminar—Praxis II Prep

All coursework and Praxis exams have to be completed before teacher candidacy can begin. All courses must be completed with at least a C or better. You must have a GPA of 2.75 to complete teacher candidacy. Students who have not made passing scores on all Praxis physical education exams will not student teach until this is accomplished. No exceptions will be made.

Semester VII

PHED 4810	Adaptive & Corrective PE	3
PHED 4610	Measure & Evaluation in PE/Sport	3
PHED 4700	Instructional Techniques in Teaching Individual & Team Sports	2
PHED 4710	Water Safety Instruction	2
PHED 4800	Administration of Physical Education	3
LHS 4300	Biomechanics of Physical Activity	3

total: 17

Semester VIII

PHED 4900	Student Teaching–Lower Grades	6
PHED 4950	Student Teaching–Upper Grades	6
PHED 4850	Professional Development Seminar	2

total: 14

total credits required: 132

[4] Upon completion of the course, students will earn certification in American Red Cross CPR/AED for the Professional Rescuer and First Aid.

CENTER for CRIMINAL SCIENCES

part of the College of General Studies

About the Center for Criminal Sciences

The field of criminal justice is continuously becoming more complex, diversified and technical in nature. Criminal justice is now a field that encompasses police work, forensic science, corrections, the courts, counseling and private security. Criminal justice agencies operate on the local, state and federal levels and in the private sector. Technological advances also have changed the way professionals in the field accomplish their work. Exciting new opportunities await individuals who are interested in pursuing a career in the field as police officers, crime scene technicians, correction officers, juvenile justice officers and counselors, probation workers, homeland security officers, FBI agents, U.S. Marshals, customs officers, lawyers, security agents and private investigators.

Indiana Tech's Center for Criminal Sciences reflects the complex nature of modern police work. The emphasis of learning is focused on preparing students to succeed. Our programs include courses in criminal investigation, police work, corrections, juvenile justice, police operations, technology, crime mapping and law. To deliver the courses, we rely on a diverse group of professionals in the fields of police work, criminal intelligence, the military, law, geography, probation, juvenile justice, and psychology. They have advanced degrees and specialty training that makes them experts in their respective fields. Having professionals in the classroom also allows students to have access to instructors' real life experiences, firsthand knowledge of the job and career guidance.

Indiana Tech's instructors use a problem solving approach to teaching. Since criminal justice involves solving human problems, this type of experiential teaching transfers better to the workplace. Examples of experiential learning include processing a crime scene, structuring a criminal profile, conducting mock criminal interrogations and doing a behavioral analysis of a criminal. To encourage future job success, the criminal justice department emphasizes internships at the local, state, federal and private level.

In addition to expert instructors, we are committed to using the latest technology in the classroom. Students use mapping, criminal intelligence, digital imagery, forensic computer software, software for composite drawing, and crime scene software in their classes. Indiana Tech will continue to push the envelope to ensure that our students are up to date in the war against crime.

Content

Criminal Justice/Bachelor of Science
Criminal Justice Administration Specialty

The specialization in criminal justice administration examines all the work that goes on behind the scenes in a criminal justice organization. Managing the operations of police organization requires a unique ability to understand the needs of the community being served, as well as the components of the organization. These courses enable entry-level individuals to enter organizations with a broader understanding of the rationale for decision-making within the organization.

If you enjoy leading a team of people and have the desire to make a real difference in your community, this is the degree for you.

With a criminal justice administration degree, graduates can excel as a high-ranking administrator in municipal, county or state organizations. Other career options include becoming civil service officers, state and federal parole officers, court administrators, federal law enforcement officers or positions in the private sector.

Semester I

BA 1200	Foundations of Business	3
CJ 1100	Introduction to the Criminal Justice System	3
ENG 1250	English Composition I	3
IIT 1000	University Experience	1
MA 1000	Introduction to College Mathematics	3
MIS 1300	Software Tools	3

total: 16

Semester II

CJ 1200	Criminology	3
CJ 1300	The Police in America	3
CJ 1400	Corrections in America	3
ENG 1270	English Composition II	3
IIT 1270	Introduction to Critical Inquiry	3
*IIT 2000	Pre-internship Seminar	0

total: 15

Semester III

CJ 2000	Homeland Security	3
CJ 2300	Substantive Criminal Law	3
CJ 2400	Understanding Procedural Law	3
MA 1025	Mathematical Problem Solving	3
PSY 1700	Introduction to Psychology	3

total: 15

Semester IV

CJ 2600	Laws of Evidence	3
CJ 3300	Victimology	3
CJ 3400	Ethics & Cultural Diversity in Criminal Justice	3
CJ Special Topic	General Studies Only	1
HUM 2000	Introduction to Humanities	3
MA 2025	Statistical Problem Solving	3

total: 16

Semester V

CJ 2500	Basics of Criminal Investigation	3
CJ 3100	A System of Juvenile Justice	3
CJ 3200	Understanding Criminal Behavior	3
CJ Special Topic	General Studies Only	1
PSY 3760	Abnormal Psychology	3
SS 2800	Introduction to Sociology	3

total: 16

Semester VI

BA 2010	Principles of Management	3
CJ Special Topic	General Studies Only	1
Elective	Approved or Criminal Justice	3
ENG 2320	Professional Communication	3
PH 1000, BIO 1110, CHEM 1000, SCI 3000 or equivalent		3 or 4
SS 2810	Social Problems	3

total: 16 or 17

Semester VII

BA 2700	Organizational Behavior	3
CJ 3510	Community & Problem Oriented Policing	3
Elective	Approved or Criminal Justice	3
Elective	Humanities	3
Elective	Psychology	3

total: 15

Semester VIII

CJ 4110	Law Enforcement Planning Process	3
CJ 4210	Police Organization & Management	3
Elective	Approved or Criminal Justice	3
Elective	(Humanities - 3 credits must be literature)	3
Elective	Psychology	3

total: 15

total credits required: 124 or 125

**Required for all students who plan on completing an internship*

Center for Criminal Sciences

Criminal Justice/Bachelor of Science
Crime Analysis Specialty

The crime analysis specialty has been designed to meet the growing need for professionals who are capable of analyzing crime and intelligence data. The curriculum blends criminological theory with the use of computer software and analytical techniques to explore methods of predicting, preventing and controlling crime.

In the curriculum, you will notice the many classes that emphasize understanding of psychology and sociology. These courses, based on understanding the way people think and act, will help you achieve a high-level understanding of the fundamental causes of crime and how communities can protect themselves from its effects.

Graduates of the crime analysis program will be qualified to be either sworn law enforcement personnel or civilian employees in a wide variety of agencies. They will have the skills to gather, analyze and disseminate data to solve criminal justice problems.

Semester I

BA 1200	Foundations of Business	3
CJ 1100	Introduction to the Criminal Justice System	3
ENG 1250	English Composition I	3
IIT 1000	University Experience	1
MA 1000	Introduction to College Mathematics	3
MIS 1300	Software Tools	3

total: 16

Semester II

CJ 1200	Criminology	3
CJ 1300	The Police in America	3
CJ 1400	Corrections in America	3
ENG 1270	English Composition II	3
IIT 1270	Introduction to Critical Inquiry	3
*IIT 2000	Pre-internship Seminar	0

total: 15

Semester III

CJ 2000	Homeland Security	3
CJ 2300	Substantive Criminal Law	3
CJ 2400	Understanding Procedural Law	3
MA 1025	Mathematical Problem Solving	3
PSY 1700	Introduction to Psychology	3

total: 15

Semester IV

CJ 2600	Laws of Evidence	3
CJ 3300	Victimology	3
CJ 3400	Ethics & Cultural Diversity in Criminal Justice	3
CJ Special Topic	General Studies Only	1
HUM 2000	Introduction to Humanities	3
MA 2025	Statistical Problem Solving	3

total: 16

Semester V

CJ 2500	Basics of Criminal Investigation	3
CJ 3100	A System of Juvenile Justice	3
CJ 3200	Understanding Criminal Behavior	3
CJ Special Topic	General Studies Only	1
PSY 3760	Abnormal Psychology	3
SS 2800	Introduction to Sociology	3

total: 16

Semester VI

CJ 3520	Crime Scene Investigation	3
CJ Special Topic	General Studies Only	1
ENG 2320	Professional Communication	3
PH 1000, BIO 1110, CHEM 1000, SCI 3000 or equivalent		3 or 4
SS 2810	Social Problems	3
Elective	(Approved or Criminal Justice)	3

total: 16 or 17

Semester VII

CJ 3620	Forensic Science & Criminalistics	3
CJ 4120	Death Investigation	3
Elective	(Approved or Criminal Justice)	3
Elective	(Humanities)	3
Elective	(Psychology)	3

total: 15

Semester VIII

CJ 4220	Criminal Profiling	3
CJ 4320	Fundamentals of Crime Analysis	3
Elective	(Approved or Criminal Justice)	3
Elective	(Humanities - 3 credits must be literature)	3
Elective	(Psychology)	3

total: 15

total credits required: 124 or 125

**Required for all students who plan on completing an internship*

Criminal Justice/Bachelor of Science Rehabilitative Services Specialty

The rehabilitative services specialty is designed to meet the needs of individuals who wish to work in the field of juvenile and adult probation, parole and aftercare services. This is a growing field in which care is focused on assessing and rehabilitating individuals who have been convicted of a criminal offense or are at risk.

The curriculum consists of classes that provide hands-on training in risk assessment, needs assessment, counseling, group therapy and applied probation and parole services. Theory and application in the areas of probation, parole and aftercare services are covered. Students have exposure to aftercare services such as restorative justice, forensic psychology and corrections counseling.

Graduates of the rehabilitative services program will be qualified to become employed in juvenile or adult rehabilitative services. They will have the skills to assess, monitor and treat individuals who need help and assistance with their rehabilitation. There are a number of public and private agencies that provide services to the legal community.

Semester I

BA 1200	Foundations of Business	3
CJ 1100	Introduction to the Criminal Justice System	3
ENG 1250	English Composition I	3
IIT 1000	University Experience	1
MA 1000	Introduction to College Mathematics	3
MIS 1300	Software Tools	3

total: 16

Semester II

CJ 1200	Criminology	3
CJ 1300	The Police in America	3
CJ 1400	Corrections in America	3
ENG 1270	English Composition II	3
IIT 1270	Introduction to Critical Inquiry	3
*IIT 2000	Pre-internship Seminar	0

total: 15

Semester III

CJ 2000	Homeland Security	3
CJ 2300	Substantive Criminal Law	3
CJ 2400	Understanding Procedural Law	3
MA 1025	Mathematical Problem Solving	3
PSY 1700	Introduction to Psychology	3

total: 15

Semester IV

CJ 2600	Laws of Evidence	3
CJ 3300	Victimology	3
CJ 3400	Ethics & Cultural Diversity in Criminal Justice	3
CJ Special Topic	General Studies Only	1
HUM 2000	Introduction to Humanities	3
MA 2025	Statistical Problem Solving	3

total: 16

Semester V

CJ 2500	Basics of Criminal Investigation	3
CJ 3100	A System of Juvenile Justice	3
CJ 3200	Understanding Criminal Behavior	3
CJ Special Topic	General Studies Only	1
PSY 3760	Abnormal Psychology	3
SS 2800	Introduction to Sociology	3

total: 16

Semester VI

CJ 3530	Restorative Justice	3
CJ Special Topic	General Studies Only	1
ENG 2320	Professional Communication	3
PH 1000, BIO 1110, CHEM 1000, SCI 3000 or equivalent		3 or 4
PSY 3740	Counseling Techniques	3
SS 2810	Social Problems	3

total: 16 or 17

Semester VII

CJ 4130	Probation & Parole Services	3
Elective	Approved or Criminal Justice	3
Elective	(Approved or Criminal Justice)	3
Elective	(Humanities - 3 credits must be literature)	3
Elective	(Psychology)	3

total: 15

Semester VIII

CJ 4230	Corrections Counseling	3
PSY 3770	Assessment in Psychology	3
Elective	(Approved or Criminal Justice)	3
Elective	(Humanities)	3
Elective	(Psychology)	3

total: 15

total credits required: 124 or 125

**Required for all students who plan on completing an internship*

Center for Criminal Sciences

Criminal Justice/Associate of Science

A growing number of law enforcement agencies require some college education for new officers, and Indiana Tech's associate degree will fulfill that entry-level requirement. The associate degree program includes eight core courses which examine the criminal justice system as a whole. Subsequent courses take a closer look at individual components of the criminal justice system, such as the police force, the courts and the corrections system.

The program gives students a general understanding of the criminal justice system that will enable them to excel in a variety of agencies, such as police forces at the local and state level. If you're looking for a springboard for further learning in other university majors or a police academy, the associates degree is a great choice.

Semester I

BA 1200	Foundations of Business	3
CJ 1100	Introduction to the Criminal Justice System	3
ENG 1250	English Composition I	3
IIT 1000	University Experience	1
MA 1000	Introduction to College Mathematics	3
MIS 1300	Software Tools	3

total: 16

Semester II

CJ 1300	Police in America	3
CJ 1400	Corrections in America	3
ENG 1270	English Composition II	3
*IIT 2000	Pre-internship Seminar	0
MA 1025	Mathematical Problem Solving	3
ITT 1270	Introduction to Critical Inquiry	3

total: 15

Semester III

CJ 2300	Substantive Criminal Law	3
CJ 2400	Understanding Procedural Law	3
CJ 2500	Criminal Investigation	3
CJ 2000	Homeland Security	3
PSY 1700	Introduction to Psychology	3

total: 15

Semester IV

CJ 3100	A System of Juvenile Justice	3
CJ 3200	Understanding Criminal Behavior	3
CJ 3700	Ethics & Cultural Diversity in Criminal Justice	3
ENG 2320	Professional Communication	3
PSY 3760	Abnormal Psychology	3
SS 2800	Introduction to Sociology	3

total: 18

total credits required: 64

**Required for all students who plan on completing an internship*


INDIANA TECH

ADDITIONAL UNDERGRADUATE PROGRAMS

Contents

Exploratory Track

This program is a stepping stone for students who are committed to a quality college education but unsure of their life-plan after graduation. The exploratory track allows students to complete general courses and to explore the variety of educational options open to them. Professors and advisors work with exploratory students to help them discover their strengths and areas of interest. When students declare a major their coursework is then transferred into a baccalaureate degree program. Students may remain in this track for two semesters or 30 credits (not including developmental courses).

Semester I

ENG 1250	English Composition I	3
PSY 1700	Introduction to Psychology	3
Math	(TBD by exam)	3
IIT 1000	University Experience	1
Electives	(Approved)	6
		total: 16

Semester II

ENG 1270	English Composition II	3
SS 2800	Sociology	3
MIS 1300	Software Tools	3
Electives	(Approved)	6
		total: 15

Individually Designed Degree Program

The individually designed degree (IDD) provides students with the option of designing their own degree and naming it. This approach to degrees has two distinct advantages. The first is that because there are many flavors of a technology or a business degree, students' goals may not align with our defined offerings. This program is intended for students who have clear degree goals and desire to customize a program that will meet these goals. Their IDD may be inter-institutional as well as interdisciplinary.

The second advantage addresses the issue that many students do not know what degree they want to pursue in college. Having started in one direction, they often lose credit in switching to a new major. With an IDD it may be possible to change directions and lose little or no credit.

Implementation

The student and his or her adviser, with input from the primary academic department(s) involved, will develop a degree proposal based on the following guidelines:

- The degree will be based on a carefully thought out rationale that results in a cohesive program of study
- A name will be chosen for the degree that does not duplicate an existing program at Tech nor is misleading in any manner
- The degree must contain a minimum of 120 credit hours for the bachelor's degree
- The degree must meet the current core requirements
- The proposal must designate two areas of depth by including a minimum 7-course sequence in each area. If an internship is to be part of the program, the student may request from the Curriculum Committee that a portion of the credit hours earned through the internship be applied to one of the 7-course sequences
- The proposal must contain, as a requirement, a 3 to 6 credit hour capstone project that integrates the two areas of depth

To assure compliance with the guidelines and general academic integrity, the plan, its rationale, and its name will be submitted to the Curriculum Committee for approval.

Minors

To encourage students to explore a focused program of study outside their major or general education, a number of college minors are available for students pursuing a bachelor's degree. These minors add breadth to a student's academic preparation, and may be beneficial in broadening career opportunities. Depending upon the major that a student is pursuing, he or she may be able to earn a minor without adding to the credits required for the bachelor's degree. All minors require a total of eight specified courses. Students who desire to earn both a major and a minor should plan their program of study carefully and consult regularly with their academic advisor in order to insure that all requirements are met.

Minors (continued)

Accounting Minor

ACC 1010	Principles of Accounting	3
ACC 2140	Managerial Accounting	3
ACC 2200	Intermediate Accounting I	3
ACC 2400	Cost Accounting	3
ACC 2240	Intermediate Accounting II	3
BA 2010	Principles of Management	3
BA 2850	Managing in the Legal Environment	3
MA 1025	Mathematical Problem-Solving	3

total: 24

Athletic Training Minor

BIO 1110	Anatomy & Physiology	3
LHS 2100	First Aid in Fitness Settings	3
LHS 2110	Principles of Fitness & Nutrition	3
LHS 2120	Care & Prevention of Athletic Injuries	3
LHS 3100	Introduction to Physiology of Exercise	3
LHS 3300	Therapeutic Modalities in Athletic Training	3
LHS 4300	Biomechanics of Physical Activity	3
LHS 4350	Athletic Training Practicum	3

total: 24

Business Administration Minor

ACC 1010	Principles of Accounting	3
BA 2010	Principles of Management	3
BA 2410	Human Resources Management	3
BA 2500	Marketing	3
BA 2850	Managing in the Legal Environment	3
BA 4010	Quality Management	3
2 BA Electives (above 3000 level)		6

total: 24

Coaching Minor

BIO 1110	Anatomy & Physiology	3
LHS 2100	First Aid in Fitness Settings	3
LHS 2110	Principles of Fitness & Nutrition	3
LHS 2120	Care & Prevention of Athletic Injuries	3
LHS 3100	Introduction to Physiology of Exercise	3
LHS 3200	Strength & Weight Training	3
LHS 3210	Principles & Philosophies of Coaching	3
LHS 4200	Coaching Practicum	3

total: 24

Computer Science Minor

CS 1200	Introduction to Computer Science	3
CS 1300	Computer Science I	3
CS 1350	Computer Science II	3
CS 3700	Object Orientation	3
CS 3800	Data Structures & Algorithms	3
CS 4600	Organization of Programming Languages	3
CS 4800	System Software	3
CS 2500	Database Systems	3

total: 24

Dance Minor

LHS 1100	Introduction to Dance	3
LHS 2500	Dance History	3
LHS 2510	Modern Dance Technique I	3
LHS 2520	Ballet	3
LHS 3500	Modern Dance Technique II	3
LHS 3510	Improvisation	3
LHS 4500	Principles of Choreography	3
LHS 4510	Dance Pedagogy	3

total: 24

E-Commerce Minor

CS 1250	Problem Solving for Programmers	3
IS 1150	Principles of Information Systems	3
IS 1300	Programming I	4
IS 2100	Internet Fundamentals	3
IS 2200	Developing Business Solutions	3
IS 2300	Programming II	3
IS 4700	IS Senior Project	3

total: 25

Energy Engineering Minor

CH 1000	Fundamentals of Chemistry	3
PH 1100	Fundamentals of Physics	3
PH 2100	Fundamentals of Physics II	3
	or	
CH 1220	General Chemistry & Lab I	3
PH 1300	General Physics I	3
PH 2300	General Physics II	3
	and	
ENE 2100	Introduction to Energy Engineering Project	1
ENE 3010	Energy Engineering Project I	3
ENE 3020	Energy Engineering Project II	3
And any three of the following courses:		3
ENE 3140	Wind & Solar Power for Electric Grid	
ENE 3150	Energy Storage in Fuel Cells and Batteries	
ENE 3160	HVAC and Geothermal Systems	
ENE 3200	Ethanol and Biofuels Production	

total: 25

Humanities Minor

HUM 2000	Introduction to Humanities	3
At least one of the following philosophy courses:		3
HUM 2730	Introduction to Philosophy	
HUM 3100	Topics in Philosophy: The Good Life	
HUM 3710	Ethics	
HUM 3720	Advanced Critical Thinking	
HUM 3200	Philosophy of Technology	
At least one of the following literature courses:		3
HUM3310	Interpretation of Fiction	
HUM3320	Major British Writers	
HUM3330	American Writers	
HUM 3350	Great Books of the Western World	

HUM 3360 African American Literature
And any other 5 humanity courses (including 2990s) 15

total: 24

Industrial and Manufacturing Engineering Minor

EGR 2650 Manufacturing Processes 3
IME 2010 Safety Engineering 3
IME 2020 Work Design 3
IME 2110 Quality Control I 3
IME 3020 Computer Simulated Manufacturing Process I 3
IME 3040 Computer Integrated Manufacturing Systems 4
IME 4020 Lean Manufacturing 3
IME 4200 Environmental Engineering 3

total: 25

Information Security Minor

NET 1200 Network Design 4
NET 1250 Network Design II 4
IS 3100 Information Security 3
IS 3200 Computer Forensics 3
NET 3300 Network Security 3
IS 4600 Disaster Recovery 3

Choose one of the following sequences:

CS 1250 Problem Solving 3
IS 1300 Programming I 4
IS 2300 Programming II 3
or
CS 1200 Introduction to Computer Science 3
CS 1300 Computer Science I 3
CS 1350 Computer Science II 3
or
CS 1250 Problem Solving 3
NET 2300 Script Programming 3

total: 29 or 30

Information Systems Minor

IS 1150 Principles of Information Systems 3
IS 1300 Programming I 4
IS 2100 Internet Fundamentals 3
IS 2200 Developing Business Solutions 3
IS 2300 Programming II 3
IS 4100 System Analysis & Design 3
CS 1250 Problem Solving for Programmers 3
CS 2500 Database Systems 3

total: 25

Mathematics Minor

Choose one of the following sequences:

MA1200 Calculus I 4
MA 1210 Calculus II 4
MA 2100 Differential Equations & Linear Algebra 4
MA 2430 Probability & Statistics for Engineers 3
or
MA 1300 Calculus w/ Numerical Method I 4
MA 1310 Calculus w/ Numerical Method II 4
MA 2300 Differential Equations 3
EGR 3410 Statistical Quality Analysis I 3
EGR 3420 Statistical Quality Analysis II 3

In addition, students must complete the following:

MA 2200 Calculus III 4
MA 3150 Linear Algebra 3
CS 3500 Numerical Methods I 3
or
One of the following: 3
CS 2410 Discrete Structures
MA 3200 Graph Theory
and
One of the following: 3
MA 4100 Complex Variables
MA 4300 Modern Algebra

total: 21 to 27

Networking Minor

NET 1200 Network Design I 4
NET 1250 Network Design II 4
NET 2000 Windows Networking 3
NET 2500 Linux Networking 3
NET 2900 Network Design & Administration 3

Choose one of the following sequences:

CS 1250 Problem Solving for Programmers 3
IS 1300 Programming I 4
IS 2100 Internet Fundamentals 3
or
CS 1200 Introduction to Computer Science 3
CS 1300 Computer Science I 3
CS 1350 Computer Science II 3

total: 2 or 24

Personal Fitness Coaching Minor

BIO 1110 Anatomy & Physiology 3
LHS 2100 First Aid in Fitness Settings 3
LHS 2120 Care and Prevention of Athletic Injuries 3
LHS 3100 Introduction to Physiology of Exercise 3
LHS 3400 Methods of Fitness Exercise Instruction 3
LHS 3410 Fitness Testing & Interpretation 3
LHS 4400 Certification Seminar 3
LHS 4450 Personal Fitness Trainer Practicum 3

total: 24

Psychology Minor

PSY 1700 Introduction to Psychology 3
PSY 2000 Understanding Diversity 3
PSY 2760 Theories of Personality 3
PSY 2780 Social Psychology 3
PSY 3740 Counseling Techniques 3
PSY 3760 Abnormal Psychology 3
PSY 3770 Assessment in Psychology 3
MA 1025 Mathematical Problem-Solving 3

total: 24

Web Design Minor

IS 1200 Digital Imaging 3
IS 1300 Programming I 4
IS 1400 Visual Communication 3
IS 2100 Internet Fundamentals 3
IS 2600 Web Site Design 3
IS 2900 Web Applications 3
IS 3000 Cascading Style Sheets 3
CS 2500 Database Systems 3

total: 25

COLLEGE of PROFESSIONAL STUDIES

Graduate Degree Programs

About the College of Professional Studies

The College of Professional Studies offers professionally oriented degree programs for students who cannot attend college full time in a traditional format. Programs offered at the undergraduate level are fundamentally the same as those offered in the traditional program, and the curriculum requirements are detailed on previous pages within the university's other three colleges. The structure of the programs, however, requires motivated students to complete the work in the time allowed. In the Accelerated Degree Program, an entire semester of undergraduate material is covered in five weeks, with some quantitative courses requiring 10 weeks.

Indiana Tech's graduate programs are available through the accelerated degree program in the College of Professional Studies. A full semester of graduate level material is covered in six weeks, with some quantitative courses requiring 12 weeks.

Indiana Tech master's degree programs are designed for the working professional in need of advanced education in management. The university offers several concentrations within the Master of Business Administration (MBA) program, as well as a Master of Science in Management (MSM), a Master of Science in Engineering Management (MSE), and a Master of Science in Organizational Leadership (MSOL). All of the master's degree programs include a range of coursework designed to give a wide base of knowledge for success as an executive.

The Ph.D. in Global Leadership is designed to prepare scholar leaders for leadership roles in complex organizations in for-profit and not-for-profit sectors and higher education. The promgram includes three components: a research core, a global leadership core, and an area of specialization. Doctoral candidates may choose to specialize in either organizational management or academic administration.

Contents

College of Professional Studies
Master of Business Administration

The MBA focuses on examining an organization from a functional strategic approach. This approach includes emphasis on management, marketing, finance, accounting, and economic principles in both the domestic and international marketplaces. MBA students can become immersed in a concentration that best fits their goals. Concentrations are offered in accounting, human resources, management, and marketing.

The following courses are required for students in the human resources, marketing, and management concentrations.

Core Courses

MBA 5000	Executive Management (first course)	3
MBA 5130	Managerial Accounting	3
MBA 5210	Business Statistics	3
MBA 5220	Marketing Management	3

Also Required

MBA 5110	Management Information Systems	3
MBA 5120	Managerial Economics	3
MBA 5200	Financial Management	3
MBA 5310	Business Ethics	3
MBA 5330	Business Law	3
MBA 7000	Business Policy & Strategy	3

Concentration Courses 6

Electives 6

total credits required: 42

Elective courses are any graduate-level business courses offered by the university or accepted as transfer credit. Below are the courses required for the human resources, management, and marketing concentrations. Students may have dual concentrations; however, they must complete the required courses for each concentration.

Accounting Concentration

Information on page 81.

Human Resources Concentration

MBA 5600	Human Resource Management	3
MBA 6200	Performance Management	3

Health Care Management Concentration

Information on page 81.

Management Concentration

MBA 5300	Organizational Behavior	3
MBA 5340	Operations Management	3

Marketing Concentration

MBA 6420	Marketing Research	3
MBA 6400	International Marketing	3

Master of Business Administration, Accounting (MBA)

Core Courses

MBA 5000	Executive Management (first course)	3
MBA 5210	Business Statistics	3
MBA 5220	Marketing Management	3

Also Required

MBA 5110	Management Information Systems	3
MBA 5120	Managerial Economics	3
MBA 5200	Financial Management	3
MBA 5310	Business Ethics	3
MBA 5330	Business Law	3
MBA 7000	Business Policy & Strategy	3

Accounting Concentration Courses

MBA 6800	Accounting Automation	3
MBA 6810	Communications for Accountants	3
MBA 6820	Forensic Accounting	3
MBA 6860	Becker Review	6

total credits required: 42

Master of Business Administration, Health Care Management (MBA)

The requirements for the health care management concentration are listed below. This concentration is only available online.

Core Courses

MBA 5000	Executive Management (first course)	3
MBA 5130	Managerial Accounting	3
MBA 5210	Business Statistics	3
MBA 5220	Marketing Management	3

Also Required

HCM 5300	Health Care Law	3
MBA 5110	Management Information Systems	3
MBA 5120	Managerial Economics	3
MBA 5200	Financial Management	3
MBA 5310	Business Ethics	3
MBA 7000	Business Policy & Strategy	3

Concentration Courses

HCM 5000	Introduction to Health Care Management	3
HCM 6200	Health Care Operations & Quality	3
HCM 6300	Health Care Policy & Ethics	3
HCM 6400	Health Care Finance	3

total credits required: 42

Master of Science in Management (MSM)

The Master of Science in Management develops expertise in using qualitative tools in decision-making and problem-solving. Graduates of the program are equipped with knowledge of leadership processes; total quality and change management; work motivation, empowerment, and organizational culture; financial decision-making; and general management practices.

Core Courses

MBA 5000	Executive Management	3
MSM 5100	Qualitative Decision Making	3
MSM 5125	Accounting & Finance for Managers	3

Also Required

MBA 5300	Organizational Behavior	3
MBA 5310	Business Ethics	3
MBA 5320	Quality Management	3
MBA 5600	Human Resource Management	3
MBA 6600	Employment Law	3
MSM 5350	Customer Relationship Management	3
MSM 5400	Negotiation Skills	3
MSM 6400	Managing Change	3
MSM 7200	Applied Management Project	3
*Electives		6

total credits required: 42

MBA/MSM Dual Degree

The dual MBA/MSM degree program is designed for the individual who wants competency in both the leadership skills obtained within the MSM curriculum along with the solid business analysis and quantitative skills offered within the MBA program.

Core Courses

MBA 5000	Executive Management	3
MBA 5130	Managerial Accounting	3
MBA 5210	Business Statistics	3
MBA 5220	Marketing Management	3

Also Required

MBA 5110	Management Information Systems	3
MBA 5120	Managerial Economics	3
MBA 5200	Financial Management	3
MBA 5300	Organizational Behavior	3
MBA 5320	Quality Management	3
MBA 5340	Operations Management	3
MBA 5350	Customer Relationship Management	3
MBA 5600	Human Resource Management	3
Choose one of the following two courses:		3
MBA 5330	Business Law	
MBA 6600	Employment Law	
MBA 7000	Business Policy & Strategy	3
MSM 5100	Qualitative Decision Making	3
MBA 5310	Business Ethics	3
MSM 5400	Negotiation Skills	3
MSM 6400	Managing Change	3
Electives		6

total credits required: 60

**Elective courses are any graduate-level business courses offered by the university or accepted as transfer credit.*

Master of Science in Engineering Management (MSE)

The Master of Science in Engineering Management is designed for professionals with a technical background who are preparing to assume more managerial responsibilities, or who are broadening their knowledge base. Topics such as quality assurance, lean manufacturing, and enterprise resource planning are complemented with the study of financial management, project management, managerial economics, and more. This integration creates an educational experience which can be thought of as an MBA with a technical focus.

MSE Courses

MSE 5000	Introduction to Engineering Management (first course)	3
MSE 6010	Environmental Health & Safety	3
MSE 6020	Designing for Lean Manufacturing	3
MSE 6030	Enterprise Resource Planning	3
MSE 6040	Computer Integrated Manufacturing	3
MSE 6050	Statistical Methods in Quality Assurance	3
MSE 6060	Legal Implications for the Engineering Manager	3
MSE 7000	Advanced Topics in Engineering Management (last course)	3

MBA Courses

MBA 5110	Management Information Systems	3
MBA 5120	Managerial Economics	3
MBA 5130	Managerial Accounting	3
MBA 5200	Financial Management	3
MBA 5220	Marketing Management	3
MBA 6310	Project Management	3

total credits required : 42

Master of Science in Organizational Leadership (MSOL)

The Master of Science in Organizational Leadership gives you exposure to leadership theory and current best practices. After you complete the program, you will have working knowledge of visionary leadership skills to support global service.

Personal Leadership

MSOL 5000	Leadership Styles & Leadership Development	3
MSOL 5200	Executive Communication	3
MBA 5310	Business Ethics	3
MSOL 5300	Research Methods	3

Negotiation and Influence

MSOL 6300	Team Building	3
MSOL 5500	Financial Concepts for Leaders	3
MSM 6400	Managing Change	3
MSM 5400	Negotiation Skills	3

Organizational Leadership

MBA 5110	Management Information Systems	3
MSOL 6500	Global Leadership Perspectives	3
MBA 6200	Performance Management	3
MSOL 7300	Leadership Project	3

total credits required: 36

College of Professional Studies

Master of Science in Police Administration (MPA)

The master's degree program provides professionals in police administration the chance to further understand and develop expertise in the study of administration and leadership. Students develop expertise through coursework that stresses the application of theory, applicable research methods, and problem-solving activities relevant to modern day police administration and leadership. The final capstone project offers students the opportunity to apply what they have learned in their coursework to real-life administration and leadership issues.

Core Courses

MPA 5000	Criminological Theory	3
MPA 5100	Criminal Justice Statistics	3
MPA 5200	Criminal Justice Research Methods	3

Concentration Courses

MPA 6100	Principles of Leadership	3
MPA 6200	Ethics of Supervision	3
MPA 6300	Police Organizational Behavior	3
MPA 6400	Police Management	3
MPA 6500	Police Administration	3
MPA 6600	Budgeting and Resource Management	3
MPA 6700	Legal Issues in Supervision	3
MPA 7000	Capstone Requirement	3

total credits required: 36

College of Professional Studies
Ph.D. in Global Leadership

The purpose of the Ph.D. in Global Leadership is to prepare scholar leaders for leadership roles in complex organizations in for-profit and not-for-profit sectors and higher education. These scholar leaders will understand their responsibilities and their roles as leaders in conserving, expanding, and transforming these organizations and in advancing the discipline of leadership and practice in the global society.

For the Ph.D. program, global leadership encompasses understanding the global environment with its complexity; situational and environmental challenges and opportunities; the interaction between environment, culture, social, political and economic trends; the organizational environment in its totality; and leading with a global mindset in the 21st century.

Professional Development Needs in the Public and Private Sectors

Students entering into this course of study do so to meet several different professional needs:

- Advanced training and skills in research, organizational leadership or academic leadership culminating in the terminal degree. The skills provide the foundation for discovering new knowledge in leadership fields and to apply that knowledge to the corporate, non-profit organizations or higher education.
- A terminal degree to gain advancement or change in careers.
- A terminal degree to further develop an executive leadership role in for-profit, non-profit, public, private, corporate or professional organizations.
-

Program Outcomes

Students will demonstrate the ability to:

- Critically analyze theoretical and empirical literature and practices required by leaders in the 21st century global environment to advance organizational success and foster organizational growth.
- Search, interpret, and analyze information from internal and external sources to evaluate organizational effectiveness, and both recommend and employ leadership strategies to promote organizational change.
- Demonstrate responsibility, accountability, ethical consciousness, and adherence to legal, professional and educational standards of global leadership.
- Design research using appropriate methodology, conduct scholarly research that contributes to the body of knowledge in the discipline of global leadership studies, and apply research results from related fields to the discipline of global leadership studies and practice.
- Demonstrate understanding of the complexities associated with leadership in a global environment, the conditions under which it occurs, and approaches to leading in those in diverse settings.

I. Research Core (15 Credits minimum)

RES 7001	Research Process & Critique	3
RES 7002	Scholarly Inquiry & Technical Writing	3
RES 7003	Critical Analysis of Literature	3
RES 7004	Quantitative & Qualitative Methods of Research	3
RES 7005	Advanced Statistical Analysis (Prerequisite RES 7004)	3
RES 7999	Continuous Development of Qualifying Paper	0-6

If coursework has been completed, and additional time is needed for the QP (1 credit taken as permitted, up to a maximum of 6 credits)

II. Global Leadership Core (21 Credits)

LDS 7001	Leadership Theory & Research	3
LDS 7002	Leading in a Time of Change	3
LDS 7003	Communications in Global & Diverse Contexts	3
LDS 7004	Ethics, Governance & Social Responsibility	3
LDS 7005	Global Leadership Development	3
LDS 7006	Developing Human Capital	3
LDS 7007	Global Strategic Leadership	3

III. Specialization: Select one (18 Credits)

Organizational Management

OLM 7001	Organizational Behavior & Culture	3
OLM 7002	Marketing Theory & Research	3
OLM 7003	Service Science Management & Development	3
OLM 7004	Managing Innovation & the Learning Organization	3
OLM 7005	Managing for Financial Performance & Accountability	3
OLM 7006	Strategic Development of Multinational Organizations	3

Academic Administration

HEA 7001	Theories and Research in Academic Administration	3
HEA 7002	Higher Education Policy & Accountability	3
HEA 7003	Legal Issues and Responsibilities in Higher Education	3
HEA 7004	Managing Financial Performance & Accountability	3
HEA 7005	Comparative Higher Education	3
HEA 7006	The Contemporary College Student	3

IV. Dissertation 6 Credits (minimum)

*RES 8001	Dissertation Research Seminar & Prospectus	3
RES 8002	Dissertation Proposal Development, Defense, & IRB Application (1 credit minimum, up to a maximum of 6 credits)	1-6
RES 8003	Dissertation Implementation (1 credit minimum, up to a maximum of 6 credits)	1-6
RES 8004	Defense & Completion of the Dissertation	1

*Requires successful completion of all required core and specialization course work, the additional degree program requirements, residency and continuous enrollment, progression requirements, the qualifying paper and recommendation to doctoral candidacy.

Masters Programs

Admission Requirements

The graduate program is designed to serve the working professional adult student. The assumption of the university is that by working for a period of time prior to the pursuit of a graduate degree, the student has attained considerable knowledge, maturity, and discipline that is not common in younger students. These characteristics are essential for successful completion of the degree program; hence, they are incorporated into the admissions requirements. The admissions guidelines for the graduate school are as follows:

- Baccalaureate degree from a regionally accredited institution
- Minimum undergraduate GPA of 2.5
- Two (2) years of significant work experience
- Completion of the Graduate Division Application Package (e.g., application form, recommendations, etc.)
- If the applicant does not meet the minimum work experience, the following criteria can be substituted:
  Minimum undergraduate GPA of 2.5 plus 200 times undergraduate GPA plus GMAT score must equal or exceed 1000 total points.

Additional MBA Admissions Requirements

Additionally, all MBA students must have completed the following courses with a grade of C or better:

- Principles of Management
- Principles of Marketing
- Accounting Principles
- Corporate Finance

Students who do not meet the prerequisites should contact their admissions representative to discuss the available alternatives. The admissions committee makes all admissions decisions. If the committee finds any deficiencies for admission, the committee, along with the graduate dean, will determine how the student may correct the deficiencies.

MBA Accounting Admissions Requirements

The following are requirements for an individual to be accepted into the MBA accounting concentration:

- Student must have obtained a baccalaureate degree
- Student must have completed at least 24 undergraduate credit hours in accounting.
- Student must have completed at least 24 credit hours in business administration and economics courses, other than accounting. These courses can be at the undergraduate and/or graduate level.
- The business courses may include up to 6 hours of business and tax law courses and up to 6 hours of computer science.
- The accounting hours must include courses covering financial accounting, auditing, taxation, and managerial accounting.
- The Indiana Board of Accountancy may change CPA requirements at any time. Contact your graduate advisor with any questions.

MSE Admissions Requirements

To be admitted to the Master of Science in Engineering Management program, students must meet the following admission requirements:

- The student must have obtained a bachelor of science in a technical field
- The student must have a minimum cumulative undergraduate GPA of 2.5
- The student must have completed at least one undergraduate accounting course and one finance course

MSM Admissions Requirements

All MSM students must have completed Principles of Management with a grade of C or better.

MSOL Admissions Requirements

To be admitted to the Master of Science in Organizational Leadership, students must meet the following requirements:

- Minimum of three years work experience with an increasing level of supervisory responsibilities.
- A bachelor's degree (in any field) from an accredited institution, with a cumulative grade point average of 2.50 or better.
- Three letters of recommendation.
- A brief essay expressing your reasons for applying and expectations for the program.
- A current résumé.

Graduate Transfer Credit

Students who have attended graduate classes at another college or university may transfer credit under the following guidelines:

- Courses must be business-related with grades of B or better.
- The number of credits to be transferred cannot exceed nine (9) credit hours.
- An official transcript must be received by Indiana Tech
- The institution at which the credit was earned must be regionally accredited.
- The prospective student must submit a course description and, if possible, a course syllabus.

Graduation Requirements

To qualify for graduation from Indiana Tech, you must complete:

- all necessary credit hours required for the degree.
- required coursework in all graduate classes at a minimum cumulative grade point average of 3.0 with no more than nine (9) credit hours of C work counting toward the degree.
- required coursework within seven (7) years after completing your first graduate class.
- a petition for graduation when within 15 credits of completing courses.
- all financial obligations to the university.

Computer Requirement

Students will be required to have access to a personal computer outside of the classroom for homework assignments. It is recommended that this computer be a Windows-based platform with Microsoft Office software.

Graduate Grading System

The university uses the letter grades A, B, C and F in the graduate program. The use of +/- grades is optional.

A = Excellent, highest possible grade
B = Good performance
C = Unsatisfactory but passing
F = Failure

Incompletes

The grade of I may be given when students, through no fault of their own, are unable to complete the requirements of the course by the end of the session. The I grade must be approved by the department chair. To receive credit for the course, students must complete the requirements within a designated time period of up to 40 days from the end of the session in which they are enrolled. Students who interrupt continuous enrollment must remove the I within one calendar year of filing of the I.

Withdrawals

No grade will be recorded on transcripts for any approved voluntary course withdrawal during the first week. Withdrawals with record (W) will be allowed until the end of the third week of class. After the third week, students may not withdraw from a class.

Coursework must reach a certain standard of excellence. This standard is measured by a system that assigns a point value to each grade. The number of credit points is the product of the credit hours multiplied by the point values. Grades and point values are as follows:

A	**= 4 credit points**	**B-**	**= 2.67 credit points**
A -	**= 3.67 credit points**	**C+**	**= 2.33 credit points**
B +	**= 3.33 credit points**	**C**	**= 2 credit points**
B	**= 3 credit points**	**F**	**= 0 credit points**

No credit points shall be allowed for the grades of F, W, or I. In computing the grade point average, all university level courses completed by the student and all university level courses with F marks shall be included in the total hours (excluding transfer credit). Grade point averages for a semester shall be computed by dividing the sum of the credit points earned by the total hours. (Credit for courses for which a mark of W or I has been received is not included.)

Ph.D. Program

Admissions Requirements

Admissions decisions for the Ph.D. in Global Leadership will be based on:

- Completion of the Indiana Tech doctoral division application.
- Official transcripts of all previous undergraduate and graduate work including evidence of completion of a master's degree at a regionally accredited institution.
- Scores on one of the following admissions tests: GMAT, LSAT, GRE, MAT (Others may be considered at the request of the student to the program director.)
- An original essay addressing the candidate's interest in the program and intended goals.
- A current resume including educational record, employment history and relevant accomplishments, publications, presentations, and professional contributions.
- A scheduled interview upon receipt of all the above materials.

Transfer Credits

Credit hours may be transferred into the Ph.D. program in accordance with the following criteria:

- A maximum of six graduate credit hours may be transferred from coursework applied to a completed master's degree.
- A maximum of 12 graduate credit hours from a fully accredited graduate school may be transferred into the Ph.D. program (maximum of six of which were applied to a completed master's degree). Transfer credit will be awarded only for courses evaluated and found to be comparable in content to those which are part of the course of study.

Procedure for requesting transfer credit:

Requests for transfer credit should be directed in writing to the Ph.D. program director no later than during the first term of doctoral study. The requests must include: official transcript showing the course(s) for which transfer credit is requested and course description from the catalog or syllabus of the course.

Degree completion requirements

Successful completion of the Ph.D. in Global Leadership includes:

- Meet the prerequisite for statistics competency (RES 6000 or equivalent).
- Complete a minimum of 60 doctoral credit hours of coursework including 15 credit hours of research core, 21 credit hours of global leadership core, 18 credit hours of specialization, and a minimum of 6 credits of dissertation.
- Maintain a cumulative GPA of 3.25 and a grade of C or higher in all coursework for the degree. Grades of C must be repeated. No more than two courses may be repeated and no course may be repeated more than once. Exceptions may be considered and must be requested by submitting a petition to the program director.
- Complete the residency requirement.
- Maintain continuous program enrollment of at least one course per semester. Students are eligible for up to one year leave of absence from study in the degree program.
- Complete the degree within six calendar years from the date of the student's initial course start date. Students may request a one-year extension of this time requirement.
- Prepare an acceptable qualifying paper.
- Prepare and successfully defend (a) the dissertation proposal and (b) the dissertation.
- Meet all financial, academic and other related obligations of Indiana Tech and the Ph.D. program.

FINANCIAL AID

Tuition and Other Charges

A cost sheet is available at all times from either the admissions office, the business office, or the financial aid office. Tuition and fees are subject to change without notice; however, the administration and faculty will attempt to advise students if a change is likely to be made. Tuition and room and board charges are established by the Board of Trustees. Fees and special assessments are set at the discretion of the administration.

Payment Options

Indiana Tech offers two payment options for remitting your portion of the cost of the education. **Traditional:** The traditional method of paying for the college experience is to have the bill paid prior to the beginning of the semester. This means that your payment is due before the first day of class in any given semester. Inter-term and summer school charges are due prior to the session start date. **Payment Plan:** Indiana Tech has an internal payment plan which allows you to split your charges for the year among nine payments. The first payment is due August 10 for the fall semester and payable each month thereafter. The cost for this payment plan is $75 per year. For students beginning in the spring semester, the payment plan is split among five payments with the first payment due December 10 and payable each month thereafter.

All accounts will be charged 1.5% interest per month on the unpaid balance after April 30. No student may receive a transcript or diploma until all financial obligations to the university have been met. The student will be responsible for all costs of collection if the account is turned over to an outside agency.

Refund Schedule

Should a student find it necessary to withdraw completely from the university, a prorated refund of tuition will be granted through the end of the 5th week of attendance. In order to qualify for such a tuition refund, the student must complete official withdrawal forms with the approval of his/her advisor. The registrar's office must be notified in order for the withdrawal to be official. The deadlines for withdrawal and prorated refunds allowed are listed below:

Through Week 2.....75%
Through Week 4 .....50%
Through Week 5.....25%
After Week 5.....No Refund

Tuition adjustments will not be made, nor will tuition be refunded for individual courses dropped after the fifth day of classes. Withdrawal forms must be filed with your advisor promptly; otherwise, the withdrawal will not be considered official. The refund policy does not apply to any student who is dismissed from the university because of misconduct.

Students who are participating in the Title IV programs who find it necessary to withdraw completely from all classes will have their federal aid assessed based on the total actual weeks of completion. The assistance is calculated based on the percentage of time as documented by the withdrawal date provided by the registrar's office. Charges owed to Indiana Tech are calculated based on the above Institutional Refund Policy.

The federal refund policy will be calculated and applied to students who:

1.) Withdraw on or before the 60% point of the enrollment period for which the aid was intended.
2.) Receive Title IV federal student financial assistance for the period indicated in #1.

The refund policy is calculated for all students receiving federal aid. The net refund to Title IV programs will be applied in the following order:

- Federal Direct Unsubsidized Stafford Loan
- Federal Direct Subsidized Loan
- Federal Perkins Loans
- Federal Direct Plus and Plus Graduate Loan
- Federal Pell Grants
- Academic Competitiveness Grant
- National Smart Grant
- Federal SEOG Grant
- Other Title IV Assistance

Dropping/Adding Courses

A student may drop, without fee, or add individual courses in the first five days of a fall or spring term or the first three days of a summer term. The last calendar date to drop or add an individual course is given by the official Schedule of Courses for a given term. No tuition adjustments will be made, nor will tuition be refunded for any individual course dropped after the expiration of the drop/add date.

In order to be officially withdrawn from any course, a student must complete withdrawal which will be approved by his/her advisor. Such withdrawals, however, will not be considered in effect until filed with the Office of the Registrar.

Books

Tuition includes textbook rental. The required textbooks will be distributed at the beginning of each semester. At the close of each semester, the textbooks must be returned to the university bookroom. Textbooks that are not returned will be considered purchased by the student; the student will be billed for the text(s).

INSTITUTIONAL AID & SCHOLARSHIPS

Indiana Tech is fully committed to providing an affordable private education. It is our goal to put within the student's reach the opportunities and advantages gained from the Indiana Tech experience. Approximately 87% of Indiana Tech students receive some form of financial assistance. Through packages composed of various sources of aid such as scholarships, loans, grants, and work-study programs, it is our sincere hope that every qualified student is afforded the opportunity to attend Indiana Tech without regard to cost.

In order to apply for federal, state, and institutional grants or scholarships, students are required to complete a Free Application for Federal Student Aid (FAFSA). Students desiring to complete a FAFSA online can do so at: www.fafsa.ed.gov.

Paper FAFSAs are available. However, Indiana Tech highly recommends that students file their FAFSA's online. Assistance is awarded on a first-come, first-served basis, and priority consideration is given to students whose FAFSAs are received at the Federal Processor by March 10.

Applicants for freshman scholarships should arrange to take the SAT or ACT during the first scheduled testing date in the fall of their senior year. Separate scholarship applications are not required unless one is requested under the scholarship description.

Alumni Association Scholarship

Established by the Indiana Tech Alumni Association Board of Directors, it is awarded to a student in the junior or senior year. The scholarship is awarded on the basis of academic standing (3.0 GPA or above); school, social, and professional activities; outstanding achievements; and financial need. A committee from the Alumni Board of Directors selects candidates. The yearly award is equal to tuition for 12 credits.

Lenore and Bob Armbrust Memorial Scholarship

This scholarship was established by the family of Mrs. Lenore Armbrust to honor her memory. Lenore Armbrust was the executive secretary to the president of the university and a strong supporter of Indiana Tech. One scholarship is awarded annually, with first preference to a female athlete and second preference to a student in financial need. The scholarship is renewable based upon satisfactory progress.

Armed Forces Communication and Electronics Association Scholarship (AFCEA)

The Indiana Chapter located in Fort Wayne established this scholarship. One award annually goes to a student majoring in engineering. The student must demonstrate academic excellence and financial need. The scholarship requires completion of a FAFSA and is available to U.S. citizens only.

Ralph L. Armstrong Scholarship

Vivien Armstrong established this scholarship in memory of her husband, Ralph L. Armstrong. Mr. Armstrong was a 1965 electrical engineering graduate of Indiana Tech and retired after 30 years with Ford Motor Co. – Design Engines. Eligible engineering students must demonstrate financial need. This scholarship is open to all Indiana Tech students and it is renewable based upon satisfactory progress.

Athletic Scholarships

A number of scholarships in men's and women's sports are available to qualified athletes. Amounts vary, and interested individuals should make direct contact with the head coach of the sport.

Indiana Tech Athletic Hall of Fame Scholarship

Established in 2001, this scholarship is to help finance student-athletes. The athletic committee with the approval of the senior management staff will choose the scholarship recipients. The scholarship is open to all majors and will be awarded using the criteria of financial need and academic excellence and is renewable based upon satisfactory progress.

James R. Bard Scholarship

James R. Bard, a 1960 BSME graduate of Indiana Tech, established this scholarship. Upon graduation from Indiana Tech, Mr. Bard joined the family-owned heating and air conditioning manufacturing company, known as Bard Manufacturing Co., which was established in 1914. The recipients must be full-time students at Indiana Tech and must maintain at least a 2.0 GPA. Students must show financial need and demonstrate a desire to succeed. Decision on need and desire will be determined by the director of financial aid. This scholarship shall be open to students studying engineering or business in either the traditional or CPS programs. This scholarship requires that the recipient be a U. S. Citizen.

Albert E. Beckwith Memorial Scholarship

The scholarship was established in memory of Mr. Beckwith, a former member of the Board of Trustees. One award annually goes to a four-year business administration student holding a cumulative grade point average (at Indiana Tech) of 2.5 or better. Students must demonstrate academic excellence and financial need and must be U.S. citizens or permanent residents.

Corporal Jonathan F. Blair Memorial Scholarship

Jonathan F. Blair, 21, died November 19, 2005, near Bayji, Iraq, during combat operations on his second tour of duty in Iraq. He was awarded the Bronze Star, Purple Heart, Army Commenda-

tion Medal, Good Conduct Medal, National Defense Service Medal, Iraqi Campaign Medal, Global War on Terrorism Expeditionary Medal, Global War on Terrorism Service Medal, Army Service Ribbon, Expert Marksmanship for the M-16 Rifle, and the Combat Infantry Medal. This scholarship was established in his memory by his great aunt and uncle, Cathy S. and Ronald M. Kantorak (IIT Alumni - BSME 1970). This scholarship will be used to support full time Indiana Tech Undergraduate Students that are U. S. Citizens and Honorably Discharged Veterans of our Armed Forces and the children of those who died in service to our country.

William Briegel Scholarship

William E. Briegel established this scholarship for an adult student in the College of Professional Studies at Indiana Tech. The student must be either a junior or senior expressing financial need and unable to finish without financial assistance. Should no one fitting that need apply, any adult student showing need is eligible. First preference is for a Fort Wayne adult student. Should no one apply from the adult program then any upper level student from the College of Business would be acceptable.

Steven and Carolyn Brody Scholarship

This scholarship was established by Mr. and Mrs. Brody, who recognize the financial and educational needs of today's student. Mr. Brody served as the Chairman of the Board of Trustees from 1993 to 2008. Recipients of this scholarship must maintain a 2.0 GPA on a 4.0 scale. One semester of probation is permitted. The recipient must demonstrate financial need, as well as a desire to succeed. The award may be given to a student in any academic program who meets the full-time status requirements.

Business Education Fund Scholarship

This scholarship was established by the Fort Wayne Community Foundation. The primary goal of the BEF scholarship is to assist deserving students who do not receive sufficient assistance from grants or other scholarship programs. Eligible candidates must be working toward a bachelor of science in accounting, business administration, or computer information systems and live within a certain distance of Fort Wayne. Selection is made by the director of financial aid. It requires completion of a FAFSA and is available only to U.S. citizens and permanent residents. Funds are made available to Indiana Tech through the Fort Wayne Community Foundation.

Robert W. (Smiley) Cates Memorial Scholarship

Gordon and Paula Cates and Cates Control Systems, Houston, Texas, established this scholarship to honor the memory of their son Robert, a former student at Indiana Tech. Eligible candidates for this scholarship must complete a FAFSA. Recipient must be a U.S. citizen. First preference must be given to a student studying electrical engineering, second preference to a student studying in another engineering discipline, next would be a student in the College of Engineering and Computer Sciences and should there still not be a recipient, then a student in another academic disicpline within the confines of Indiana Tech would qualify. Prime consideration is given to need and a burning desire for the student to succeed. Student must maintain a passing grade ("C" average) to receive or maintain the scholarship. One semester of probation is permitted but if grades are not brought back up, the scholarship would be removed until the student is back in good standing. Then it might be reinstated. Recommendation for the scholarship is given by the director of financial aid with the approval of the senior management group of the college. .

Cole Foundation Scholarship

Established by the Olive B. Cole Foundation, Inc., this scholar-ship is awarded based on financial need and consideration of a student's desire to succeed in his/her degree. It is open to all majors offered by the university. Recipients of this scholarship must be from LaGrange, DeKalb, Noble, or Steuben counties. It is a renewable award based on the student maintaining satisfactory progress and is available to U. S. citizens and permanent residents only.

Joseph W. Cranmer Memorial Scholarship

Mr. C. William Wright established this scholarship. Mr. Wright is a 1963 BSCHE graduate of Indiana Tech. This scholarship was established to honor the memory of Mr. Wright's favorite professor, Joseph W. Cranmer, who also graduated from Indiana Tech with a BSCHE, in 1952. Professor Cranmer served on the Indiana Tech faculty from 1952 to 1969. This scholarship is awarded to a student in the College of Engineering and Computer Sciences who demonstrates financial need. Scholarships are renewable based on continued academic progress and are available to U.S. citizens and permanent residents only.

Joseph P. Cunningham Scholarship

This scholarship was established in memory of Mr. Cunningham, a former member of the Board of Trustees. Awards are given annually to upper-class accounting or business administration majors. Students must maintain a 2.0 cumulative GPA (at Indiana Tech).

Dr. Richard D. Dermer Scholarship

Professor Dermer developed the Research & Development Center at Indiana Tech in 1953 and was the prime inventor of most of the products that went to market. He was known as the "idea man" for Indiana Tech. Winton L. Chance (BSEE '48) and Frank A. Denbrock, P.E. (BSEE '48) respected Dr. Dermer so much that they established this scholarship in honor of him. Friends since their college days, and both accomplished engineers, Chance and Denbrock are happy to contribute to this meaningful scholarship that may inspire the next Einstein or Edison. This scholarship was established to support Indiana Tech electrical engineering students.

Theron J. Dersham Scholarship

This scholarship was established by Theron J. Dersham, a 1972 BSEE graduate of Indiana Tech. The first preference for a candi-

date will be a student enrolled in the College of Engineering and Science. Other disciplines within the university will be considered should an engineering student not be available. The scholarship will initially be awarded to a student during his/her freshman year and is renewable based upon maintaining a satisfactory grade point average.

Joseph D'Italia Engineering Scholarship

Mrs. Carrie Henry established this scholarship to honor her uncle, Joseph D'Italia, president of Harbor Investments. Mr. D'Italia is a 1965 BSCE graduate of Indiana Tech and a former member of the Board of Trustees. Selection of a student is made with first preference to a student majoring in civil engineering, then to any other discipline in engineering, computer science, and to business degree majors. Geographic guidelines stipulate that the student be from Indiana, the Midwest, or other states within a reasonable distance of Indiana and that the student be a U.S. citizen. The student must be in good academic standing and demonstrate some financial need. Selection is made by the director of financial aid, and the scholarship is renewable based upon satisfactory progress.

Dickmann Brothers Engineering Scholarship

John and Norbert Dickmann (brothers) established this scholarship to provide assistance to a student who chooses to attend Indiana Tech. John and Norbert are both BSCHE graduates of Indiana Tech, John in 1945 and Norbert in 1951. Candidates for this scholarship must be enrolled on a full-time basis in the College of Engineering and Computer Sciences, and preference will be given to freshmen. The scholarship is renewable based upon maintaining a minimum of a B grade point average.

Dominique Family Scholarship

Mr. and Mrs. Gene Dominique established this scholarship to honor their daughter, Tamra Sue Dominique, a 1994 BSBA graduate of Indiana Tech. Tamra earned her degree from Indiana Tech while raising four children and is now a successful business owner. Gene Dominique is also a graduate of Indiana Tech, having earned a BSME in 1961. Selection for this award is open to all majors and made available to an individual with the desire to obtain a college degree. The scholarship is renewable based on satisfactory progress. It is open to U. S. citizens or permanent residents.

Sarah A. Douglas Memorial Scholarship

This scholarship was established by the Board of Trustees to honor the memory of Sarah Douglas, a 1999 BSACC graduate. Sarah was the assistant controller and assistant softball coach with Indiana Tech at the time of her death in May 2002. One annual scholarship is awarded based on financial need, with first preference to a student involved with the women's softball program and/or the accounting program. This scholarship honoring Sarah's memory recognizes the many contributions she made on the field, in the classroom, and in the office by being the ultimate student-athlete and valued employee.

Ben Dow Scholarship

This scholarship was established by Mr. Jack McCurley, a 1954 BSAEE Indiana Tech graduate, to honor Professor Ben Dow. First scholarship preference will go to a student enrolled in the College of Engineering and Computer Sciences and second to other disciplines within the university. Prime consideration is given to those students in financial need requiring assistance to obtain their educational goals. To renew the scholarship, a recipient must maintain satisfactory progress and file a FAFSA. Candidates for this scholarship must be citizens of North America or hold permanent resident status.

Simon and Donna Dragan Scholarship

Simon Dragan is a native of Vurpar, Transylvania, Romania. He came to the United States after escaping from Communist Romania in 1969 and held a variety of entry-level positions in the Baltimore area before finding work with Williams-Scotsman, a distributor of modular and mobile buildings. In 1993, Mr. Dragan bought the Williams factory located in South Whitley, Ind., and developed it into the nation's leading manufacturer of modular structures. This scholarship will be awarded with first preference to mechanical engineering majors who maintain a 2.5 grade point average. Financial need will be considered in determining the recipient along with preference given to Romanian or Romanian-American students.

Lawrence and Leota Mae Dranchak Scholarship

Lawrence and Leota Mae Dranchak established this scholarship. Mr. Dranchak is a 1956 BSME graduate of Indiana Tech and is retired from Ford Motor Co. where he was employed as a product development engineer. This scholarship is awarded to a U.S. citizen or permanent resident who has junior status and is majoring in mechanical engineering (second preference goes to other engineering disciplines). Eligible candidates must be in good academic standing and demonstrate financial need. It is renewable based upon satisfactory progress.

Electrical Manufacturing and Coil Winding Association Scholarship

The Electrical Manufacturing and Coil Winding Association, Coronado, Calif., annually sponsors a number of renewable engineering scholarships. Applicants must view an association video that describes career options, become student members of the EMCWA, and submit technical papers at annual trade shows. Recipients are chosen by a panel of three engineering faculty and the director of financial aid. Awards are renewable based upon satisfactory progress.

Essex Scholarship

The Essex Group, Inc. of Fort Wayne, Ind., established this scholarship. It is awarded to engineering or computer science majors who are in the top 25% of their high school graduating class. The director of financial aid will make the selection. It is available to U.S. citizens or permanent residents only.

Robert R. and Celia Featheringham Scholarship

Mr. Featheringham established this scholarship to honor his wife, Celia. Mr. Featheringham was director of business development with Telos Corp. and a 1960 BSEE graduate of Indiana Tech. The scholarship will be awarded to a student majoring in electrical engineering. Other engineering or science disciplines will be considered should an EE candidate not be available. It is renewable upon satisfactory progress and is available to U.S. citizens or permanent residents only.

Charles W. Ferguson Scholarship

This scholarship was established by Mr. Ferguson, a 1951 BSME graduate of Indiana Tech. Mr. Ferguson is now retired. He was employed as a project manager with Busch Entertainment Co./ Anheuser Busch. One scholarship will be awarded annually to an entering freshman majoring in engineering. Other disciplines will be considered should an engineering candidate not be available. The scholarship is renewable based upon satisfactory progress and is available to U.S. citizens or permanent residents only.

Gordon L. and Miriam Ferguson Scholarship

This scholarship was established by Gordon L. Ferguson, a 1958 BSME graduate of Indiana Tech. Scholarship funds will be used to support students enrolled in the College of Engineering and Computer Sciences. Candidates in other majors will be considered if engineering students are not available. Recipients must be in good academic standing.

Clarence L. Forrest Scholarship

Mr. Clarence (Casey) Forrest, a 1943 BSAE Indiana Tech graduate, established this scholarship. Retired from Textron in 1986, Mr. Forrest made numerous contributions in the aircraft and space fields and was inducted into the Niagara Frontier Aviation and Space Hall of Fame in 1997. This scholarship is open to all full-time freshmen who will pursue an undergraduate degree in a technical field. The scholarship is renewable for a maximum of four years and is based on the recipient maintaining a 3.0 cumulative grade point average. Applicants wishing to be considered for this award need to submit a one-page letter stating why they chose to study in a technical field. The award is available only to U.S. citizens.

Joseph J. Foster Scholarship

Mr. Joseph Foster, a 1950 BSAE graduate of Indiana Tech, established this scholarship. The scholarship is awarded first to a student enrolled in the College of Engineering and Computer Sciences and second to other disciplines within the university. Academic achievement is not a major factor; however, recipients must maintain satisfactory progress in order for the scholarship to be renewed. It is available to U.S. citizens.

H. Robert and Lois Gill Scholarship

H. Robert and Lois Gill established this scholarship. Mr. Gill was a 1960 electronics engineering graduate of Indiana Tech. Recipi-

ents of this scholarship must be exceptional students in any field of study at Indiana Tech. While there is no requirement that a student receiving a scholarship out of this fund has demonstrated financial need, a student who has financial needs may be considered. Awards from this scholarship will generally follow the guidelines set forth in the Indiana Tech Scholars Leadership Program, as follows:

Summary

The purpose of the Indiana Tech Scholars Leadership Program is to assist students in pursuing undergraduate education at Indiana Tech. Scholarships will be awarded to first-year students entering Indiana Tech. The recipient may reapply in each of three additional years. Scholarship amounts will range from one-half to full tuition for the year.

Scholarship applicants must be entering their first year of full-time enrollment at Indiana Tech and must complete the Scholars Leadership Program application form and essays, provide letters of reference from persons familiar with the applicant's leadership abilities and experiences, and be available for an interview. Each applicant must have a minimum cumulative high school grade point average of 2.5 on a 4.0 scale; be in the top half of their class; and have a minimum SAT score of 1,000 (R+M) or ACT of 22. Applicants to the program must be accepted to Indiana Tech in order to be considered for the Scholars Leadership Program.

Some of the criteria for selection are as follows:

Leadership
Scholastic achievement
Initiative
Ethics
Citizenship
Perseverance
Loyalty to family, friends, and community
Character
Personality
Work habits
Ability to set realistic goals
Responsibility
Commitment

The recipient must annually sign a Leadership Code of Conduct as a demonstration of compliance to be reflective of the actions and values of the Indiana Tech Scholars Leadership Program. The recipient must complete an approved service or leadership project on campus or in the community each semester while enrolled in the program. If eligible, this may coincide with a work-study or intern position. The recipient must attend monthly meetings with a staff, faculty, or student mentor. Recipients may be asked to represent the Scholars Leadership Program at events or activities with university administrators, alumni, or corporate representatives. Recipients must be actively involved in at least two student organizations. The recipient must file the Free Application for Federal Student Aid (FAFSA) annually by the March 10th deadline as the Scholars Leadership Program scholarship is not intended to displace other state or federal aid, but it may displace loans.

Robert S. Graziano Engineering Scholarship

The Robert S. Graziano Engineering Scholarship was established to support Indiana Tech engineering students with financial need. It is dedicated to Bob Graziano's son, Paul; his good friend and engineer, Bill Jurek (BSME '68); Dean Don Steiner, who provided on-campus jobs and helped him receive a Chrysler Scholarship; his wife, Diana, who patiently waited for three years; and to those aspiring engineers who will design and build tomorrow's systems. The recipient must be a full-time student at Indiana Tech. The scholarship will initially be given to a freshman student. It will be renewable during the student's tenure at Tech, but will be limited to four years. The recipient must maintain a 3.0 GPA and first preference shall be given to an engineering student enrolled in the College of Engineering and Computer Sciences.

Amanda E. Gross Scholarship

This scholarship was established by Ronald and Cheryl Gross in honor of their daughter, Amanda. Ron is a 1983 BSEE graduate of Indiana Tech. First preference for this scholarship will be given to students studying in the College of Engineering and Computer Sciences. Other disciplines within the university will be considered should an engineering major not be available. Recipients must be in good academic standing and demonstrate financial need. It is available to U.S. citizens only.

Philip G. Hammond Scholarship

Philip G. Hammond, a 1954 BSME graduate of Indiana Tech, established this scholarship. This scholarship will first be given to an entering freshman studying in the College of Engineering and Computer Sciences. Financial need is considered in selection of this award, and it is renewable based on continued satisfactory progress. This scholarship requires that the recipient be a U.S. citizen.

Mr. and Mrs. Henry Helberg Engineering Scholarship

Henry Helberg, former dean of engineering and former adjunct faculty member, established this scholarship. This scholarship is awarded to a student who has successfully completed two years of an engineering major at Indiana Tech. The student must be a team member of a sport that competes against other colleges, and must possess a 2.50 or better cumulative grade point average.

Donald G. Henderson Scholarship

Established by Donald G. Henderson, BSMA 1960. This scholarship is available to students studying in any discipline at the University. Prime consideration should be given to need and a burning desire for the student to succeed. Yet, the student must maintain a passing grade to receive or maintain the scholarship. One semester of probation is permitted, but if grades are not brought back up, the scholarship would be removed until the student is back in good standing. Then it might be reinstated.

Recommendation for the scholarship is given by the financial aid director with the approval of the senior management group of the university.

William J. Hess Memorial Scholarship

The scholarship fund was established in memory of William J. Hess, one of the founders of Indiana Tech. Both financial need and academic records are taken into consideration. In order to be considered for the scholarship, students must submit a FAFSA to Indiana Tech. To continue eligibility over a four-year program, students must maintain a 3.0 cumulative grade point average. The director of financial aid will select eligible applicants. It is available to U.S. citizens or permanent residents only.

Jasmin L. "Jas" Hubbard Memorial Scholarship for Leaders

The Jasmin L. "Jas" Hubbard Memorial Scholarship for Leaders was established in Hubbard's memory so that students could be recognized for showing significant experience and interest in leadership roles, both on and off the playing field. These students are leaders in their school or in their community; they are dedicated volunteers to worthy projects and organizations; and they have potential to be role models. Although the scholarship recipients must be strong academically, the emphasis is to be placed on their leadership skills. This scholarship is renewable each year, provided that the student shows a commitment to demonstrating leadership on the Indiana Tech campus and in the community.

Indiana Tech University Commitment Scholarship

The University Commitment Scholarship is an academic scholarship offered by Indiana Tech. Recipients need not complete a separate application. Selection of candidates is made by the admissions committee and is based on a combination of criteria, those being the high school cumulative grade point average and test scores (SAT or ACT). Open to incoming freshmen of all majors who have not attended another college, the scholarship is available to U.S. citizens and permanent residents only. Transfer students are eligible for this scholarship based on the cumulative grade point average from the previously attended college.

Indiana Tech Dollars for Scholars

Indiana Tech matches scholarships up to $1,000 per year for students who are awarded scholarships through Dollars for Scholars Chapters. DFS is a volunteer-operated community scholarship foundation that is affiliated with the Scholarship of America.

Indiana Tech Engineering Scholarship

The Indiana Tech Engineering Scholarship awards are available to students seeking degrees through our engineering department. To qualify, students must meet stringent academic criteria which include both a minimum grade point average and test score requirements. Transfer students are eligible for this scholarship program and must also meet certain eligibility criteria. Students should contact the admissions department for additional information. The Indiana Tech Engineering Scholarships are renewable and require that students maintain satisfactory academic progress.

Indiana Tech Family Grant

A 20% tuition discount will be awarded to a family when more than one member of the immediate family (for example: mother/father, brother/sister) is enrolled at Indiana Tech full time (12 credits or more). This discount will be awarded to the student taking the lower number of credits and will be in force only when both family members are enrolled on a full-time basis. If more than two family members are enrolled, each additional student will qualify for the grant.

Indiana Tech Grant Assistance

The purpose of Indiana Tech Grant Assistance is to provide institutional grant assistance to students who demonstrate financial need. Assistance is available to U.S. citizens and permanent residents and requires completion of a FAFSA.

Indiana Tech Working Grant

The purpose of the Indiana Tech Working Grant is to provide part-time employment on campus to students demonstrating financial need. In order to apply, a student must complete and submit a FAFSA. The grant is available to U.S. citizens or permanent residents only.

Franklin Electric SE Scholarship

Franklin Electric Co. has a long history of supporting Indiana Tech students. Franklin Electric Co. established this scholarship to help assist students with financial need in the software engineering program.

John A. Kalbfleisch Scholarship

This scholarship was established by the Pierson family to honor the memory of Mr. John A. Kalbfleisch, founder and first president of Indiana Tech. An eligible candidate must be a citizen or permanent resident of the United States or Canada and must file a FAFSA to determine financial need. The first preference for a candidate will be to engineering majors; however, other disciplines within the university may be considered should an engineering major not qualify. Students must demonstrate need and the ability to pursue academic excellence. This scholarship is renewable based upon satisfactory academic progress.

Archie T. Keene Scholarship

The Archie T. Keene Scholarship was established in memory Mr. Keene, who was the second president of Indiana Tech and was at the helm for 26 years before retiring in 1963. The scholarship will be awarded to a freshman student with first preference given to a student in the College of Engineering and Computer Sciences. Other fields of study may be considered. The scholarship recipient must be a U.S. citizen.

Donald H. and Sally King Scholarship

Mr. Donald King, a 1959 BSCE graduate of Indiana Tech, and his wife, Sally, are actively involved with the university. To assist the university in its commitment to education, they established this scholarship to assist students enrolled in the College of Engineering and Computer Sciences. Recipients of this scholarship must be in good academic standing and demonstrate financial need. Scholarships are renewable based upon the student maintaining satisfactory progress. They are available to U.S. citizens.

Kenneth L. King Scholarship

First preference will be for a student who is in civil engineering (not currently offered). Second preference will be for a student in the College of Engineering and Computer Sciences. Should there still not be a recipient, other students in other programs who meet the following criteria could be selected. The student must have some financial need. The extent of the need can be determined by the director of financial aid. The student must be a full-time student in good academic standing. Should the student drop down to a probationary status, they may retain their scholarship for one more semester. If grades are not brought back up, the scholarship will be put on hold until grades are raised. When this happens, the scholarship will be reinstated.

Dan and Nancy Kline Leadership Scholarship

This scholarship was established to support Indiana Tech students who stand out from their peers by showing skills in leadership and have potential as role models. Dan "Coach" Kline, retired on August 1, 2008, after 28 years of service to Indiana Tech as coach, athletic director, and eventually as the vice president of student life. With his dedicated wife, Nancy, by his side, Coach Kline touched many students' lives in a positive way. The Klines sacrificed a lot so that Indiana Tech's students could, as Dan often said, "graduate with good memories." The Dan and Nancy Kline Leadership Scholarship was established in their honor so that students could be recognized for showing significant experience and interest in leadership roles, both on and off the playing field. These students are leaders in their school or in their community; they are dedicated volunteers to worthy projects and organizations, and have potential to be role models. Although the scholarship recipients must be strong academically, the emphasis is to be placed on their leadership skills. This scholarship is renewable each year, provided that the student shows a commitment to demonstrating leadership on the Indiana Tech campus and in the community.

Edward J. Klodzen Scholarship

This scholarship was established by Mr. Klodzen, who retired from NIPSCO. He is a 1956 BSEE graduate of Indiana Tech. The scholarship fund will be used to support students majoring in an engineering discipline. Candidates with other majors will be considered should engineering students not be available. Students must demonstrate financial need and be in good academic standing. It is available to U.S. citizens or permanent residents only.

John S. and James L. Knight Foundation Scholarship

This scholarship was established by the foundation which was created by John S. and James L. Knight. The foundation is located in Miami, Fla. The scholarship will be used to support minority students attending on a full-time basis. Residents from Northeast Indiana receive priority consideration. It is available to U.S. citizens and permanent residents only.

Lois G. and Frank J. Krandell Scholarship

Mr. Lowell G. Krandell, a 1963 BSEE graduate of Indiana Tech, and his family established this scholarship in memory of his father to assist needy students. Mr. Lowell Krandell is retired and was employed by GTE as an electrical engineer. One annual scholarship will be awarded to a student majoring in electrical engineering. Other engineering or science fields will be considered should an EE candidate not be available. It is a renewable scholarship based upon satisfactory progress. It is available to U.S. citizens or permanent residents only.

Tom J. Landis Scholarship

Mr. Tom Landis, a 1969 BSME graduate of Indiana Tech, established this scholarship. Selection is made with first preference to a student enrolled in the College of Engineering and Computer Sciences. Other disciplines within the university will be considered should an engineering major not be available. Students must demonstrate financial need and maintain satisfactory progress in order to have the scholarship renewed. It requires completion of a FAFSA and is open to U.S. citizens or permanent residents.

Harold E. and Laura F. Lee Scholarship

Established by Mr. Harold E. Lee, a 1955 BSEE graduate of Indiana Tech, this scholarship is available to all academic disciplines within the university. Preferred consideration will be given to transfer students who may not have had a previous successful college experience, have returned and can demonstrate potential and need to be given a "second chance." The scholarship is renewable based upon the student maintaining a permissible academic average.

Legacy 2001 Scholarship

The Legacy 2001 Award Scholarship will be awarded to a student enrolled in the College of Professional Studies. If this is not possible, then any student in the university may be eligible. The recipient will be an individual whose employer does not have a tuition reimbursement program or who is unemployed. More than one student may participate in the scholarship. The recipient must maintain a satisfactory grade point average. There are no geographic stipulations on this scholarship.

Allan S. Leonard Scholarship

Mr. Leonard, a product design engineer with Ford Motor Co. and a 1963 BSME graduate of Indiana Tech, established this scholarship. A scholarship in Mr. Leonard's name will be awarded to a student majoring in the field of mechanical engineering. Other engineering

disciplines will be considered if an ME candidate is not available. A candidate for this award must demonstrate financial need and good academic standing. It is a renewable scholarship based upon satisfactory progress and is available to U.S. citizens or permanent residents only.

Elizabeth A. Lykowski Memorial Scholarship

Elizabeth "Liz" Lykowski was Indiana Tech's first out-of-state recruit when the women's volleyball program was reinstated in 2005. She was one of four seniors who had been with the team since its beginning. Lykowski, a defensive specialist for the Warrior volleyball team, died unexpectedly on Sunday, October 5, 2008. This senior business administration major had a congenital heart defect that could only have been detected through surgery. She was 21 years old. This scholarship celebrates the wonderful life of Liz Lykowski. It is to be awarded to a female volleyball player that is 3 years into the program. It is not restricted to a specific degree, but the recipient should have a GPA of at least 2.7. First preference is to be given to a defensive specialist. Preference is also given to residents of Michigan. Other disciplines may be considered should a candidate not be available.

Mac II Engineering Scholarship

Retired from QDT Limited where he was a systems engineer, Mr. Jack McCurley, a 1954 BSAEE Indiana Tech graduate, established this scholarship to assist students in financial need. First scholarship preference will go to a student who will major in aerospace engineering (major not currently available). Next preference for a candidate will be to students majoring in mechanical engineering. Other engineering or science majors will be considered should a candidate not meet the above criteria. Candidates for this scholarship must be citizens of North America or hold permanent resident status. This scholarship is renewable based upon satisfactory academic progress.

Joan Maassen McCurley Scholarship

Jack McCurley, a 1954 BSAE graduate, established this scholarship to honor his wife, Joan. Mr. McCurley has also established two other scholarships to benefit Indiana Tech students. First preference for this award is for a female student majoring in aerospace engineering (not currently available). Second preference will be to a female student studying mechanical engineering. Other engineering or science majors will be considered should a candidate not meet the above criteria. A candidate must be a citizen of North America or hold permanent resident status. This scholarship is renewable based upon satisfactory academic progress.

Edwin C. Metcalfe Scholarship

Mr. Metcalfe has been a member of the Board of Trustees since 1983 and served as Board chair. In 1999, he was elevated to trustee emeritus. Mr. Metcalfe established this scholarship to help full-time students who are U.S. citizens. The applicant must demonstrate financial need and academic excellence. Scholarships are renew-

able based on continued academic excellence, with a minimum cumulative 2.5 GPA.

Rear Admiral David J. Nash Scholarship

This scholarship is funded by the Society of American Military Engineers (SAME) to honor Rear Adm. David J. Nash, a 1965 BSEE graduate of Indiana Tech. Retired from the U.S. Navy, Rear Adm. Nash was in command of the Naval Facilities Engineering Command (NAVFAC) and became chief of civil engineers in 1995. Rear Adm. Nash has a Distinguished Service Medal, two Legion of Merit Awards, a Defense Meritorious Service Medal, three Meritorious Service Medals, three Navy Commendation Medals including one with "V" for valor, and several other individual and unit awards. This scholarship is awarded to a student majoring in engineering, who must demonstrate need and the ability to pursue academic excellence. It is available only to U.S. citizens or individuals pursuing U.S. naturalization.

Gene L. and Darlene J. Neff Leadership Scholarship

This scholarship was established by Gene L. Neff, in memory of his wife, Darlene J. Neff, to support Indiana Tech students who exhibit leadership skills and are potential role models. Gene is a 1958 civil engineering graduate, and Darlene was an enthusiastic supporter of Indiana Tech. Their time at Tech left precious memories, and not only was educational, but provided the foundation for a successful career and a loving marriage. This scholarship is to be awarded to a student who shows skills in leadership. It is open to all Indiana Tech full-time students.

The News-Sentinel Scholarship

The Fort Wayne News-Sentinel Scholarship was established to provide assistance to students attending Indiana Tech. Recipients of this scholarship must come from Northeastern Indiana. Scholarships are need-based and renewable based upon satisfactory progress. The scholarship requires completion of a FAFSA and is available to U.S. citizens and permanent residents only.

NIPSCO (Northern Indiana Public Service Company) Scholarship

This scholarship was established by the Northern Indiana Public Service Company, whose service area includes Fort Wayne, Ind. It will assist students who choose to attend a private institution. Based upon financial need and academic excellence, one award will be made annually. It is available to U.S. citizens and permanent residents only.

North American Van Lines Scholarship

North American Van Lines, whose corporate offices are located in Fort Wayne, Ind., established this scholarship fund. The scholarship provides funding to students who have financial need and show academic excellence. Awards are renewable based upon satisfactory progress and require completion of a FAFSA. They are available to U.S. citizens and permanent residents only.

Operating in Excellence Scholarship (NSBE)

This scholarship was established to support the financial need of a National Society of Black Engineers member. It will ensure the academic development of our NSBE members by financially supporting their higher education goals. The mission to increase the number of culturally responsible black engineers who excel academically, succeed professionally and positively impact the community inspired the group to establish this scholarship. Students must be current NSBE members PCI, collegiate, or alumni. Members must be in good standing nationally. Recipients must also be active community members not restricted to the Fort Wayne community. Recipients must maintain a 2.5 GPA and express financial need. The award is non-renewable and is to be used toward tuition/housing costs.

Byron Parshall Leadership Scholarship

This scholarship was established by Byron Parshall, a 1962 BSEE graduate. Parshall is most noted for his work in the aerospace industry. He was an instrumental part of the team that worked on the space shuttle. His Indiana Tech education prepared him well for "rubbing elbows" with the other engineers he worked with during his career. This scholarship is to be awarded to students that want to get a degree, but have a financial need. It is unrestricted to a particular college within Indiana Tech.

Part-Time Employment

The Career Planning and Development Center acts as a clearinghouse for any part-time employment off-campus. All part-time employment opportunities are made available through the career services office. On-campus employment opportunities exist in many departments and are posted on Indiana Tech's web pages under Student Job Postings by our human resource department. Wide ranges of off-campus opportunities are listed. For instance, there are some opportunities in factories, restaurants, and other retail businesses and other opportunities in local engineering organizations, which require skills such as drafting. The rate of pay and the number of hours per week of part-time employment vary with the employer.

Pepsi-Cola Scholarship

PepsiCo provides funding on an annual basis to an Indiana Tech student to be used toward tuition, books, or housing costs. The funds are awarded with first preference to a student employed in the food service department who indicates a commitment to service and performs that work in a responsible manner. While scholastic achievement is not a major consideration, the recipient must maintain satisfactory progress. The scholarship is open to all majors. In addition to funding an annual scholarship, PepsiCo assists the university in marketing and promotional activities.

Phelps Dodge Foundation Scholarship

The Phelps Dodge Magnet Wire Co., with corporate offices in Fort Wayne, Ind., established this scholarship to provide financial assistance to minority students attending Indiana Tech. Recipients of this scholarship must be enrolled in the College of Engineering and Computer Sciences, and demonstrate academic excellence and financial need. Scholarships are renewable based upon satisfactory progress and require completion of a FAFSA. Available to U.S. citizens and permanent residents only.

Carl and Katherine Pierson Memorial Scholarship

This scholarship was established by the Pierson family to honor the late Carl Pierson, who was a long-time member of the Board of Trustees of Indiana Tech. It also pays tribute to Mrs. Katherine Kalbfleisch Pierson, who was the wife of the university founder, Mr. John Kalbfleisch, and of Carl Pierson. This scholarship is awarded to assist students in financial need. It is available to U.S. citizens and permanent residents. Applicants are required to complete a FAFSA.

Dr. Ivan and Mary Planck Scholarship

This scholarship was established to honor Dr. Planck and his wife, Mary. Dr. Planck, also known as "Papa Bear" to many of his students, came to Indiana Tech in 1939 and was named head of the mechanical engineering department until his retirement in 1971. A mechanical engineering major will receive this award; if a candidate is not available, then a student in other engineering disciplines will be selected. Financial need and academic records are reviewed and will help determine eligible candidates for this scholarship. The scholarship is renewable based upon satisfactory progress and is available to U.S. citizens or permanent residents.

Rebecca Shallenberger Pratt Scholarship

This scholarship was established in memory of Rebecca Shallenberger Pratt, first wife of Howard L. Pratt, a 1963 BSME graduate and project manager with Navistar. The recipient of this award must major in the field of mechanical engineering. Other engineering disciplines may be considered should an eligible ME major not qualify. This scholarship will accumulate until such time that it can support a student in the College of Engineering and Computer Sciences should a recipient not qualify. Students must demonstrate financial need and be in good academic standing. The scholarship is renewable based upon satisfactory progress and is available to U.S. citizens or permanent residents only.

Presidential Scholarship

This scholarship was established by Nelson and Peggy Wenrick to recognize the significance of presidential leadership to the further development of the Indiana Tech. Mr. Wenrick is a 1960 graduate in civil engineering and a former member of the Board of Trustees. The scholarship is awarded to a full-time student. The scholarship was established to provide funding to students who have financial need and show academic excellence. It is renewable based upon satisfactory progress and is available to U.S. citizens or permanent residents only.

Stanley and Shirley Puskarz Scholarship

Stanley and Shirley Puskarz established this scholarship. Mr. Puskarz is a 1959 BSME graduate of Indiana Tech. Candidates for this scholarship are to be freshmen majoring in mechanical engineering. Other engineering disciplines will be considered if a mechanical engineering major is unavailable. The scholarship is renewable based upon the recipient maintaining at least a C grade point average. Candidates must be citizens of the United States.

J. S. Robertson Scholarship

James and Judy Robertson established this scholarship. Mr. Robertson is a 1959 BSME graduate of Indiana Tech and retired from the machinery manufacturing division at Dart Container Corp. Eligible recipients must be in either their junior or senior year of college, demonstrate financial need, and be in good academic standing. This scholarship can assist with tuition, books, or lab fees. The scholarship is renewable based upon satisfactory progress and is available to U.S. citizens or permanent residents only.

Bernard and Joan Rome Scholarship

This scholarship was established by Mr. and Mrs. Rome to assist engineering students in financial need. Bernard Rome is a 1956 BSME graduate of Indiana Tech. He retired as president of AMF and also retired from his own consulting firm, BJR & Associates. Eligible candidates must be citizens or permanent residents of the United States and must file a FAFSA to determine financial need. The recipient of this award must major in engineering; however, other disciplines within the university may be considered should an engineering major not qualify. Students must demonstrate need and the ability to pursue academic excellence. This scholarship is renewable based upon satisfactory academic progress.

Professor Robert Ruhl Memorial Scholarship

Thomas and Granis Dowling established this scholarship. Tom Dowling is a 1951 BSCE graduate of Indiana Tech. He retired as manager of technical services for the Institute of Makers of Explosives (IME) and received an honorary doctorate from Indiana Tech. This scholarship was established to recognize the memory of Robert Ruhl, a civil engineering instructor and longtime dean of engineering at Indiana Tech. Professor Ruhl served on the Tech

faculty from 1932 to 1972. This scholarship is awarded to a student majoring in engineering. Other disciplines will be considered should an engineering candidate not be available. It is available to U.S. citizens or permanent residents only.

Donald C. Rush Scholarship

Donald C. Rush, a 1951 BSCE graduate of Indiana Tech, established this scholarship. In his early years, Mr. Rush was a reservist in the U.S. Army and was sent to France where he had the opportunity to build one of the first NATO air bases in Europe. Upon his discharge he was employed by the Michigan State Highway Department and held various assignments before retiring as a highway engineer in 1984. To honor Rush's contributions the rest area on northbound I-75 south of Grayling, Mich., was named for Donald C. Rush. The scholarship will be awarded to a student demonstrating financial need with first preference to a student enrolled in the College of Engineering and Computer Sciences. The student must maintain at least a 2.0 GPA and be a U.S. citizen.

Edward J. and Hildegarde Schaefer Memorial Scholarship

This scholarship was established by Mr. Edward Schaefer to honor his wife, Hildegarde. Mr. Schaefer was a longtime supporter of the university and served on its Board of Trustees from 1963 to 1991. He was the co-founder of the Franklin Electric Co. Four to five scholarships are awarded annually to U.S. citizens who plan to earn degrees in the College of Engineering and Computer Sciences and who demonstrate financial need and academic excellence. Scholarships are renewable based on continued academic excellence. Selection is made by the director of financial aid.

Schalow-Huff-Landis Scholarship

The Schalow Foundation established this scholarship to honor Dr. Rudy Schalow, a 1964 BSEE graduate, and two Indiana Tech educators: Margaret Huff, a professor of English, and Hugh Landis, a professor of mathematics, both of whom strongly encouraged students to strive for excellence. Recipients of the Schalow-Huff-Landis scholarship may be either males or females who are citizens of the United States. Applicants must be enrolled on a full-time basis and have completed 30 or more credits in the disciplines of electrical engineering or computer science. The applicant must have at least a 2.5 cumulative grade point average. Veterans of the U.S. Armed Forces shall be given preference for awards. The scholarship requires completion of a separate application along with submission of a one-page essay. Applications are available from the financial aid office.

Thomas F. Scully Memorial Scholarship

The scholarship was established in memory of Thomas F. Scully, a former president of the university. It is awarded to freshman engineering majors possessing academic excellence plus financial need. Students must complete and submit a FAFSA. To continue eligibility over a four-year period, students must maintain a 2.50 G.P.A. The number of scholarships will vary per year and are available to U.S. citizens or permanent residents only.

Orland and Marilyn Sheese and Catherine Boehm Scholarship

Mr. Sheese graduated from Indiana Tech in 1945 in radio & television engineering. He worked twelve years in the electronics field for Magnavox. In 1956, he joined General Electric's heat processing equipment product department. He retired from GE in 1978, when the department was sold to Wellman Engineering of England. Mr. Sheese retired from Wellman in 1987 as field manager. This scholarship was established to assist the financial needs of engineering students who are U.S. Citizens and have C or better grade point average. Preference is given to electrical, mechanical, or computer engineering students. Financial need will be considered. As added criteria first selection will be to award this scholarship to students who are employed on a part-time basis and activity contributing to college expenses.

Nellie Shiflet Memorial Scholarship

Edwin L. Wedel, 1952 BSRE graduate, established this scholarship in memory of Nellie Shiftlet, who ran the Indiana Tech bookstore when he was a student. She had a profound influence on Mr. Wedel's obtaining his degree. First preference will be given to students majoring in electrical engineering. If no students meet this qualification, other fields of study may be considered. The scholarship is awarded to a freshman, who must maintain a satisfactory grade point average, and is renewable up to three times (four years total).

Sigma Pi Scholarship

Scholarships are awarded annually to the brothers of Sigma Pi fraternity. Current fraternity members select recipients.

Herman A. and May E. Sinemus Scholarship

Herman and May Sinemus endowed this scholarship. Mr. Sinemus is a 1948 BSCE graduate of Indiana Tech and a retired traffic engineer. This scholarship was established to support the university in its commitment to education and to assist students enrolled in the College of Engineering and Computer Sciences. Other disciplines within the university would be considered should an engineering major not be available. Financial need is not necessarily a deciding factor in selecting a candidate, but may be taken into consideration. Renewal of this scholarship is based upon maintaining a satisfactory grade point average.

Abraham and Ellen Smaardyk Scholarship

Abraham and Ellen Smaardyk established this scholarship after Abraham retired from the Argonne National Laboratories. He is a 1943 BSME graduate of Indiana Tech. The scholarship will provide assistance to students who choose to attend Indiana Tech. Students enrolled in the College of Engineering and Computer Sciences will be given preferential consideration. The scholarship will be awarded primarily to applicants with high scholastic records, and also may be awarded to an applicant who has achieved an average scholastic high school standing, who can meet the entrance requirements without deficiencies, and who shows evidence for hard work and perseverance. The scholarship shall be granted to a

full-time freshman student and shall be renewable each year upon evaulation of scholastic performance. The scholarship shall be limited to four years. It is available to U.S. citizens and permanent residents only. Reccomendations for the scholarship will be made by the director of financial aid and then approved by the administrative committee of the college.

Laird W. Smith Scholarship

Mr. Smith, a 1957 BSCE graduate of Indiana Tech, established this scholarship. He is self-employed as a consultant. No specific major is required, but the award does require that the applicant have a FAFSA form on file, which will help determine financial need. The scholarship is renewable based upon satisfactory progress and is available to U.S. citizens or permanent residents only.

The Philip and Sadie Sporn Memorial Scholarship

This scholarship was established by Philip and Sadie Sporn. Mr. Sporn was a philanthropist and friend of the university. This scholarship will assist students who choose to attend a private university. Recipients must have completed a minimum of 30 credits and demonstrate financial need and academic excellence. Scholarship recipients are chosen by the financial aid office and awards are available to all majors. Awards are renewable based upon satisfactory progress, are available to U.S. citizens and permanent residents only, and require completion of a FAFSA.

Thomas and Laurel Stockamp Scholarship

Thomas and Laurel Stockamp established this scholarship. Mr. Stockamp is a 1963 BSCE graduate of Indiana Tech and president of TG Excavating, Inc. Selection of this scholarship will first be made to a student living in Whitley County, second to a student from the state of Indiana, and third to a U.S. citizen. This scholarship is open to all majors and will be awarded using the criteria of financial need and academic excellence. It is renewable based upon satisfactory progress. Maximum amounts will vary per year but will never exceed the limits set out by the donors of this scholarship.

Robert J. Swindell "Balanced Man" Scholarship

Robert J. Swindell, a retired chemistry professor at Indiana Tech, established this scholarship. It is awarded to an incoming freshman enrolled on a full-time basis. The recipient's high school record will demonstrate a balanced approach to life through evidence of scholarship, leadership, and athletic participation. The student does not have to be listed as a varsity athlete. The scholarship is open to both males and females and is a one-year award. A member of the Sigma Phi Epsilon fraternity and the chapter counselor will select the recipient.

Nicki and Zohrab Tazian Scholarship

Zohrab and Nicki Tazian established this scholarship. Mr. Tazian was a member of the Board of Trustees. He is president of Z.K. Tazian Associates, Inc. and a 1960 BSCE graduate of Indiana Tech. The scholarship will be awarded on an annual basis. To be eligible,

students must be working toward a bachelor of science in the College of Engineering and Computer Sciences. Engineering students will be given first preference. Review of academic credentials and counselor recommendations will be made by the office of financial aid. Students must be citizens of the U.S. or Armenia.

Ralph R. Teetor Scholarship

The Teetor Scholarship is awarded to a recipient that is physically challenged. The disability must be such as to require the student to use special aids, facilities, and procedures or to require a form of assistance or instruction not normally required of non-handicapped students. Applicants must be enrolled on a full-time basis. Candidates must contact the director of financial aid. This scholarship is renewable and is available to U.S. citizens or permanent residents.

Henry J. and Elizabeth R. Toews Scholarship

This scholarship was endowed by Henry and Elizabeth Toews. Mr. Toews is a retired contractor and a 1939 BSCE graduate of Indiana Tech. The first preference for a candidate will be a student enrolled in the College of Engineering and Computer Sciences. It is preferable that the student's interest be in wastewater treatment. If no student meets this qualification, other fields of study may be considered. A recipient must be enrolled on a full-time basis and must maintain a satisfactory grade point average.

Edward Moore and Walter E. Trask Scholarship

This scholarship was established to honor the late Walter E. Trask, a retired professor of accounting at Indiana Tech. The Moore/Trask scholarship also recognizes the late J. Edward Moore, an investor and close personal friend of the Trasks. Both of these gentlemen recognized the importance of a college education, and this scholarship will assist a student in obtaining that goal. The recipient must demonstrate financial need and academic excellence Awarded to an upper-class student working toward an accounting or business administration degree, this scholarship requires completion of a FAFSA and a separate scholarship application.

W. Paul Troder Scholarship

Paul Troder is a 1951 BSCE graduate of Indiana Tech. He established this scholarship to assist full-time students attending Indiana Tech. It is open to all disciplines within the university as long as the candidate is enrolled on a full-time basis, maintains a satisfactory grade point average, and demonstrates financial need and a desire to succeed. This scholarship is renewable for a period of four years.

Verizon Minority Scholarship

This scholarship was established by Verizon which has offices in Fort Wayne, Ind. The scholarship is awarded to provide assistance to minority students who choose to attend a private institution. The scholarships are awarded to students who come from regions served by Verizon. Based upon financial need and academic excellence, scholarships are renewable based upon satisfactory progress and are available to U.S. citizens and permanent residents only.

Lloyd R. and Shirley Wadekamper Scholarship

Lloyd and Shirley Wadekamper established this scholarship. Mr. Wadekamper is a 1957 BSME and AE graduate of Indiana Tech and is retired from Douglas Aircraft where he was a test conductor/engineer. Preference for this scholarship will be given to a student who chooses the engineering curriculum. Second choice would go to a student in the College of Engineering and Computer Sciences and third choice to other disciplines within the university. Recipients must be full-time students who can apply themselves academically. The scholarship is renewable based upon satisfactory progress and is available to U.S. citizens or permanent residents only.

Mary Louise (Ulrey) Wainwright Scholarship

Donald E. Wainwright established this scholarship. Mr. Wainwright is a 1956 BSME graduate of Indiana Tech. The scholarship is available to all disciplines at the university. Selection is based on financial need. While scholastic achievement is not a major consideration, the recipient must maintain satisfactory progress for scholarship renewal. It is open to U.S. citizens or permanent residents only.

Ralph Warmack Memorial Scholarship

Ralph H. Warmack was a 1942 mechanical engineering graduate of Indiana Tech. Following his service to the U.S. during World War II, Ralph went to work in the aerospace industry where he remained for 22 years. During his career he worked on several important projects such as the Mars probe and lunar landing missions. A scholarship was established in his memory to help and encourage exceptional students to attend Indiana Tech, and in particular students who, because of financial need, might not otherwise have the opportunity to attend college or devote themselves to be full-time students.

Patty Weddle Scholarship

Rick and Patty Weddle established this scholarship. Mrs. Weddle is a 1993 BSHSM graduate of Indiana Tech. First preference for a scholarship recipient will go to a female student enrolled in the College of Professional Studies, with second preference to a female student in the College of Business. Financial need will be taken into consideration when selecting the recipient. The scholarship requires completion of a FAFSA, which will determine financial need. The student must achieve and maintain a passing average at Indiana Tech. The scholarship will not require that the candidate be enrolled as a full time student. It is open to U.S. citizens or permanent residents only.

Heinz and Nanalee Wegener Scholarship

Heinz and Nanalee Wegener established this scholarship. Mr. Wegener is owner/president of Cross Technologies, Inc. and a 1970 BSEE graduate of Indiana Tech. The purpose of the Wegener scholarship is to provide funds to eligible candidates who demonstrate academic excellence and financial need. The financial aid office will choose scholarship recipients. It is available to U.S.

citizens and permanent residents only and requires completion of a FAFSA.

Wells Fargo Scholarship

Wells Fargo Bank, whose service area includes Fort Wayne, Ind., established this scholarship to assist a student who demonstrates academic excellence. The director of financial aid will select the student. No separate application is necessary. It is available to U.S. citizens and permanent residents only.

Mr. and Mrs. Nelson Wenrick Scholarship

This scholarship will initially given to a freshman student. The scholarship would be renewable during the student's stay at Indiana Tech if the student maintains a 2.0 cumulative GPA. The scholarship would be limited to four years.The student does note have to be have an outstanding high school academic record, but must meet the academic criteria to enter his or her chosen field. There must be evidence the student is a hard worker and dedicated to working hard in college.The student's program choice should be civil engineering (not currently offered); if no student meets these qualifications other fields of engineering would be appropriate. The recipient must be a citizen of the United States.

R. A. Weymouth Scholarship

This scholarship was established by Mr. Richard Weymouth, a 1962 BSME graduate of Indiana Tech. Preference for this scholarship will be given to a student who is a veteran of the armed services of the United States of America. The purpose of the Weymouth scholarship is to provide funds to eligible candidates who are hard-working and find their educational endeavor a challenging experience. The scholarship is open to all disciplines at the university, and financial need is considered. It requires completion of a FAFSA, and is open to U.S. citizens or permanent residents.

Barbara Wigham Scholarship

This scholarship was established to recognize Mrs. Barbara Wigham, president of Communication and Marketing Specialists. Wigham received an honorary degree from Indiana Tech in 2000 and has been very instrumental in the Fort Wayne community. She serves on many community boards, and is a former Indiana Tech Trustee. Recipients of this award are those students who may not rank in the top of their class but who show the desire to obtain a degree. The scholarship is open to all majors offered by the university, and financial need will be considered. The scholarship requires that the recipient file a FAFSA and is renewable based on satisfactory progress. It is available to U.S. citizens and permanent residents only.

Thomas and Millie Wong Scholarship

This scholarship was established by Tom and Millie Wong. Tom Wong, a 1966 BSCHE Indiana Tech graduate is president of Visual Check International located in Fresno, Calif. The scholarship will be awarded to a deserving minority, female student who is enrolled at the university on a full-time basis. All majors will be considered eligible for this award, and it is also open to College of Professional Students. It will be based upon academic excellence. Financial need will also be a determining factor in the selection. This is a renewable scholarship that is open to citizens or permanent residents of the United States.

Joseph D. Woodrich Scholarship

Joseph D. Woodrich established this scholarship in 2003. Mr. Woodrich is a 1966 chemical engineering graduate of Indiana Tech. Eligible students must demonstrate a financial need. The scholarship is renewable for up to 3 years and available to students having achieved approximately 50% of the credits needed to obtain their undergraduate degree. It is restricted to a student in the College of Engineering and Computer Sciences. The recipient must be a U.S. citizen. This scholarship is created to assist a "C-type" student with a 2.0 to 2.8 GPA. The last requirement is that the recipient work 15 to 25 hours a week while attending classes. The purpose for this scholarship is to financially help a student who has to work harder than the average student to obtain an education and has demonstrated an above average work ethic.

Jackie D. and Velma J. Wright Scholarship

Mr. and Mrs. Wright established this scholarship to assist students involved in the athletic programs at Indiana Tech. Mr. Wright is president/chairman of Wright-Moore Corp. The recipient of this scholarship will be a student who is involved in the basketball program at Indiana Tech. Athletes in other sports may become eligible should a student in the basketball program not qualify. No specific major is required but the award does require that the applicant have a FAFSA form on file, which will help determine financial need. The scholarship is renewable based upon satisfactory progress and is available to U.S. citizens or permanent residents only.

Yergens-Rogers Foundation Scholarship

The Yergens Rogers Foundation established this scholarship to recognize the contributions of Mrs. Virginia Yergens Rogers. Mrs. Yergens Rogers is president and treasurer of The Huser-Paul Co., a company founded by her late husband, Paul Yergens. Students from Fort Wayne and the surrounding area will have first preference for assistance. All majors will qualify for consideration, and selection will be based upon financial need and academic excellence. To maintain the scholarship, the recipient must meet normal standards of progress. It is available to U.S. citizens or permanent residents only.

Fred Zollner Foundation Scholarship

This scholarship was established by the foundation that was created by Fred Zollner, who founded the Zollner Corp. located in Fort Wayne. Students must major in either engineering or computer science and live within a 75-mile radius of Fort Wayne. Candidates are approved based on students' high school academic records. Scholarships are renewable based upon a satisfactory GPA of 2.75. They are available to U.S. citizens or permanent residents only.

Institutional Aid & Scholarships (continued)

Federal Programs

Federal College Work-Study: The purpose of the Federal College Work-Study Program is to afford part-time employment to qualified students needing help to defray the costs of their education. It requires completion of the FAFSA and demonstrated financial need and is available to U.S. citizens and permanent residents only.

Federal PELL Grant: A Federal PELL Grant is a program awarded to students who enter recognized post-secondary educational programs after July 1, 1973, and demonstrate exceptional financial need. Award amounts vary according to an "eligibility index." It requires completion of a FAFSA and is available to U.S. citizens and permanent residents only.

Federal Perkins Loans: The United States Government makes low-interest loan funds available to needy students. Repayment of the loan starts after the student ceases to carry at least six (6) credit hours. Loans are awarded on a first-come, first-served basis and require completion of the FAFSA.

Federal PLUS Loan: A Federal Parent Loan for Undergraduate Students is available to students' parents through private lending institutions. Repayment begins within 60 days of disbursement. Simple interest is charged.

Federal Subsidized Stafford Student Loans: Loans are available to U.S. citizens and permanent residents through private lending centers (banks, credit unions, savings and loans, etc.). Federal, state, and private agencies guarantee Federal Stafford Loans. Check with the financial aid office for annual limits. Repayment begins six months after graduation or withdrawal. The loans require completion of the FAFSA.

Federal Academic Competitiveness Grant: Federal grant available to first and second year Pell eligible students. Eligible students must have completed a rigorous secondary school program, be Pell eligible, and a U.S. Citizen or Permanent Resident of the United States. Grade point average and income requirements apply to this program.

Federal National Smart Grant: Available to third and fourth academic year students. Eligible students must be U.S. Citizens or Permanent Residents of the United States, Pell eligible, be enrolled on a full time basis and major in certain degrees and posses at least a 3.00 cumulative grade point average.

Federal Supplemental Educational Opportunity Grants: Under the Higher Education Act of 1965, Federal Supplemental Educational Opportunity Grants are made available to qualified students who demonstrate exceptional financial need. They require completion of the FAFSA.

Federal Unsubsidized Stafford Loan: This is a low interest loan, and repayment by the student begins six (6) months after graduation or withdrawal. It is available to students who do not qualify for the Federal Stafford loan program. Interest can be paid on a monthly or quarterly basis or capitalized. It requires completion of a FAFSA and is available to U.S. citizens and permanent residents only.

State Programs

Grants-in-Aid: Under the provision of Public Law 565, the federal government and state jointly provide funds for scholarship grants-in-aid to students who have physical or mental impairments, which constitute vocational handicaps. The State Vocational Rehabilitation Division is responsible for the determination of the grants, which generally pay tuition and some fees.

SSACI Freedom of Choice Grants: Early in 1973, the Indiana State Legislature approved a new "Freedom of Choice" law to help make it possible for students with financial need to attend independent colleges rather than state institutions in Indiana if they prefer. The program will help Indiana students who qualify under the Indiana Higher Education Grant Program to make up the difference between cost at preferred privately supported colleges and the cost of similar programs of study at State colleges or universities. Students must have their FAFSA at the Federal Processor by March 10.

SSACI Indiana Higher Education Awards: Residents of Indiana may apply for an Indiana Higher Education grant. The maximum grant is based on financial need and is set by the State Student Assistance Commission. Students and parents must have their FAFSAs at the Federal Processor by March 10. Further information concerning the Indiana Higher Education Grant Program may be obtained from the director of financial aid.

Financial Aid Standards for Satisfactory

Academic Progress

In order for a student to continue eligibility for financial assistance, he/she must maintain satisfactory progress. Academic records of financial aid recipients will be reviewed at least once per year, usually at the end of the academic year. Failure to meet these standards after one year will result in the student being placed on financial aid probation. Failing to meet the required standards after two years will result in termination of all financial aid.

The following procedure is followed with regard to financial aid cancellations: Before complete cancellation of assistance is implemented, the financial aid office will notify the student and, if applicable, the parent of that action in writing. At that time, the student will be given a two-week time limit to request reinstatement of financial aid eligibility. Documentation of unusual circumstances, which affected the student's progress, must be submitted before any further action is taken on the student's behalf. Students meeting the minimum hour criteria will be noted as making satisfactory progress. Students receiving financial assistance have a maximum period of time in which to complete their educational objective. The standards of Satisfactory Academic Progress are measured both qualitatively and quantitatively. The quantitative measure requires a minimum progressive accumulation of academic credits. Students must successfully earn 67 percent of the credits attempted at Indiana Tech. The qualitative measure requires maintenance of a specific minimum grade point average.

Completed Number of Credit Hours / Cumulative GPA

0 to 18 credits.....1.50
19 to 35 credits.....1.70
36 + credits 2.00

The following will have an effect on the student's progress. Therefore, before a decision is made to withdraw from a course, the student should be sure to review and meet the minimum hour and cumulative GPA requirements noted above. The following will effect a student's degree progression:

Assigned Grade of.....A, B, C, D
Grade Counts Toward Attempted Hours..... Yes
Grade Counts Toward Earned Hours..... Yes
GPA Affected..... Yes

Assigned Grade of.....Incomplete (I)
Grade Counts Toward Attempted Hours..... Yes
Grade Counts Toward Earned Hours..... No
GPA Affected..... No

Assigned Grade of..... Withdrawal (W)
Grade Counts Toward Attempted Hours..... Yes
Grade Counts Toward Earned Hours..... No
GPA Affected..... No

Assigned Grade of.....Repeated Courses
Grade Counts Toward Attempted Hours..... Yes
Grade Counts Toward Earned Hours..... No
GPA Affected..... Yes

Length of Financial Aid Eligibility: Students may not exceed 150 percent of the maximum published credit hours required for the degree program. The following information indicates the maximum amount of attempted credit hours the student may have to receive financial assistance. Students enrolled on less than a full-time basis are reminded to review and monitor SAP standards. Students who transfer from another university will be measured based upon their previous degree and expected major of study while enrolled at Indiana Tech. Transcripts are reviewed individually to determine all available transfer credit in their new major at Indiana Tech.

Degree Attempted / Maximum Attempted Credit Hours Allowed

Associate degree.....95 credits
Bachelor's degree.....185 credits
Master's degree.....95 credits
Ph.D.....90 credits

Academic progress includes all semesters the student has been in attendance, not just the semester the student has received aid. A student must assure that he/she will meet the minimum enrollment requirements BEFORE withdrawal from any registered course.

Pre-professional and Pre-graduate Programs

Many graduates of the Indiana Tech elect to enter a professional or graduate school upon completion of their undergraduate studies. The engineering, science, and business curricula provide not only valuable backgrounds for careers within the individual fields but in law and medicine, as well. A student planning to enter a professional or graduate school should obtain information as to the entrance requirements of such institutions and should arrange his/her program at Indiana Tech accordingly. The department head will direct the student to the persons most closely acquainted with the professional or technical field concerned. The curricula at Indiana Tech furnish a sound background for entrance into the professional and graduate schools. Financial assistance is available to those students continuing in the MBA and Ph.d. program through Indiana Tech. Contact the financial aid office for available funding.

GENERAL INFORMATION

Contents

Admissions

Procedure

Students who wish to apply for admission may submit formal applications after completion of the junior year of high school or its equivalent. When all admission materials are received by Indiana Tech, the applicant is notified concerning eligibility for admission. In addition to the application form, these materials include the high school transcript, ACT or SAT test scores, and an application fee of $50. The application fee is not refundable and cannot be applied to tuition, fees, or housing. Checks or money orders should be made payable to Indiana Tech.

A new student may enter at the beginning of any regularly scheduled term. The exact dates are indicated in the academic calendar. An application form may be obtained from the Office of Admissions, Indiana Tech, 1600 E. Washington Boulevard, Fort Wayne, IN 46803, or online at www.IndianaTech.edu

Advance Deposits

Each new student admitted to Indiana Tech must make an advance deposit of $100 (applies toward tuition) after notice by the Office of Admissions that the application has been accepted.

This is refundable if written notification of cancellation is received at the university by May 1 for students starting in the fall and by October 1 for students starting in the spring.

Upon receipt of the advance deposit, the student's name is officially recorded on the roster of students. This procedure assures a student of a place in the university. The advance deposit will be fully credited to the student's tuition and fees upon first registration. This deposit is not recurring. Students who will live in Indiana Tech residence halls are required to make a $350 deposit with their application for student housing. This deposit is refundable if written notification of cancellation is received by the university by May 1. This deposit is held as security against damage and is refundable upon completion of the terms of the residence hall contract. Housing for both male and female students is available. A student is not considered fully accepted until the following are completed:

1.) All required admission forms including the application fee have been submitted;
2.) He/she has been notified of acceptance by the Office of Admissions;
3.) He/she has confirmed intention to matriculate by forwarding the $100 tuition deposit plus a residence deposit, if applicable.

Campus Visits and Interviews

Candidates for admission and their families are encouraged to visit Indiana Tech so that they may tour the campus and talk with an admissions counselor. Prospective students are strongly encouraged to meet with faculty members about anticipated programs of study. An appointment may be made by writing the Office of Admissions or by calling toll free at 800.937.2448 ext. 2205. Office hours are weekdays 8:30 a.m. to 5:00 p.m. Although a personal interview is not required, Indiana Tech reserves the right to require an interview if the Office of Admissions considers an interview desirable.

Minimum Requirements For Admission

Freshman Students: Admission as a freshman student is primarily based on the applicant's secondary school record. The student also is required to submit an SAT or ACT result. Extracurricular interests and activities and recommendations from secondary school officials are also considered. A personal interview, though not required, is strongly recommended.

Advanced standing may be awarded to new students on the basis of CEEB advanced placement test scores, special examination by Indiana Tech, or by the College Level Examination Program (CLEP), both general and subject examinations.

Indiana Tech recognizes the General Education Development test for applicants who wish to establish high school equivalency.

Transfer Students: A student who is attending or has attended another college or university may apply for admission to Indiana Tech as a transfer student by submitting the regular application for admission, secondary school transcripts, and transcripts from all colleges previously attended. Transfer credit may be granted for courses completed with the grade of C or higher or their equivalents from accredited colleges or universities. Application of transfer credit to specific degree programs is determined by the appropriate college dean. Students wishing to transfer from colleges not regionally accredited may be required to submit catalogs and/or course syllabi in order that potential transfer credit may be analyzed.

Credit awarded through the College Level Examination Program (CLEP) or the DSS7 Program may also be submitted for approval for transfer credit.

Visiting Students: A person who wishes to enroll for a limited number of credits, but not as a candidate for a degree, may register as a visiting student upon presentation of evidence to an appropriate dean that he or she meets the requirements for admission. Visiting students seeking temporary admission, in order to accumulate credits toward completion of degree requirements at another institution, should have written approval to register for the specific courses from the degree-granting institution. This status is not available to a student dismissed from Indiana Tech for academic or other reasons. Contact the Office of the Registrar for more information.

Veterans: Indiana Tech aids veterans in academic and financial counseling as well as in making available information regarding eligibility and procedures for applying for G.I. Bill educational benefits. Contact the Office of the Registrar for more information.

Admissions
(continued)

International Students

Indiana Tech welcomes student applications from foreign countries. Students from foreign countries will be admitted on the basis of certified credentials verifying completion of preparatory studies and an internet based TOEFL score of at least 70 for undergraduate and 213 for graduate students. Please note, these scores are subject to change as the revised TOEFL is implemented internationally.

We encourage all students to complete their application process and receive acceptance at least one month before the start of their first term. This helps avoid delays in processing, shipping and visa issuance. Please keep challenges such as paperwork delivery, currency exchange, and travel time in mind to ensure your timely start of studies.

A $1,000 tuition deposit is required for matriculation in all programs. This deposit is refundable only if the student is denied a visa. In order to recognize the additional expenses associated with handling, processing and admitting students from foreign countries, Indiana Tech charges a one time processing fee of $250 upon initial enrollment. International students are also required to purchase Indiana Tech's medical insurance.

It is strongly recommended that international students forward a significant sum of money (a minimum of $5,000 USD is suggested) to be applied against tuition, room, board, and other fees in the freshman year. This credit will serve to offset initial delays which often occur in the transfer of funds between the students' country of origin and the United States. The Foreign Student Liaison Officer and admission staff are available for assistance and counseling service.

International Student Regulations

International students entering the United States on student visas must have ample funds to pay for their educational expenses without seeking an employment card to work outside of the university. The United States Immigration and Naturalization Service requires that all individuals with student visas be enrolled on a full-time basis (a minimum of 12 credits each semester) and keep their passports valid for no less than six months. All international students should report to the Admissions Office once they arrive on campus with their I-20 and passport. The university is required to track certain information including entry date, passport numbers, and major field of study. It is the responsibility of each individual student to maintain his or her immigration status and notify INS of any address change that occurs within 10 days. The International Student Advisor assists students by providing travel documents and other forms needed to be in compliance with INS regulations. Forms to assist you in this process are available at the International Student Office.

Non-discrimination Policy

All members of Indiana Tech community (in employment and educational programs and activities) are provided equal opportunities regardless of race, color, national origin, religion, sex, physical or mental disability, medical condition, ancestry, marital status, age, sexual orientation, citizenship, or status as a covered veteran. (Covered veterans are special disabled veterans, recently separated veterans, Vietnam era veterans, or any other veterans who served in active duty during a war or in a campaign or expedition for which a campaign badge has been authorized.)

Indiana Tech is committed to achieving equal education opportunity and full participation for persons with disabilities. In compliance with Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990, the university does not exclude otherwise qualified persons with disabilities, solely by reason of the disability, from participating in university programs and activities, nor are persons with disabilities denied the benefits of these programs or subjected to discrimination.

Academic Regulations

Advising

All student coursework schedules must be approved by an appropriate advisor, who reserves the right to specify individual course sequences consistent with the course prerequisites and term order within the curriculum.

Registration

All students are expected to register on the dates indicated in the academic calendar or the schedule of classes. Students receive assistance from advisors in planning their schedules, and all final schedules must be approved by an advisor.

A student may make necessary adjustments in a schedule during the first five (5) days of the semester. In order to add or drop a course, the student must first obtain the approval of the advisor. To transfer from one section of a class to another requires the approval of the dean of the college offering the course. All forms approving these changes must be submitted to the registrar's office before they become official.

Class enrollment records become official after the fifth class day. A class day is identified as a day, Monday through Friday, on which classes are held in accordance with the official term schedule.

Class Periods And Credit Hours

In the traditional day program, a lecture class period, associated with one hour of credit, is fifty (50) minutes in duration. In courses without laboratories the number of credit hours normally indicates the number of times during the week that the course is scheduled to meet. For example, a three credit-hour course in mathematics is scheduled to meet 150 minutes each week. In some courses, a part of the scheduled time each week is spent in laboratory work.

Eighteen hours is the maximum allowable load. In order to carry 19 hours or more, students must have a cumulative grade point average of 3.30 and the approval of the corresponding dean of the college. Students enrolled in twelve (12) or more credit hours per term are classified as full-time students.

Attendance

There is no system of class cuts at Indiana Tech, and students must attend every meeting of all the classes for which they are registered. Certain absences are permissible with proper written authorization.

Release Of Student Information

The Family Educational Rights and Privacy Act of 1974, with which Indiana Tech complies fully, was enacted to protect the privacy of educational records, to establish the right of students to inspect and review their education records, and to provide guidelines for the correction of inaccurate or misleading statements. Indiana Tech has established the following student information as public or directory information, which may be disclosed by the institution at its discretion:

Student Name
Address
Phone Numbers
University E-mail
Major Field of Study
Current Course Load/Enrollment
Dates and/or Verification of Attendance
Degrees Received
Graduation Date

Students may request that Indiana Tech withhold the release of directory information by notifying the registrar's office in writing Students have the right to file complaints with the Family Educational Rights and Privacy Act Office in Washington, D.C., concerning alleged failure by the university to comply with the Act. Questions concerning the Act should be directed to the registrar's office.

Student Dishonesty

Student dishonesty (cheating or plagiarizing) will not be tolerated in any class at Indiana Tech. Students are encouraged to inform the academic advisors of instances of cheating or plagiarizing.

Cheating: is defined as dishonesty or deceitfulness in order to gain an advantage. Examples are: talking to other students or looking at their work during examinations.

Plagiarism: is another form of cheating. Students are guilty of plagiarism when they present someone else's work as their own. Examples are: asking a friend to write an assignment paper for you, or including portions of material from a book, journal or computer file, without giving appropriate credit to the author.

Penalties: for student dishonesty can include a grade of F in the course. However, if a student believes he or she has been unjustly accused of dishonesty, he or she may follow the Grade Appeal Procedure to request a review of the case.

Undergraduate Grading System

Grades for most of the college credit courses are as follows:

A ..... Excellent, highest possible grade
B..... Good performance
C..... Satisfactory performance
D..... Unsatisfactory but passing
F ..... Failure
W ..... Course withdrawal Assigned within the first 45 days of a term, it has no effect on the student's grade average.
I ..... Incomplete The grade of I (Incomplete) is to be given when a student, through no fault of his or her own, is unable to complete the requirements of a course by the end of the semester. The I will not be given for a course in which a student is definitely failing. In order to receive credit for the course in which an I is given, the student must complete the course requirements by the date specified on the approval for incomplete form or within the first eight weeks of the following semester of enrollment. After the eighth week of the following semester, or after one calendar year for a student who interrupts his or her enrollment, the I will revert to the grade based on work completed to date.

Please note that this policy excludes Independent Study courses. Any deviation from the above rules must receive special permission from the vice president of academic affairs.

A student's grade average is based upon a point system. At the end of each term, students receive official grade reports. A term or cumulative grade average is determined by the following manner:

A 4.00
A- 3.67
B+ 3.33
B 3.00
B- 2.67
C+ 2.33
C 2.00
C- 1.67
D 1.00
F 0.00

1.) Multiply course credit hour value by point value of grade earned in the course.
2.) Add total credit hour values.
3.) Add total point values.
4.) Divide summed point value by summed credit hours.

Grade Reports

The registrar's office will no longer mail paper grade reports unless a copy is requested in writing. Students may view and print their grades online via my.indianatech.edu. If a student requires a printed grade report, a request may be submitted using a Printed Grade Report Request form available at the registrar's office. Printed grade reports will be processed 5 to 7 days after the end of the term. A printed grade report request is effective as long as one is a current student at Indiana Tech.

Freshman Orientation

The freshman orientation begins with a two-day orientation before the start of fall classes. A freshman seminar, University Experience, meets once per week during fall semester.

Freshman College

The Freshman College includes the following new students:

1.) All new freshmen.
2.) All new international students, including transfers.
3.) Domestic transfer students with fewer than twenty-four (24) transfer credits.
4.) Domestic transfer students who are conditionally admitted.

Exempt from the Freshman College will be the following new students:

1.) Domestic transfer students with more than twenty-four (24) transfer credits.
2.) Special or non-matriculated students.
3.) Students in the College of Professional Studies

All freshmen will be assigned to a faculty mentor who will serve as their academic advisor. The following policies apply to Freshman College students:

1.) Students who enter the Freshman College will remain in the Freshman College for a minimum of two (2) semesters.
2.) At the conclusion of the two-semester period, the advisor will review student records and, if warranted, counsel students about the choice of major.
3.) Students with a grade point average (GPA) of less than 1.80 will not exit the Freshman College after two (2) semesters, but will remain in Freshman College until academically eligible to be removed from academic probation. A minimum GPA of 1.80 is required for a student to continue in a given major.
4.) Students must earn at least twenty-four (24) hours of credit toward their degree requirements in order to exit the Freshman College.
5.) The director of the Freshman College will provide support services as appropriate for students who do not exit Freshman College after two (2) semesters.
6.) All policies related to academic probation and dismissal apply to students in the Freshman College. In cases of academic dismissal, students may apply to be reinstated in another academic major. These applications will be considered on an individual basis to determine if continued enrollment is in the best interest of the student and the university.

Academic Honors

An undergraduate student who earns a grade average of 3.5 or higher during any semester is placed on the Academic Honors List in recognition of high academic achievement. No monetary scholarships are awarded to academic honors recipients.

Graduation honors are conferred upon those students who maintain outstanding academic records while attending Indiana Tech. These honors, based on the cumulative grade average in courses completed at Indiana Tech are as follows:

Summa cum laude.....3.90 - 4.00
Magna cum laude.....3.70 - 3.89
Cum laude.....3.50 - 3.69

Grade Appeals

Indiana Tech expects all faculty to adhere to fair grading practices that are explained to students and clearly identified in course syllabi. The right to appeal a grade is provided to give students recourse when they feel a grading policy has resulted in arbitrary treatment that places them at a disadvantage compared to other students taking the class. The student must initiate the grade appeal within the first two weeks of the semester immediately following the term when the grade was issued. The appeal consists of the following process:

- The student is to discuss the concern with the instructor of the course to address the specific grading issues,
- If discussion with the instructor does not resolve the problem, the student is to contact the appropriate dean and present a written record of the appeal and the outcome of the initial meeting with the instructor. The dean will make a determination and inform the student.
- If the student wishes to continue the appeal, the dean will form a faculty review committee comprised of three full-time faculty to evaluate the problem.
- The dean will accept or reject the recommendations of the committee and communicate the decision to the student in writing. If the dean issued the grade being appealed, the vice president of academic affairs will administer the appeal process.

Exchange of F, D, and C- Grades

A system of grade exchange is available which allows students to repeat courses in which a grade of F or D has been earned. The last grade earned is used to calculate the cumulative point average and degree major cumulative average. The following detail regulations apply to the grade exchange:

- No grade exchange will be made unless the student completely repeats the course.
- All grades shall remain on the student's transcript.
- It is not intended that this system of grade exchange shall alter the probation procedures now in effect; specifically, the academic dismissal procedures shall not be postponed to take advantage of this provision.
- The system of grade exchange became effective June 15, 1970, and does not apply to any course taken prior to this date.
- Although a given course may be repeated more than once, by choice or necessity, the grade exchange provision above will apply only the first time the course is repeated.

Class Standing

Freshman.....0 - 29 credit hours
Sophomore.....30 - 59 credit hours
Junior.....60 - 89 credit hours
Senior.....90 or more credit hours

Proficiency Examinations

Proficiency examinations are available for selected courses at Indiana Tech. A proficiency examination is used to establish credit in a course for which credit has not been earned by either transfer credit or attendance in a class at Indiana Tech. A proficiency examination cannot be taken in any course for which a grade has been received at Indiana Tech, or a course that has been audited at the university. Credit in the course is given based on pass/fail. If a student fails a proficiency exam, he or she may not retake the exam. A student who wishes to take a proficiency exam must see their advisor or dean for a list of available exams.

Students may elect to take standardized exams through the College-Level Examination Program (CLEP) or the DANTES program to demonstrate knowledge in specific subject areas. Credit can be earned for what a student has learned through self-study, advanced high school courses and non-credit courses. For a list of available exams and the Indiana Tech equivalent course, visit the Registrar's page at www.IndianaTech.edu. For more information, contact the registrar's office.

Transfer Credit

Transfer credit may be granted for courses completed with grades of C or higher at other accredited colleges or universities. Courses completed at unaccredited institutions or programs will be reviewed on an individual basis, and credit may be granted if evaluation of the institution and the courses indicates that such credit is appropriate.

Transfer credit from accredited colleges or universities will be considered for curriculum-related course work with grades of C or better. An official transcript is required. You also may be required to submit college catalogs, course descriptions, or course syllabi to aid in the university's decision on whether to grant credit.

No more than 30 credit hours can be transferred from non-regionally accredited schools for an associate degree candidate. No more than 60 semester hours can be transferred from non-regionally accredited schools for a bachelor's degree candidate.

If you wish to have previous university-level course work from international studies evaluated for transfer credit, you must have a course-by-course evaluation report completed by one of the following:

- **Global Credential Evaluators, Inc.**
  P.O. Box 36
  28 Westhampton Way
  Richmond, VA 23173
  (804) 639-3660
  www.gcevaluators.com

- **World Education Services, Inc.**
  P.O. Box 745
  Old Chelsea Station
  New York, NY 10113-0745
  (212) 966-6311
  www.wes.org

- **American Association of Collegiate Registrars and Admissions Officers (AACRAO)**
  International Education Services
  One Dupont Circle, NW, Suite 520
  Washington, D.C. 20036-1135
  (202) 296-3359
  www.aacrao.org/credential/index.htm

Undergraduate Graduation Requirements

To be eligible to receive a degree, a student must have earned a cumulative grade point average of at least 2.00 in the courses completed at this university. The student must also have a minimum of a 2.00 cumulative average in all courses taken in the major department.

Students must successfully complete a total of at least 30 credit hours at Indiana Tech in a bachelor's degree program. At least 21 of these 30 credits must be among the last credits completed by the student before graduation. Individual exceptions to the policy can only be made with written approval by the vice president of academic affairs. At least 15 credit hours must be earned at this university as a matriculated student in an associate degree program. No student may receive a transcript or diploma until all financial obligations to the university have been met.

Each student shall be granted a period of five calendar years in which to complete the program requirements which were in effect at the time of first registration. Students requesting additional time shall submit their courses and credits to the corresponding dean for reevaluation under the requirements in effect at the time of their requests.

To prepare for graduation, students must file a Petition for Graduation with the registrar's office. Petitions are accepted when students believe they are within one year of completing the degree requirements. To participate in commencement exercises, students must be within nine (9) hours of degree completion and have registered for those hours during the summer after commencement. Petition deadlines are as follows:

Fall Graduate ..... **October 1**
Spring/Summer Graduate ..... **March 1**

Second Baccalaureate Degree

Students who have received a degree from Indiana Tech or from another accredited college or university may receive a second degree at Indiana Tech. All specified requirements for the second degree must be met, and the program of studies completed for the second degree must include at least 15 credit hours in residence for an associate degree and 30 credit hours for a bachelor's degree beyond those required for the first degree.

Academic Probation

It is expected that each student will strive to maintain the highest academic record. If unable to maintain a cumulative grade average of at least 2.0 (average grade of C), the student is placed on academic probation.

Simple Probation

A student is placed on simple probation when his or her cumulative grade point average drops to less than 2.0 but is equal to or higher than the values in the following table:

Credit Hours Attempted	Cumulative Average
0 – 29	1.5
30 – 59	1.7
60 or more	1.8

Final Probation and Academic Dismissal

A student is placed on final probation if, during 12 credit hours or one semester, his or her cumulative grade point average falls below the values given above or one semester in which a student on simple probation earns a semester average of less than 2.0. A student on final probation earning a semester average of less than 2.0 during 12 credit hours will be academically dismissed from the university.

Academic Dismissal

During the first semester on final probation, the student must achieve a grade point average of at least 2.0 or be subject to academic dismissal. However, if the student continues to maintain a grade point average of 2.0, the student will remain on final probation–satisfactory progress until his or her cumulative grade point average exceeds 2.0.

A transfer student, accepted on probation because of low grades at the previous institution, will be placed on final probation following a term during which the cumulative average falls below 2.0.

A student who is placed on either probation or final probation will remain on such until such time as the cumulative grade point average exceeds 2.0. This status of being on probation of some sort, while maintaining 2.0 term averages, is known as probation/final probation-satisfactory progress. Students who maintain this status prior to reaching a 2.0 cumulative average will be exempt from dismissal due to grades.

A student on final probation will be dismissed following a term in which a semester grade point average is below 2.0. *In addition, any full-time student who receives a 0.0 in any given semester will be academically dismissed for the following semester.* Academic dismissals are reviewed by the Academic Council, whose members are the vice president of academic affairs and the deans of each college. In certain cases, the Council may elect to offer a student immediate reinstatement without having to remain out of school for the normal period of one semester. Such a student will be informed of the required procedures to apply for readmission. A student on academic dismissal for the first time may normally apply for readmission after a period of one term, not including the summer term. Upon readmission, the student will be placed on final probation. A student dismissed for the second time may not apply to that academic major for readmission for at least one calendar year.

Students on final probation may not hold office in any campus fraternity organization, may not participate in intercollegiate athletics, and may be required to live in campus housing unless married or living with close relatives.

Academic Bankruptcy Policy

The academic bankruptcy policy forgives grades and credits for students who have not been enrolled at this university for more than five calendar years. By petitioning and receiving approval from the vice president of academic affairs, all D and F grades would be ignored from GPA calculations but not removed from the transcript. Those courses (or ones of similar content) would need to be retaken and the student would be unable to graduate with honors. The student would be conditionally admitted back into the university (a GPA of 3.0 or higher must be maintained during the first nine hours).

Under this policy, the term "academic bankruptcy" would be reflected on the transcript. This policy will only be granted once during a student's academic career at the university. Implementation of academic bankruptcy at this university does not obligate any other institution to approve or recognize this distinction.

General Education Requirements

Although Indiana Tech has historically focused its academic programs in areas that lead directly to career opportunities, the university also recognizes the importance of providing students with a well-rounded education. The goal of the general education requirements is to provide students pursuing bachelor's degrees with the skills and flexibility they will need to be successful in a rapidly changing world. Our core of general education courses ensures that our graduates have this solid foundation on which to build more specific professional training within the chosen major.

The general education component at Indiana Tech is organized around several desired outcomes. Many of these components are taught across the curriculum (critical thinking skills, creativity, etc.). However, there are also cases where specific courses can be identified which more directly aim toward fulfillment of the identified competencies. In some cases, the specific course required depends upon the degree program that the student is pursuing.

Communication Skills: Three courses required.

- ENG 1250 English Composition I
- ENG 1270 English Composition II
- EGR 2000 Engineering Communication (Engineering) or ENG 2320 Professional Communication

Cultural and Ethical Awareness: Three courses required.

- HUM 2000 Introduction to Humanities, recommended

Technology: One course required.

- MIS 1300 or equivalent or proficiency exam for credit
- Self study option followed by a repeat of proficiency exam.

Mathematical Reasoning: Two courses required

- Note: MA 1000 or test out is prerequisite for MA 1025, credits do not count toward requirement
- MA 1025 or equivalent
- MA 2025 or equivalent

Critical Thinking

- Critical thinking skills should be developed and honed throughout the student's coursework at Indiana Tech
- IIT 1270, may be required by the student's major
- Introduction to Critical Inquiry

Understanding Ourselves and Society: Three courses required.

- PSY 1700 Introduction to Psychology
- Two additional PSY, SS or Personal Finance courses to be determined by major

Science: One of the following courses:

- Physics or Physical Science: PH 1000 Physical Science or equivalent
- Biology: BIO 1000 Introductory Biology or equivalent
- Chemistry: CH 1000 Fundamentals of Chemistry or equivalent
- General Science: SCI 2000 Contemporary Issues in Science or equivalent

General Learning Outcomes

The curricula at Indiana Tech are constructed to assure that students will master the following learning outcomes:

- **Composition and Communication**
  1.) Demonstrate flexible strategies for generating, revising, editing verbal texts.
  2.) Practice appropriate means of documenting work and understand the ethics and legalities of proper documentation.
  3.) Limit errors in surface features as syntax grammar, punctuation, spelling and diction.
  4.) Define and demonstrate conventions of format and structure, and adopt voice, tone, and level or formality to the rhetorical situation.
- **Critical Thinking/Problem Solving**
  1.) Given a problem or situation, identify possible resolutions (hypotheses).
  2.) Assemble sufficient information/data to determine a resolution.
  3.) Determine relevance and reliability of the information gathered.
  4.) Analyze the information gathered so as to identify likely conclusion(s).
- **Quantitative Reasoning: Be able to solve problems that involve:**
  1.) Numeric or arithmetic contexts: estimation and approximation, percents, ratio and proportion, simple and compound interest, simple formulas.
  2.) Conceptual contexts: pattern recognition, symbolizing data, graphing analysis, algebraic expressions, equations, and modeling.
  3.) Algebraic contexts: manipulations of variable expressions, solving equations, exponents, slope and equation of a line, linear equations, simultaneous equations.
  4.) Data representation and chance elements contexts: counting techniques, data distribution, basic statistical measures, elementary probability.
- **Apply Technology**
  1.) Collect and access credible information/data and present it to demonstrate a particular perspective/result.
  2.) Prepare and present information using word processing, spreadsheet, presentation and e-mail software.
  3.) Use specialized software or equipment appropriate to the field.

Assessment Program

Indiana Tech recognizes that it is our responsibility as an institution of higher education to evaluate systematically the academic progress of our students within the context of our institutional mission statement. A comprehensive assessment plan has been instituted to ensure that this evaluation is carried out on a timely basis and that the results of this assessment can be used to continuously improve our educational programs and instruction.

The goal of the assessment plan at Indiana Tech is to enhance further the academic and personal development of our students and to provide a means for continually refining and improving the university.

Commencement

Formal Commencement exercises are held at the close of the spring semester. Students who complete degree requirements during the fall semester will receive degrees at that time. However, these graduates are encouraged to return for commencement exercises the following spring.

Student Services

Career Services

The Career Planning and Development Center (CPDC) at Indiana Tech prepares students and alumni for professional and personal success by providing advising, programs and activities related to self-assessment, career ex-ploration and job search preparation. Services include personal skills/interest inventory assessment and counseling, career exploration, internships, professional development guidance, job fairs, etiquette dinner, networking nights, and an on-campus interviewing program. Employment opportunities are posted for full-time, internship, part-time, and summer job openings.

The CPDC provides extensive guidance and assistance in job search strategies and resources, resume preparation, interviewing skills, mock interviews, and assessing job offers. Guiding students in appropriate professional business practices is an underlying theme for all Career Planning and Development Center services and is designed to provide a foundation for life-long career strategy skills.

Library Services

The McMillen Library is located in Andorfer Commons. The library is named after Dale W. McMillen who donated the first library building on the Indiana Tech campus in 1962. This 10,000-square-foot facility includes the main reading room, library offices, study areas for individuals and groups, a multimedia room, and an archive room. The main reading area includes three computer clusters enabling immediate electronic access to the online catalog, the Internet, and full-text databases. The open book stacks allow easy access to the 30,000 volumes of books and periodicals that make up the library's print collection.

During the school year McMillen Library is open seven days a week with reference service available at all times. Since it is impossible for any library to collect all information, the library operates an interlibrary loan service to enhance the research needs of the students and faculty at Indiana Tech. Other services at McMillen Library include individual and group orientation instruction, a photocopier, computers, laser and color inkjet printers, scanner, and a TV-VCR/DVD.

Information Technology Services

From 1985 when Indiana Tech first required incoming students to have a personal computer, the university began a commitment of making technology an integral part of instruction for our students, Since that time, Indiana Tech continues to commit itself to providing students a level of technological competency that will meet or exceed the needs of employers who hire our graduates. By graduation, depending on the degree program, a student will have competency on various types of computers and soft-ware. Due to the changing nature of technology, our curriculum emphasizes becoming productive with common hardware and software concepts rather than a particular brand of computer or software package.

In order to support this integration and to encourage the use of computing technology, Indiana Tech provides a variety of computing facilities for its faculty and students. With over 230 public computers on multiple campuses, our primary facilities are well equipped for the utilization of technology both in and out of the classroom. Our continuing commitment to technology improvements is an important piece of our academic programs.

IndianaTech.net

IndianaTech.net is an ongoing initiative to provide important cutting-edge technology to all students of Indiana Tech. Some of the services provided through this initiative include (but are not limited to):

- E-mail address for all students
- File storage from on and off-campus
- Discounted software
- Web mail to retrieve e-mail on or off-campus
- Secure personal account to log into campus computers
- Classroom technology improved for instructional purposes
- Wireless access on many of our campuses
- Residential Internet access

This list continues to increase as technology use becomes more pervasive in society and on our campuses. Indiana Tech looks forward to finding new and innovative uses of technology that enhance the academic opportunities for our students.

UNDERGRADUATE COURSE DESCRIPTIONS

Contents

Undergraduate Course Descriptions

The courses described below are listed in numerical order by discipline. All courses are 3 credits unless otherwise noted. If laboratory periods are required they are indicated after the description. For example, the notation "3 plus 1" indicates 3 class periods and 1 lab period per week.

ACCOUNTING

ACC 1010 Accounting Principles
Prerequisite: MA 1000 with grade of C or better.
An introduction to the principles of accounting. The complete accounting cycle is studied for a sole proprietorship. Specifically included are preparation of journal entries, worksheets, financial statements, and a more detailed look at cash, receivables, and fixed assets. 3 credits. (3 plus 0)

ACC 2140 Managerial Accounting
Prerequisite: ACC 1010 with grade of C or better; BA 1200.
Accounting as a decision-making tool with an emphasis on manufacturing enterprises. Decision-making in management is studied along with management reports and financial statement analysis. Specifically included are production costs, breakeven analysis, budgeting, variances, and differential analysis. 3 credits. (3 plus 0)

ACC 2200 Intermediate Accounting I
Prerequisite: ACC 1010 with grade of C or better; MA 1025; MIS 1300.
A review of the accounting cycle focusing on the analysis of accounts and transactions. In-depth coverage of the financial statements and the business operating cycle to include cash, receivables, and inventory. 3 credits. (3 plus 0)

ACC 2240 Intermediate Accounting II
Prerequisite: ACC 2200 with grade of C or better.
A continuation of Intermediate Accounting I. A detailed study of the financing and investment activities of a business. Additional topics include leases, income taxes, pensions, stock options and contingencies. 3 credits. (3 plus 0)

ACC 2300 Intermediate Accounting I
Prerequisite: ACC 2140; MA 1025 with a grade of C or better; MIS 1300.
A detailed study of financial reporting concepts focusing on financial statements and related disclosures. Asset valuation and income measurement are studied extensively, concentrating on cash, receivables, inventories; property, plant and equipment; depreciation, depletion and intangibles. Additional topics include a review of accounting systems and financial statement reporting requirements. 3 credits. (3 plus 0)

ACC 2320 Intermediate Accounting II
Prerequisites: ACC 2300 with a grade of C or better.
A continuation of Intermediate Accounting I. The course is a detailed study of financial reporting concepts focusing on the valuation of liabilities and investments. The reporting of stockholders' equity is also studied, including such topics as contributed capital, earnings per share calculation, and retained earnings. 3 credits. (3 plus 0)

ACC 2340 Intermediate Accounting III
Prerequisites: ACC 2320 with a grade of C or better.
A continuation of Intermediate Accounting I and II. The course covers a variety of special topics including: income measurement, measurement of net assets, accounting for income taxes, post employment benefits, leases, and Statement of Cash Flow. 3 credits. (3 plus 0)

ACC 2400 Cost Accounting
Prerequisite: ACC 2200 with grade of C or better; MA 1025.
Day division students only.
A study of cost accounting by the elements of cost: material, labor, and factory overhead. Job order cost accounting, process cost accounting and standard cost accounting variances for material, labor and factory overhead are developed in-depth. The use of cost information in inventory decisions is covered. 3 credits. (3 plus 0)

ACC 2430 Cost Accounting I
Prerequisite: ACC 2140; MA 1025. CPS students only.
An introduction to cost management systems. Topics include job order, process, and activity based cost accounting. Cost allocation for joint products and by-products is also covered. 3 credits. (3 plus 0)

ACC 2440 Cost Accounting II
Prerequisite: ACC 2430. CPS students only.
A continuation of Cost Accounting I. Topics include standard costing and variance analysis, relevance costing for outsourcing decisions, responsibility accounting, and capital budgeting. 3 credits. (3 plus 0)

ACC 2500 Individual Income Tax
Prerequisite: ACC 2140 with grade of C or better; junior standing.
A study of the concepts of individual taxation and extensive practice in filling out individual Form 1040 and back-up forms. Also included is an introductory study of Partnership Taxation and the filling out of Partnership Form 1065. The concept of tax planning is stressed in every area. 3 credits. (3 plus 0)

ACC 2990 Special Topics in Accounting
Prerequisite: Permission of the dean of business.
Directed study of a special body of subject matter in the field of accounting. This course may be repeated for additional credit. Variable credit.

ACC 3300 Auditing
Prerequisite: ACC 2240 or concurrent enrollment.
A theory course in auditing which considers the necessary procedures in an audit, purposes for which audits are made, internal control standards, generally accepted auditing standard standards, fraud and its detection, independence of the CPA, and presentation of the audit report by the CPA. 3 credits. (3 plus 0)

ACC 3500 Corporate Income Tax
Prerequisite: Junior standing.
A study of the concepts of corporation income taxes. Dividend distribution as controlled by earnings and profits is stressed. A detailed study of tax-option (Sub Chapter S Corporations, LLCs and LLPs) is included. 3 credits. (3 plus 0)

ACC 4700 Advanced Accounting I
Prerequisite: ACC 2240 with grade of C or better.
A study of selected accounting subjects and theory at the advanced level. Topics include business combinations and consolidations, EPS, multinational accounting, and partnership accounting. 3 credits. (3 plus 0)

ACC 4740 Advanced Accounting II
Prerequisite: ACC 4700 with grade of C or better.
The capstone accounting course integrating intermediate, advanced, and taxation topics into a comprehensive learning experience via case analysis. Governmental, not-for-profit, and fiduciary accounting will also be introduced. 3 credits. (3 plus 0)

ACC 4990 Special Topics in Accounting
Prerequisite: Permission of the dean of business.
Directed study of a special body of subject matter in the field of accounting. This course may be repeated for additional credit. Variable credit.

BIOLOGY

BIO 1000 Introductory Biology
A course focused on the basic ideas to enable students to appreciate the living world and their relationship to it. Course includes discussion of cellular and organism biology, genetics, evolution, ecology, and interaction among all living organisms. Lab required. 4 credits.

BIO 1110 Anatomy & Physiology
Introduction to concepts and processes in human anatomy and physiology. This course will focus on the structure and function of various cells, tissues, and organs, of the human body. Special emphasis will be given to the skeletal, muscular, circulatory and respiratory systems. 3 credits. (3 plus 0)

BIO 1140 Medical Terminology
Prefixes, suffixes and word roots used in the field of medicine. Topics include medical vocabulary and terms related to anatomy, physiology, pathological conditions, medical treatments, and rudimentary. 3 credits. (3 plus 0)

BIO 2700 Pathophysiology
Prerequisite: BIO 2710.
This course covers various topics in pathophysiology and examines the biological basis of common clinical disease states. It also looks at how pathophysiological changes in a primary system can impact other body systems. 3 credits. (3 plus 0)

BIO 2710 Human Anatomy & Physiology I
Designed to provide advanced study of mammalian anatomy and physiology. Systems covered include: integument, skeletal, muscular, and nervous. Laboratory required. 3 credits. (3 plus 0)

BIO 2720 Human Anatomy & Physiology I - Lab
Prerequisite: BIO 2710 or concurrent registration.
This lab is designed to accompany the advanced study of mammalian anatomy and physiology lecture. 1 credit hour. (0 plus 3)

BIO 2730 Human Anatomy & Physiology II
Prerequisites: BIO 2710; BIO 2720.
Designed to provide advanced study of mammalian anatomy and physiology. Systems covered include: integument, skeletal, muscular, and nervous. Laboratory required. 3 credits. (3 plus 0)

BIO 2740 Human Anatomy & Physiology II - Lab
Prerequisite: BIO 2730 or concurrent registration.
This lab is designed to accompany the advanced study of mammalian anatomy and physiology lecture. 1 credit hour. (0 plus 3)

BIO 2950 Genetics
Prerequisites: BIO 2710 and BIO 2720.
An introduction to the concepts of genetics. Topics covered include transmission genetics, molecular genetics and population genetics. 3 credits. (3 plus 0)

BIO 3500 Cell Biology
Prerequisite: BIO 2710.
This course covers various topics in cell biology including: membrane transport, cell-cell communication, intracellular trafficking of biological molecules, the cell cycle, intracellular signaling cascades and their receptors, the cytoskeleton, extracellular matrix, cell motility and cancer. 3 credits. (3 plus 0)

BIOMEDICAL ENGINEERING

BME 3100 Bio-Materials
Prerequisites: CH 1230; PH 1300.
The basic mechanical, electrical, optical, thermal, and magnetic properties of engineering materials; structure of matter; crystalline structure and imperfections; environmental effects; selection and application of materials for biomedical prosthetics. 3 credits. (3 plus 0)

BME 3200 Thermodynamics & Fluids
Prerequisites: EM 2020 or concurrent registration; MA 2100.
Energy, entropy, and equilibrium. Introduction to fluid statics and dynamics. Laminar and turbulent flows. The use of equations of motion in the study of fluid flows. Introduction to conduction, convection, and radiation heat transfer. 3 credits. (3 plus 0)

BME 3250 Thermodynamics & Fluids Lab
Prerequisite BME 3200 or concurrent registration.
Experimental studies of fluids at rest and in motion. Experimental studies in the analysis of heat transfer equipment. 1 credit (0 plus 3)

BME 3500 Bio-Kinematics
Prerequisite: EM 2020.
Kinematic and dynamic analysis of mechanisms. Computer-aided kinematic design. Experimental studies of mechanical properties of structural elements and prosthetics. 3 credits. (2 plus 3)

BME 4973 BME Senior Project I
Prerequisites: EGR 2000; senior standing.
The presentation of a creative engineering design solution to a real-world physical problem. The design solution will involve the formal and creative application of mathematics, science, and biomechanical engineering theory. Students will manage project activities in order to produce systems that will be safe, cost-effective, and are technically sound solutions to the problem. Coursework will include: establishing specifications, conceptual system design, subsystem analysis and characterization, equipment sourcing, and the production of technical documentation for the design. Periodic progress reports to the technical advisor are required. 2 credits.

BME 4974 BME Senior Project II
Prerequisite: BME 4973.

The implementation of the design solution prepared in Biomedical Engineering Senior Project I. The course will involve construction and test of the project hardware and software. The project concludes with a hardware demonstration and an oral presentation to faculty and students in the department. Project students will also produce a formal written report. 3 credits. (3 plus 0)

BME 4990 Special Topics in Biomedical Engineering
Prerequisite: Permission of the department chair.

Directed study of a special body of subject matter in the field of biomedical engineering. This course may be repeated for additional credit. Variable credit.

BUSINESS ADMINISTRATION

BA 1200 Foundations of Business

This course provides an introduction to the core disciplines of the business program. You will explore the internal business functions of marketing, management, human resource management, accounting, finance, and operations management. It is the first course in the business administration program. 3 credits. (3 plus 0)

BA 2010 Principles of Management
Prerequisites: BA 1200; ENG 1250.

The student is introduced to the concepts of management theory and practice in this course. A how-to approach for the student of such management functions as planning, organizing, directing, and controlling is presented. 3 credits. (3 plus 0)

BA 2020 Operations Management
Prerequisite: BA 2010; MA 1025.

Design of production systems. Topics include product and service design, location planning, capacity planning, design of facilities and work systems and lean manufacturing concepts. 3 credits. (3 plus 0)

BA 2200 Personal Finance
Prerequisite: Grade of C or better in MA 1025.

A practical understanding of a personal financial plan and the decisions everyone is faced with throughout their lives. Establishing a financial plan, using credit and long-term loans, lease vs. buy decisions for autos and homes, insurance, and investment fundamentals. 3 credits. (3 plus 0)

BA 2410 Human Resource Management
Prerequisite: BA 2010.

Principles and policies followed by management in recruitment, development, direction, and control of personnel. Directed study in current legislation, trends and practices in personnel management. The course presents corporations as integrated units whose differences depend upon the people who work in them and the product efficiency of each unit. 3 credits. (3 plus 0)

BA 2430 International Management
Prerequisite: BA 2010.

The course is an in-depth study of the cultural, economic, political, sociological, and technological differences that exist between various global regions and countries of the world which have an influence on the growth and success of the multinational company. The course covers the planning, the organizing, the staffing, and the managerial control process of the multinational corporation. 3 credits. (3 plus 0)

BA 2500 Marketing
Prerequisites: BA 1200; ENG 1250 (1245).

A general survey of the field of marketing, including its scope and significance, the market for consumer goods, the market for agricultural and industrial goods, marketing policies and practices, and government regulations in competition. 3 credits. (3 plus 0)

BA 2550 Personal Selling
Prerequisite: BA 2500.

The history and current status of personal selling, the various types of salesmanship and their requirements, sales personality development, product analysis, psychology of selling, and sales strategy. Emphasis will be placed on practical demonstration. 3 credits. (3 plus 0)

BA 2600 Occupational Safety & Health
Prerequisite: BA 2010.

The analysis, design, and implementation of safety programs in work settings. Emphasis is placed on developing an understanding of the economic, legal and social factors related to providing a safe and healthful working environment for various occupations. 3 credits. (3 plus 0)

BA 2700 Organizational Behavior
Prerequisite: BA 2010.

Human behavior in organizational settings. Directed study in business organization, and behavior and motivation in groups. Theoretical and experiential study in productivity tasks, communication, and environmental variables, power, leadership and development. 3 credits. (3 plus 0)

BA 2800 E-Commerce
Prerequisite: BA 2010; BA 2500.

This course will provide information about the transactions of goods and services using the World Wide Web. Topics will include product marketing, electronic orders and payments, order fulfillment, and customer service. Legal, privacy, and security issues and e-commerce trends will also be examined. 3 credits. (3 plus 0)

BA 2850 Managing in the Legal Environment
Prerequisite: BA 2010.

This course will present an overview of the legal environment from the perspective of the professional (non-legal) manager. The concentration for this course will be on the main sources of law, the major areas of common law that apply to managers, the major regulatory agencies that influence the management process, and the components of employment law. 3 credits. (3 plus 0)

BA 2990 Special Topics in Business
Prerequisite: Permission of the dean of business.

Directed study of a special body of subject matter in the field of business. This course may be repeated for additional credit. Variable credit.

BA 3110 Project Management I
Prerequisites: BA 2010; MA 2025.

A study of the models and practice of

successful project completion including the management of financials, material resources, communications, and scheduling and tracking systems. Project planning techniques and systems are reviewed. 3 credits. (3 plus 0)

BA 3200 Business Ethics
Prerequisites: BA 2850.
A study of ethical theories and their implications in contemporary corporate philosophy and organizational decision making. Topics include establishing ethical codes of conduct, moral reasoning, and social responsibility. 3 credits. (3 plus 0)

BA 3300 Marketing Research & Decision Making
Prerequisite: MA 2025; BA 2500.
This course will focus on the development and functioning of marketing systems and the formal tools of decision making. Collection techniques and the analysis of data, as viewed in management information systems, will be reviewed with actual applications and case studies. 3 credits. (3 plus 0)

BA 3500 Advertising
Prerequisite: BA 2500.
Consideration is given to the history of advertising, ethics of advertising, consumer makeup, social and psychological influences, the impact of advertising on demand for product and services, pricing, consumer choice, procedures of building actual ads, and media selection and campaigns. 3 credits. (3 plus 0)

BA 3550 International Marketing
Prerequisite: BA 2500.
An analysis of the legal, economic, cultural and political factors affecting multinational marketing provides the focus for this course. A specific examination of identifying opportunities in foreign markets and the problems of pricing, promoting, and distributing products in those markets. 3 credits. (3 plus 0)

BA 3560 Entrepreneurship
Prerequisites: BA 2010; BA 2500; ACC 2140.
A comprehensive review of business opportunities in a free enterprise system with emphasis on small business development. Includes research into the requirements to initiate a small business. 3 credits. (3 plus 0)

BA 3650 Compensation Management
Prerequisite: BA 2410.
This course will focus upon the planning and implementing of a total compensation system, including practical experience in job analysis, salary survey, and the development of a structured pay policy. An environmental study of the effects of compensation on behavior and legal implications of salary grades will also be included. 3 credits. (3 plus 0)

BA 3710 Leadership
Prerequisites: BA 2010; MA 2700 or SS 2720.
A study of the theory and practice of leadership. The history of leadership studies is reviewed along with current research trends and models. Leadership is compared and contrasted with management. Students assess, develop, and present a leadership model that best succeeds in their work/life environment. 3 credits. (3 plus 0)

BA 3800 Labor Relations
Prerequisite: BA 2410.
A study of union-management relations. It focuses on negotiations and administration of labor agreements with emphasis on the development and application of the more significant bargaining issues. It describes the transaction between two organizations: management and the labor union. 3 credits. (3 plus 0)

BA 4010 Quality Management
Prerequisite: BA 2010; MA 2025; junior standing.
A study of various quality control and assurance concepts and their integration into a comprehensive quality management system. Topics emphasized are total employee involvement and teamwork, continuous process analysis and improvement, and the importance of a company-wide focus on customer needs. 3 credits. (3 plus 0)

BA 4500 Purchasing
Prerequisite: BA 2500.
How materials, supplies, and equipment are evaluated for business consumption provides the basis of the course. A step-by-step analysis of the purchasing function from the purchase request to the decision to buy. Included are the principles of vendor evaluation, material management, and procurement. 3 credits. (3 plus 0)

BA 4510 Retailing
Prerequisite: BA 2500.
Designed for those who hope to become managers, owners of retail firms, or representatives of businesses that sell to retailers. It considers the long-range problems of retailers. Cases and text material are used to develop an understanding of problems related to establishing retail stores such as location, layout, buying, pricing, fashion, and retail research. 3 credits. (3 plus 0)

BA 4700 Training & Development
Prerequisites: BA 2410.
Processes, methods, theories, and practices of training and development activities in business settings. Human resources development practices which facilitate learning and change to enhance organizational objectives. 3 credits. (3 plus 0)

BA 4800 Public Relations
Prerequisite: Junior standing.
Study of principles, cases, and problems to facilitate understanding of the philosophies, objectives, and techniques of public relations in companies, corporations, and institutions. An examination of relations with employees, stockholders, consumers, community, educational institutions, suppliers, dealers, and government. The tools of public relations are examined and applied to case problems. 3 credits. (3 plus 0)

BA 4820 Seminar in Human Resource Management
Prerequisite: BA 2410.
The students enrolling in this course will attend the National Convention for the Society of Human Resource Management (SHRM). This class is only offered in the summer sessions. Most conference issues that will be addressed will be globally related, including: sexual harassment, compensation planning, disabilities, flexible workplaces, global education, and legal perspectives,

along with approximately a hundred other topics. In addition, the networking and the trade show will be spectacular. This course is a capstone event that requires membership in the SHRM and the opportunity to become professionally certified. 3 credits. (3 plus 0)

BA 4910 Business Policy & Strategic Planning
Prerequisite: Senior standing and all business core.

This course will focus on strategic planning, environmental analysis, internal analysis, policy formulation, and control methods. Case studies will be used to examine short-term and long-range plans and their consequences. 3 credits. (3 plus 0)

BA 4950 Internship
Prerequisites: Senior standing or permission of the dean of business.

Capstone course in which the student will participate in an actual industry setting as a trainee member of the management team. In addition to work experience, the student will also participate in a seminar program discussing the relationship of principles and theories to actual operations in the industry. 1 to 6 credits.

BA 4960 Project
Prerequisite: Senior standing and permission of the dean of business.

Application of business principles to an extended project. 3 credits. (1 plus 6)

BA 4990 Special Topics in Business
Prerequisite: Permission of the dean of business.

Directed study of a special body of subject matter in the field of business. This course may be repeated for additional credit. Variable credit.

CHEMISTRY

CH 1000 Fundamentals of Chemistry
Co-requisite: MA 1035.

Measurement and units; significant figures; matter and energy; atomic and molecular structure; formulas and equations; chemical bonding; stoichiometry; balancing equations; states of matter; solutions; acids; bases and salts. 3 credits. (3 plus 0)

CH 1100 Chemistry for Changing Times

This is an introductory course in chemistry that presents basic concepts and relates them to current issues in society such as those concerning the environment, foods, fuels, and drugs. This course is intended to help provide the understanding necessary to make informed choices. Not open to engineering majors. 3 credits. (3 plus 0)

CH 1220 General Chemistry & Lab I
Prerequisites: CH 1000 or equivalent; MA 1035 with a grade of C or higher or equivalent.

A quantitative approach to general chemistry; atomic and molecular structures; reactions and stoichiometry; gas laws; thermochemistry; chemical bonding; properties of solutions. Classroom, laboratory and computer activities are integrated. 3 credits. (2 plus 3)

CH 1230 General Chemistry II
Prerequisites: CH 1220.

Chemical kinetics; gaseous and solution equilibria; thermodynamics; metals and their properties, organic chemistry and nuclear chemistry; electrochemistry. 3 credits. (3 plus 0)

COMPUTER ENGINEERING

CPE 3500 Computer Engineering I
Prerequisites: EE 2100 or CS 2100; EGR 1500 or equivalent.

An introductory course in the analysis and design of digital systems. The study of Boolean Algebra as a tool to analyze and synthesize switching networks consisting of logic gates implementing combinational and sequential logic circuits. Use of the LogicAid program for Boolean logic simplification. Karnaugh mapping, and state reduction. (Same as EE 3510 and CS 2200) 3 credits. (3 plus 0)

CPE 3550 Computer Engineering Lab I
Prerequisites: CPE 3500.

Design and implementation of combinational and sequential logic systems. Logic circuits are implemented in prototype using electronic integrated circuits to realize the logic functions. Use of the LogicAid program as a design tool for the digital logic circuits implemented in the laboratory. (Same as EE 3520 and CS 2250) 2 credits.

CPE 3600 Computer Architecture
Prerequisite: CS 2100.

A study of computer architecture from classical to advanced perspectives; characteristics of modern systems such as performance, instruction set design, data paths, pipelining, caching, memory management, I/O, and multiprocessing. Scheduled and unscheduled lab. 3 credits. (3 plus 0)

CPE 3610 Computer Architecture Lab
Co-requisite: CPE 3600.

Construction of a simple processor. Experiments with different computer and memory architectures, I/O and bus systems, and parallel or distributed systems. 1 credit hour. (0 plus 2)

CPE 4150 Digital Signal Processing
Prerequisites: CPE 3550; EE 3150.

Development of both mathematical and intuitive understanding of digital signal processing. LTI systems, analog Fourier transforms, discrete Fourier transforms, and z-transforms are reviewed. Fourier and z-transforms are extended to 2-d. Signal flow graphs help develop an intuitive understanding of digital signal processing. Both IIR and FIR digital filters are studied. 3 credits. (3 plus 0)

CPE 4500 Computer Engineering II
Prerequisites: CPE 3500.

Switching networks and sequential systems, design of synchronous systems, state reduction in incompletely specified systems, synthesis of asynchronous systems, clocked sequential systems. 3 credits. (3 plus 0)

CPE 4550 Computer Engineering II Lab
Prerequisite: CPE 4500.

Introduces finite state machine design and implementation methods such as programmable logic devices, TTL medium scale integrated circuits, and microprogramming. Small digital processors and controllers are implemented as design projects. 2 credits.

CPE 4600 Embedded Systems
Prerequisite: CPE 3600.
Implementation of microprocessors and/or microcontrollers in embedded digital systems. Study of their architecture, operations, and software; and hardware/software design. Scheduled and unscheduled lab. 3 credits. (1 plus 3)

CPE 4710 Senior Project Proposal
Prerequisite: Senior standing.
Development of a proposal for CPE 4720 Senior Project. A complete proposal is properly documented and presented. 2 credits.

CPE 4720 Senior Project
Prerequisite: CPE 4710.
The proposal created in CPE 4710 Senior Project Proposal is implemented, tested, and demonstrated. 2 credits.

CPE 4990 Special Topics in Computer Engineering
Prerequisite: Permission of the department chair.
Directed study of a special body of subject matter in the field of computer engineering. This course may be repeated for additional credit. Variable credit.

COMPUTER SCIENCE

CS 1200 Introduction to Computer Science
A broad based introduction to the field of computer science including topics from both hardware and software history and design. Development of an extensive vocabulary in computer science. Other topics introduced include: binary numbering systems, logic circuits, programming, operating systems, file systems. 3 credits. (3 plus 0)

CS 1250 Problem Solving for Programmers
Course introduces methods and tools used to solve problems using computers. Types and sources of problems computer programmers encounter are explored. Logical algorithm development, pseudocoding, selection, and iterative logic are emphasized. Lab work is performed using Microsoft productivity tools. 3 credits. (3 plus 0)

CS 1300 Computer Science I
Prerequisite: CS 1200; co-requisite: MA 1035.
An introduction to the art and science of software development. Topics include: top-down design, writing requirements and specifications, developing algorithms, coding algorithms in a high level programming language, debugging algorithms and code, basic control structures, and basic data structures. Unscheduled laboratory. 3 credits. (3 plus 0)

CS 1350 Computer Science II
Prerequisite: CS 1300 with grade of C or better.
A continuation of CS 1300. More detailed object-oriented design; more data structures such as linked lists, stacks, queues, binary trees, and heaps; recursion; well known algorithms for searching and sorting; manipulating linked lists and binary trees; hashing. Students will learn to look at data from the perspectives of abstraction, implementation and application. Unscheduled laboratory. 3 credits. (3 plus 0)

CS 2100 Introduction to Computer Systems
Prerequisite: CS 1350.
Computer structure, machine language, data representation, the instruction set, input-output. Symbolic coding and assembly language, addressing techniques, program segmentation and linkage, macros, the assembler, and system organization. 3 credits. (3 plus 0)

CS 2410 Discrete Structures
Prerequisite: MA 1060; CS 1300 or IS 1300.
Induction, Big-Oh analysis and recurrence relations, mathematical aspects of trees, mathematical aspects of sets, relations, graph theory, automata and regular expressions, context-free grammars, propositional and predicate logic. 3 credits. (3 plus 0)

CS 2500 Database Systems
Prerequisite: IS 1300 or CS 1300.
Database management systems. Sequential storage devices. Physical characteristics of and data representation on random access storage devices. Inverted lists, multilist, indexed sequential, and hierarchical file structures. File I/O. Unscheduled laboratory. 3 credits. (3 plus 0)

CS 2990 Special Topics in Computer Science
Prerequisite: Administrative approval.
Directed study of a special body of subject matter in the field of computer science. This course may be repeated for additional credit. Variable credit.

CS 3200 Operating Systems
Prerequisite: CS 2100.
Operating system concepts, problems, and solutions demonstrated by the use of the UNIX operating system. Included: user interface, process control, multiprogramming, deadlock, memory management, virtual memory. 3 credits. (3 plus 0)

CS 3500 Numerical Methods I
Prerequisites: MA 1210; CS 1350 or EGR 1500.
Solution of nonlinear equations, solving sets of equations, interpolating polynomials, and numerical differentiation. Includes error analysis and application of numerical methods on the computer. 3 credits. (3 plus 0)

CS 3550 Numerical Methods II
Prerequisite: CS 3500.
Numerical integration, numerical solution of ordinary differential equations, boundary-value problems and characteristic-value problems, numerical solution of partial differential equations. Includes error analysis and application of numerical methods on the computer. 3 credits. (3 plus 0)

CS 3700 Object Orientation
Prerequisite: CS 1350.
Object oriented methods of design, documentation and implementation. Implementation of examples in a high-level programming language. Polymorphism, inheritance, software reuse are studied and practiced. Students will learn to develop and implement software systems using object oriented techniques. Unscheduled laboratory. 3 credits. (3 plus 0)

CS 3800 Data Structures & Algorithms
Prerequisites: CS 2410; CS 1350.
A study of methods for implementing data structures such as: lists, linked lists, n-ary trees, AVL-trees, b-trees, tries, and

graphs. Study and analysis of well-known algorithms. 3 credits. (3 plus 0)

CS 4000 Computer Science Seminar
Prerequisite: Senior standing or administrative approval.
Study of the current ethical and professional issues in computer science. Student research and seminar presentations are required. 1 credit.

CS 4500 Software Engineering
Prerequisite: CS 3700.
The theory and practice of software engineering. Software development methodologies, object oriented design, data abstraction, the software life cycles. Term project required. Unscheduled laboratory. 3 credits. (3 plus 0)

CS 4600 Organization of Programming Languages
Prerequisite: CS 3700.
Formal language concepts and examples. Data types, structures, and features affecting static and dynamic storage allocation. Language features for program control, procedures, data transfer, block structures, and recursion. Run-time considerations. Interpretive languages. Lexical analysis and parsing. Programming assignments in available languages. 3 credits. (3 plus 0)

CS 4800 Systems Software
Prerequisite: CS 4600.
Software design techniques. Organization and management of software development. Design of assemblers and macroprocessors. Review of lexical analysis and parsing, general compiler design, techniques of machine-independent code generation and optimization. Loader schemes and design. At least one large software project. 3 credits. (3 plus 0)

CS 4900 Theory of Computation
Prerequisite: CS 3800.
Introductory course in theory of computation. Includes the study of finite state automata, context free languages, Turing machines, undecidability and computational complexity. 3 credits. (3 plus 0)

CS 4990 Special Topics in Computer Science
Prerequisite: Administrative approval.
Directed study of a special body of subject matter in the field of computer science. This course may be repeated for additional credit. Variable credit.

CRIMINAL JUSTICE

CJ 1100 Introduction to the Criminal Justice System
A survey of the criminal justice system of the United States. The course will examine broad concepts that guide and direct the system of justice in contemporary society and explore the components of the system: the police, the courts and corrections. 3 credits. (3 plus 0)

CJ 1200 Criminology
Prerequisite: CJ 1100.
This course is an introduction to theory and research on the nature, causes and prediction of criminality and crime. The first section of the course will address spatial and temporal patterns of crime and victimization while focusing on crime rates across communities and demographic groups. The second section of the course will address theoretical explanations of criminality and crime. The primary goals of this course include the following: 1) to provide an understanding of current theoretical developments in the explanation of crime and 2) describe the distribution of both crime and victimization and changes in the rates of crime and victimization. 3 credits. (3 plus 0)

CJ 1300 The Police in America
Prerequisite: CJ 1100.
An examination of the police as a component of the American criminal justice system. Beginning with an exploration of the historical evolution of the police, learners will explore contemporary issues and emerging challenges that face this important unit of social control in our nation. 3 credits. (3 plus 0)

CJ 1400 Corrections in America
Prerequisite: CJ 1100.
Beginning with a historical overview of the America criminal justice system, this class covers the rationale for punishment and the administration and operational aspects of prison and jail functions at the local, state and federal levels. Issues related to probation, parole, community corrections. 3 credits. (3 plus 0)

CJ 2000 Homeland Security
Prerequisite: CJ 1100.
This is a course with a specific focus on issues relevant to homeland security. Topics will include: the evolution of homeland security, understanding terrorism, and current homeland security methods and procedures. Students will be responsible for topics covered both in and out of the text. 3 credits. (3 plus 0)

CJ 2300 Substantive Criminal Law
Prerequisite: CJ 1100.
The evolution of substantive law in America from its British and common-law traditions. The learner's examination of this topic will include the limitations and ambiguity of the substantive law. This course may utilize the Indiana Criminal Code as one model of substantive law and may be taught using the case study method. 3 credits. (3 plus 0)

CJ 2400 Understanding Procedural Law
Prerequisite: CJ 1100.
The development of an understanding of the application of the substantive law from a procedural perspective. There will be a course focus on significant U.S. Supreme Court cases that have described the boundaries of practice for the police, courts and corrections. This course may be taught using the case study method. 3 credits. (3 plus 0)

CJ 2500 Basics of Criminal Investigation
Prerequisite: CJ 1100.
A general theoretical framework for the practice of investigating criminal acts. The components of all investigations; crime scene protocol, collection and preservation of physical evidence, sources of informa-

tion, and interview and interrogation will be among the topics explored. Investigative features of particular crimes (homicide, robbery, rape, larceny, motor vehicle theft, etc.) will also be a focus. 3 credits. (3 plus 0)

CJ 2600 Laws of Evidence
Prerequisites: CJ 1100 ; CJ 2300; CJ 2400.

The law of evidence is the system of rules and standards by which the admission of proof at the trial of a criminal action is regulated. This course includes topics related to the investigation and adjudication process in criminal cases, including collection of evidence and presentation of evidence at arraignments, preliminary hearings, suppression hearings, and trials, with emphasis on types of evidence admissible in a criminal action. This course may be taught using the case study method, with an emphasis on class participation. 3 credits. (3 plus 0)

CJ 3100 A System of Juvenile Justice
Prerequisite: CJ 1100 or HS 1200 for human services majors.

The juvenile justice system in the United States operates in a manner that is slightly different from the adult components of the system. This course will provide an overview of a system that structures the way children are dealt with in regard to delinquency, abuse, neglect and dependency. Methods of addressing the prevention of delinquency and trends in delinquency will also be examined. 3 credits. (3 plus 0)

CJ 3200 Understanding Criminal Behavior
Prerequisite: CJ 1100.

This is a psychology and criminal justice course with a specific focus on criminal behavior using a psychosocial approach. More specifically we will be utilizing psychological, psychiatric and sociological approaches to examine why individuals commit criminal and delinquent acts. 3 credits. (3 plus 0)

CJ 3300 Victimology
Prerequisite: CJ 1200.

This is a course with a specific focus on emerging areas in the field, such as the consequences of victimization and empowering victims. The concentration will be on both traditional and modern approaches to victims' issues and concentrates on issues affecting both victims and victim service providers. The course will follow the general guideline of the text, however, and quite frequently, we will move outside of the text for material. Students will be responsible for topics covered both in and out of the text. 3 credits. (3 plus 0)

CJ 3510 Community-Oriented Policing
Prerequisite: CJ 1300.

This is a course with a specific focus on community-oriented policing and problem solving using criminal justice theoretical based approaches. The course will follow the general guideline of the text, however, and quite frequently, we will move outside of the text for material. Students will be responsible for topics covered both in and out of the text. 3 credits. (3 plus 0)

CJ 3520 Crime Scene Investigation
Prerequisite: CJ 1100.

This is a course with a specific focus on the techniques and methods of crime scene investigation focusing on practical suggestions as well as theoretical viewpoints of the field. Topics include: fundamentals of preliminary investigation, identification, protection, and collection of evidence, sketching and photographing the crime scene, interpreting blood stain evidence, fingerprinting techniques. Students will be responsible for topics covered both in and out of the text and the lab portion of the course. 3 credits. (3 plus 0)

CJ 3530 Restorative Justice
Prerequisite: CJ 3100.

This is a course with a specific focus on restorative justice. A specific focus will be on theoretical roots of the restorative justice movement and methods and practices in the field. Case studies will be used to facilitate student learning. 3 credits. (3 plus 0)

CJ 3620 Forensic Science & Criminalistics
Prerequisite: CJ 2500.

This is a course with a specific focus on the nature and laboratory analysis of physical evidence. Topics include: collection of physical evidence, examination of evidence and the nature of different types of physical evidence. 3 credits. (3 plus 0)

CJ 3700 Ethics & Cultural Diversity in Criminal Justice
Prerequisite: CJ 1100.

This is a course with a focus on ethical theories and their consideration in the field of criminal justice. Specific attention will be paid to the application of these theories and the ethical development of criminal justice practitioners. Topics will also include current ethical issues and their relationship to ethical theories and decisions. Students will be responsible for topics covered both in and out of the text and the lab portion of the course. 3 credits. (3 plus 0)

CJ 4110 Law Enforcement Planning Process
Prerequisite: CJ 3400.

A focus on policy and planning issues in the law enforcement environment. The learner will be exposed to the need for planned change and planned change models. Learners will then be required to identify a problem or law enforcement policy issue and develop a plan to impact that issue. 3 credits. (3 plus 0)

CJ 4120 Death Investigation
Prerequisite: CJ 2500.

This course is designed to briefly cover how to recognize and investigate violent, suspicious or unexpected deaths. The student will learn to develop the essential facts regarding the death scene, medical history and other information that assists in the determination of a person's cause and manner of death. The course will cover the 29 national guidelines set forth by the National Institutes of Justice as essential for a coordinated, efficient and complete death investigation. Basic crime scene investigation techniques will be stressed, along with the importance of crime scene and body evidence, however, this course emphasizes the medical aspects of death investigation and is not designed to be a "homicide seminar." 3 credits. (3 plus 0)

CJ 4130 Probation & Parole Services & Care
Prerequisite: CJ 1400.

The criminal justice system is comprised of three major components: police, courts, and corrections. This course will take an in-depth examination of the community-based strategies of probation and parole from

both a historical perspective and what is currently being utilized today. This examination will explore the duties and objectives of contemporary probation and parole agencies and tracks the progress of an individual through each phase of the community-based systems. 3 credits. (3 plus 0)

CJ 4210 Police Organization & Management
Prerequisites: BA 2010; CJ 3400.

An in-depth examination of the administrative and leadership practices necessary in the operation of a contemporary police organization. In part, this course will demonstrate and discuss the application of modern management theory in the police environment. The focus here is on the operation of an urban police department (100+ officers) and the functional components of such an agency. 3 credits.(3 plus 0)

CJ 4220 Criminal Profiling
Prerequisites: CJ 2500; CJ 3200.

This is a course with a specific focus on criminal profiling utilizing psychological and criminal justice based approaches. The class will concentrate on the processes of identifying personality traits, behavioral tendencies, geographical location and demographic variables of an offender based on characteristics of a crime. 3 credits. (3 plus 0)

CJ 4230 Corrections Counseling
Prerequisites: PSY 1700; CJ 1400.

This is a course with a specific focus on treatment and counseling approaches to offender rehabilitation. The emphasis is on different types of treatment for juvenile and adult offenders. 3 credits. (3 plus 0)

CJ 4320 Fundamentals of Crime Analysis
Prerequisites: CJ 2500; MA 2025.

An overview of the variety of analytical techniques utilized in law enforcement to describe and understand crime patterns and trends as they occur in contemporary society. Exposure to the basic stages of crime analysis: collection of data, the collation of that data, analysis of data, dissemination of data, and feedback and evaluation of the end users of crime analysis data. 3 credits. (3 plus 0)

CJ 4950 Criminal Justice Internship
Prerequisites: Junior standing and CJ 1100; CJ 2100; CJ 2200; CJ 3400. CJ 3100 if internship is in the juvenile justice system.

This internship requires that the student be placed in an active working unit within the criminal justice agencies of greater Allen County or other jurisdictions by agreement of such agencies and the instructional staff of Indiana Tech. The student will be expected to observe and work in this setting and record observations. 40 hours in the work setting will equal 1 credit of academic credit. To receive 3 credits of academic credit the student must work a total of 120 hours.

COMMUNICATION

COMM 1250 Foundations of Communication
Prerequisite: ENG 1250 (co-requisite).

Theoretical foundations of the communication discipline, as well as a survey of the communications field. 3 credits. (3 plus 0)

COMM 1500 Rhetoric & Argumentation
Prerequisite: ENG 1250, ENG 1270 (co-requisite).

Theories and principles of argument, reasoning and debate. Creation and presentation of arguments and the analysis and evaluation of critical thinking. 3 credits. (3 plus 0)

COMM 1600 Introduction to Journalism
Prerequisite: ENG 1270.

Survey of the journalism field; topics include basic aspects of periodical development and publishing, as well as introduction to the journalistic process. 3 credits. (3 plus 0)

COMM 1700 Photography

An introduction to photography and photographic history. Photography basics of camera, film, composition, lighting, digital photography, darkroom and creative photography. 3 credits. (3 plus 0)

COMM 2000 Persuasion & Propaganda
Prerequisite: COMM 1500 or HUM 2730.

Persuasion theories and their application with emphasis on rhetorical and psychological principles. Propaganda as a means of persuasion will be explored by examining various definitions of propaganda, the concept of horizontal and vertical propaganda, the political, social and commercial applications of propaganda, along with the relationship between truth and propaganda. 3 credits. (3 plus 0)

COMM 2100 Introduction to Cinema
Prerequisite: HUM 2000.

A study of film as a mass media. Fundamental elements of film and examination of the social, cultural, political and aesthetical values communicated by film. Critique and analysis of both narrative and documentary film. 3 credits. (3 plus 0)

COMM 2200 On Television
Prerequisite: HUM 2000.

Introduction to the economics, social control and influence of the electronic broadcast media and its industry. Analysis and interpretation of media programs and the impact on our culture. 3 credits. (3 plus 0)

COMM 2500 Public Communication
Prerequisite: ENG 2320.

Principles and practice of effective oral communication. Analysis and evaluation of the speaking-listening process. Preparation in selecting, organizing and delivering messages for various structured public communication settings. 3 credits. (3 plus 0)

COMM 3100 Media Theory & Criticism
Prerequisite: COMM 2000.

Film and television theory; topics include a critical analysis of how film and video construct meaning and how viewers interpret its meaning. An in-depth study of Marshall McLuhan's seminal text, Understanding Media: The Extensions of Man. 3 credits. (3 plus 0)

COMM 3150 Intercultural Communications
Prerequisite: COMM 1250.

Students will identify and explore the relationship between communication and culture. An emphasis will be placed on factors that affect the quality and processes of communication between persons of different cultures and co-cultures. Students will consider various theories and practices regarding issues of intercultural communication. 3 credits. (3 plus 0)

COMM 3200 Writing for Print Media
Prerequisite: COMM 1600.

Basic journalistic formats and strategies used in print media such as the summary lead, the delayed lead, and the conventional news-story format. Throughout, emphasizes economy, clarity, and the development of voice for a given medium. 3 credits. (3 plus 0)

COMM 3250 Media Writing
Prerequisite: COMM 1250.

This course covers the history and development of mass media and their effects on our culture and society including new technologies and how these media interact and/or reinforce each other. Students will develop a critical perspective of cultural values, attitudes, and ethics in mass media industries. 3 credits. (3 plus 0)

COMM 3300 Information Gathering & Reporting Methods
Prerequisite: COMM 3200.

Methodology of inquiry using primary sources, critical thinking skills, fact discrimination, interviewing, listening skills, data collection including electronic methods. Writing of originally researched stories for newspaper organizations. 3 credits. (3 plus 0)

COMM 3400 Writing for Public Relations
Prerequisites: ENG 1250; BA 4800.

Theory and practice of producing publicity tools for various media used in campaigns to promote and interpret personal, institutional and organizational objectives and activities. 3 credits. (3 plus 0)

COMM 3500 Editing & Design
Prerequisites: COMM 3300 or COMM 3400.

Revision of manuscripts to satisfy editorial needs while maintaining accuracy and readability. Design of publications and the tools of layout to meet a variety of design requirements. 3 credits. (3 plus 0)

COMM 4000 Communication Law & Ethics
Prerequisite: COMM 1600 or HUM 3710.

Major legal topics pertaining to the regulation of mass communication, as well relevant ethical issues 3 credits. (3 plus 0)

COMM 4250 Crisis Communication
Prerequisite: BA 4800.

Development of strategic plans and execution of communications related to events that have the potential to generate negative media coverage or unfavorable public opinion. 3 credits. (3 plus 0)

COMM 4750 Applied Communication
Prerequisite: COMM 1250.

Practical experience in communication, such as applied communication research, internship or alternate communications related projects. 3 credits. (3 plus 0)

COMM 4910 Senior Capstone
Prerequisite: Senior Standing.

This course provides an opportunity for a comprehensive review of theoretical concepts with practical application of communication knowledge and skills in a culminating project. 3 credits. (3 plus 0)

EDUCATION

EDU 1000 Introduction to Education

This course provides beginning education students a look into the profession of teaching. Topics include: intrinsic and extrinsic rewards, teaching as a profession, and reform in education, and covers the School of Education's expectations, dispositions, and teaching characteristics. Case studies and vignettes help students understand real world issues in teaching. Other topics to be discussed are diversity, learning styles, and multiple roles of teaching. Students will be taught observation techniques to apply in the mandatory four-hour per week observation placement in a school setting.

EDU 1200 Issues in American Education
Prerequisite: EDU 1000.

This course provides a general introduction to the elementary teaching profession. Class topics also include motivation, status, and preparation of teachers; the K-6 teacher job market; requirements for K-6 teacher certification; professional teaching organizations; governmental policies affecting elementary education; the organization and management of elementary schools; the effects of a growing multicultural society on ele-mentary education; research-based best teaching practices; and the effective use of technology for teaching and learning.

EDU 2010 Educational Psychology
Prerequisite: EDU 1000.

This course applies the principles of psychology to an understanding of the dynamics of teaching behavior and learning behavior. Topics include current psychological theories and research that guides inquiry and decision-making in education. Topics surveyed include behavior, development, cognitive and language development, sociocultural diversity learning, and instruction, including differentiation for learning and assessment. Emphasis is on early and middle childhood developmental needs. 3 credits. (3 plus 0)

EDU 2050 Using Technology as a Tool for Teaching

This course teaches how to develop classroom strategies for integrating computers and their peripherals, instructional software, and tool software into integrated, differentiated lessons. Methods, strategies, concepts, and skills are the focus of the class in lab and authentic educational settings. Emphasis is on lesson plan construction, differentiated instruction and assessment, and creative applications accomplished with off-the-shelf software commonly found in schools. This project-based course seeks to help students understand that teaching with technology is concept and knowledge driven, learner centered, and relevant to multiple contexts and roles. Field experience in local schools required.

EDU 3040 Teaching Methods for Language Arts & Social Sciences

This course is a study of instructional strategies and the design, implementation, and evaluation of language arts and social studies curriculum for early and middle elementary students. The pattern of course topics presented is nature of content knowledge, general pedagogical methods, subject-specific pedagogical methods, and integrated pedagogical methods. Students

will study elementary school social studies standards emphasizing the current social studies curricular content, methods of teaching, and instructional materials that are flexible for differentiation. This is an integrated experience using methods and materials for implementing a total language arts program, including reading in the social sciences in the elementary school. Emphasis is placed on using the language experience approach in teaching listening, reading, spelling, handwriting, grammar, and spoken or written composition as basic skills and assessment of those skills. Language arts methods are integrated with social science content. Diversity within community is emphasized. Structured field work experiences are integrated, with a minimum of 30 clock hours. Course is complemented with an on-site practicum in a local elementary school.

EDU 3050 Teaching Methods for Math/ Science

Prerequisites: All 1000 and 2000 level EDU courses and department approval.

Teaching Methods for Math/Science will prepare future teachers to understand and adapt to the rapid pace of scientific, mathematic, and technological change. Students will be provided blueprints for teaching math and science. The content of this course is aligned with national math and science curriculum standards and includes:

- Grade-appropriate sample lessons and strategies for inquiry-based, problem-based, and cooperative learning;
- Guidelines for creating performance tasks that have real-world applications;
- Methods for using data-based assessment before, during, and after learning;
- A collection of templates, planners, checklists, and graphic organizers; and
- Materials that can be reproduced for classroom instruction.

Experiments, hands-on activities, case studies, vignettes, and projects will enable students both to better understand these areas of study as they relate to real world issues in teaching and to help elementary and middle school students become more creative and en-gaged thinkers and inquirers. In addition, students also will be given specific foci and assignments that will apply to their time spent in the mandatory 60 hours of field work each semester in school settings.

EDU 3100 Introduction to Teaching of Literature

This is an introduction to child and adolescent literature. Classics, contemporary, international, multicultural and modern pieces of literature will be studied. Student will emerge capable of teaching literature using best practices and meeting a variety of diverse student needs.

EDU 3150 Methods of Reading

Prerequisites: All 1000 and 2000 level EDU courses and department approval.

Methods of Reading focuses on enhancing students' metalinguistic awareness and their intuitive use of words, fostering the development of higher mental functions. For future teachers charged with the great responsibility of helping children achieve basic literacy, this course delivers instruction of the fundamentals of literacy in stimulating and engaging ways and helps teachers stir students' imaginations and emotions. This class also focuses on teaching core literacy skills, not only via familiar ideas and experiences, but also by using concepts ranging from fascinating to exotic, from magnificent to weird. By framing the elements of literacy in these additional, unforgettable formats, students more readily internalize and retain material resulting a lifelong love of reading and writing. Course members will also be given specific foci and assignments that will apply to their time spent in the mandatory minimum 60 hours of field work per semester in school settings.

EDU 3200 Teaching Students with Special Needs

This course provides an in-depth examination of individual differences focusing on various exceptionalities within the context of the normal development. Course content will include definitions, general teaching methodologies and using assistive technology, legal aspects, trends and issues, and current research related to individuals with speech and language disorders, learning disabilities, cognitive disabilities, giftedness and creativity, behavioral and emotional disorders, sensory disorders, physical disabilities and/or special health care needs, autism spectrum disorder, and traumatic brain injury. All issues will be discussed in the context of family involvement, cultural and linguistic diversity, and a lifespan focus, including transition. 20 clock hours of field work are required in inclusion elementary classrooms observing and directly working with students with special needs.

EDU 3250 Testing — Assessment for Teaching

Prerequisites: All 1000 and 2000 level EDU courses and department approval.

Testing – Assessment for Teaching will offer students powerful tools for planning and delivering differentiated instruction. Use of data for pre-assessment, formative, and summative assessment to increase student learning will be studied. In addition, case studies, vignettes, and projects will help students understand these areas of study as they relate to real world issues in teaching. Other topics to be studied include instructional strategies to increase student achievement and using data to create a positive classroom climate. Students will also be given specific foci and assignments that will apply to their time spent in the mandatory four-hour-per-week observation placements in school settings, for a semester minimum of 60 hours of field work.

EDU 4000 Behavior Management

Prerequisites: Junior standing and admission into the Teacher Education Program.

This course focuses on the fundamental skills of classroom management and discipline with the intended outcomes of minimizing wasted teaching time and alleviating stress for teachers. Students will learn how to build and sustain effective classroom management routines and discipline plans so as to build classroom structure, promote a sense of community, and establish effective teaching environments. Instructional practices focus on how educators teach students to become independent and successful through interactive learning opportunities. The focus of

motivation is to help teachers assure that their students internalize positive work ethics and values.

EDU 4020 Inclusive Classroom Instruction
Prerequisites: All 1000 and 2000 level EDU courses and department approval.

Inclusive Classroom Instruction will employ proven strategies to insure knowledge of the research base for inclusion; legal considerations; specialized terminology; differentiated instruction, including successful inclusive classroom and curriculum design; instructional strategies and activities; writing and applying individual education plans (IEPs); effective co-teaching; assessing, testing, and grading inclusive students; and communicating with and involving parents of special needs students. Case studies, vignettes, and projects will help students understand these areas of study as they relate to inclusive educational settings. Other topics to be studied include alternative, effective management, discipline, and behavioral techniques for inclusive classrooms. Students will also be given specific foci and assignments that will apply to their time spent in the mandatory minimum of 60 hours of field work in school settings each semester.

EDU 4030 Integrated Methods of Art/PE/ Music/Dance
Prerequisites: Junior standing and admission into the Teacher Education Program.

This course is designed to teach future educators how to develop an integrated elementary PE/health program and teach a variety of health-related physical fitness activities that are based on the National Association of Sports and Physical Education (NASPE) Standards. Individuals will develop personal plans for integrating arts across the curriculum and will acquire skills for effective teaching of arts. Course pedagogy and materials for study of the arts align with International New Teacher Assessment and Support Consortium (INTASC) and Indiana State Standards for Generalist Teachers of Early and Middle Childhood. Integration of the arts into elementary classrooms will enliven curriculum, and, along with participation in health-related physical activity, will motivate and encourage students to incorporate these skills into habits of lifelong learning. The activities included address students at all ability, interest, and skill levels so that teachers can meet the specific needs of the age groups in their classes and assure that their students will benefit from real world experiences and fresh ideas from best practices.

EDU 4040 Curriculum Materials
Prerequisites: Junior standing and admission into the Teacher Education Program.

This course provides step-by-step instruction in the development of skills and resources to create quality, captivating, standards-based curriculum. A wide variety of strategies, materials, research, and resources will be introduced to ensure that class diversity, differentiation, special needs, and strengths are addressed. Students will learn how to effectively prepare and use rubrics, tests, authentic assessments, grade books, forms, etc. Many of the professional issues are addressed that are essential to success, but are often forgotten in teacher education programs, such as retirement planning, liability coverage, parent involvement and conferencing, community relations, collegiality, and professional development.

EDU 4100 School Law

This course provides a practical knowledge of state and federal school law so that future educators can navigate in educational settings with confidence and competence. This course provides an overview of the legal areas in a manner meant to stimulate discussion, promote student interest, and assure a thorough grasp the essential legalities of public school law. Case studies will be reviewed, briefs will be analyzed, and court decision making processes will be presented.

ELECTRICAL ENGINEERING

EE 2050 Overview of Electricity & Electronics
Prerequisite: MA 1060.

An introductory course in electrical science for non-electrical engineering students and computer science majors. The course extends the student's knowledge of electrical components and circuits, network analysis methods, and simple dynamic circuits in DC Transient and AC steady state. This background is then used in the study of transformers, simple semiconductors, op-amps power supplies, oscillators and optoelectronics. RF theory and antennas are introduced; examples of these applications are reviewed and discussed. 3 credits. (3 plus 0)

EE 2100 Circuit Analysis I
Prerequisites: MA 1200 or concurrent registration; PH 2300.

Resistive linear circuits are studied in depth, including dependent and independent sources. The principal topics of study are: node and mesh techniques, source transformations, Thevenin and Norton theorems, the maximum power transfer theorem, and superposition. Inductors and capacitors are introduced as circuit elements, and the time response of first and second-order circuits is developed using ordinary, linear, differential equations. SPICE based circuit simulators, such as Electronics Workbench, are used for DC and transient circuit analysis. 3 credits. (3 plus 0)

EE 3100 Circuit Analysis II
Prerequisites: EE 2100; MA 2100.

Circuits containing resistors, capacitors, self inductance, mutual inductance, ideal transformers, independent and dependent sources are studied using Laplace transform and phasor-domain methods. The course material includes transient and steady-state solutions, network functions, poles and zeros, stability, reciprocity, resonance, complex power, maximum power transfer, frequency response, and simple filters. SPICE based circuit simulators, such as Electronics Workbench, is used for transient and AC steady-state circuit analysis. 3 credits. (3 plus 0)

EE 3150 Signals & Systems
Prerequisite: EE 3100.

Analysis of signals, both continuous and discrete time. Analysis of a system as a

general relationship between input and output. Signals and systems are classified according to their properties. Mathematical techniques, such as difference and differential equations, block diagrams, convolution, Laplace transforms, Z-transforms, Fourier transforms and Fourier series, are used to analyze responses of linear, time-invariant systems to various excitations. Examples are drawn from a variety of disciplines, with emphasis on electrical circuits and filters. Computer programs, such as MATLAB and Electronic Workbench, are used to implement the mathematical techniques studied. 3 credits. (3 plus 0)

EE 3200 Electronic Circuits I
Prerequisite: EE 3100 or concurrent registration.

Introduction to two and three-terminal semiconductor devices including: Junction diodes, bipolar junction transistors, and field-effect transistors. DC analysis of transistor circuits to establish quiescent conditions using analytical and graphical methods. Lumped element models of transistors for small-signal amplifier analysis. Small signal and power amplifier design, temperature and tolerance effects. SPICE based circuit simulators, such as Electronics Workbench, are used to obtain the DC bias, steady-state behavior, and frequency response of transistor amplifiers. 3 credits. (3 plus 0)

EE 3220 Electronic Circuits II
Prerequisite: EE 3200.

Low and high frequency response of single stage and feedback amplifiers. Feedback and stability criteria in amplifiers, regenerative transistor oscillator circuits. Ideal and practical operational amplifiers, analysis, and design of operational amplifier circuits including: computational, signal conditioning, and oscillator applications. SPICE based circuit simulators, such as Electronics Workbench, are used to simulate transistor and operational amplifier circuits including tolerance and temperature effects on the designed circuits. 3 credits. (3 plus 0)

EE 3500 EM Fields & Waves
Prerequisites: MA 2200; EE 3100 or concurrent registration.

The study of electromagnetic fields emphasizing forms of Maxwell's equations of particular interest in engineering applications. The physical sources of electromagnetic fields and vector mathematics are reviewed. A review of static fields precedes the introduction of the concept of quasistatic fields. A brief review of phasor notation from AC circuit analysis is used to introduce time-harmonic electromagnetic fields. Wave solutions are developed for time-harmonic fields. Energy storage, power flow, and impedance are emphasized to provide a foundation for use of these concepts in various electrical engineering areas. 3 credits. (3 plus 0)

EE 3550 Transmission Lines
Prerequisite: EE 3500.

Partial differential equations and complex parameter methods are applied in the study of distributed circuits. Lossless, lossy and high frequency transmission lines are analyzed in the steady state. The Smith-Chart graphical method for line problems is developed and applied to line matching problems. Pulse propagation is examined on a single line and two couple lines. 3 credits. (3 plus 0)

EE 3650 Circuits Laboratory
Prerequisite: EE 3100 or concurrent registration.

Experimental investigations of linear, passive, electric circuits are carried out in this course. Emphasis is placed on the observation of circuit phenomena and the use of experimental instrumentation for circuit characterization. Experiments include: network laws and theorems, driving-point functions, zero-state and zero-input transient response, tuned circuits, frequency response of filter networks, maximum power transfer, matching networks, resistance attenuators, and circuit harmonic response to general periodic excitation functions. 2 credits.

EE 3750 Electronics Laboratory
Prerequisites: EE 3200; EE 3650.

The design and experimental evaluation of electronic waveshaping, amplification, and switching circuits. Emphasis is placed on the characterization and application of two and three-terminal electronic devices in standard electronic sub-systems. Experiments include: junction diodes, zener diodes, voltage regulators and power supplies, bipolar and field-effect transistor characterization, single and multiple-stage amplifiers, operational amplifiers, and oscillators. 1 credit.

EE 4100 Circuit Synthesis
Prerequisite: EE 3100.

This course is an intermediate level treatment of passive and active circuit synthesis. The course material includes: scaling and response normalization, methods of approximation, filter network functions, realizability criteria and PR functions, driving-point synthesis of LC networks, realizability and synthesis of undetermined and doubly-terminated ladder networks, and the active simulation of passive filters with generalized impedance converters. Experimental work includes the design and implementation of high-order filters and their time and frequency-domain characterization with professional test equipment. 3 credits. (3 plus 0)

EE 4150 Digital Signal Processing
Prerequisites: CPE 3550; EE 3150.

Development of both mathematical and intuitive understanding of digital signal processing. LTI systems, analog Fourier transforms, discrete Fourier transforms, and z-transforms are reviewed. Fourier and z-transforms are extended to 2-d. Signal flow graphs help develop an intuitive understanding of digital signal processing. Both IIR and FIR digital filters are studied. 3 credits. (3 plus 0)

EE 4200 Electronic Power Circuits
Prerequisites: EE 3220; EE 3750.

The application of solid state electronics for control and conversion of electric power. The course concentrates on the analysis and application of semiconductor devices to power and control systems. Areas of study include: power semiconductor-diode rectifiers, thyristors (SCRs), bi-polar-junction transistors (BJTs), and metal-oxide-semiconductor field-effect transistors (MOSFETs). Single and three-phase converters and AC voltage controllers, buck and boost

switch-mode regulators, switch-mode AC and DC power supplies and motor speed control. 3 credits. (3 plus 0)

EE 4300 Principles of Communication
Prerequisites: EE 3150; EGR 1500 or equivalent.

The basic principles of waveform representation and spectral analysis are developed through the use of Fourier theory and orthogonal functions. The principles of both analog and digital communications are covered. Both baseband and bandpass signaling techniques are examined in detail. Laboratory experiments are performed in the concurrent Communications Laboratory. 3 credits. (3 plus 0)

EE 4350 Communications Laboratory
Co-requisites: EE 4300.

This laboratory provides experimental support for the material covered in the senior-year communications class. The laboratory includes experiments in the areas of amplitude and frequency modulation, digital signaling, pulse-code modulation, and digital carrier systems. 1 credit.

EE 4400 Electrical Machines
Prerequisites: EM 2020; EE 3500.

The application of electromagnetic theory to electric machine design and operation. Magnetic fields, magnetic circuits, and magnetic energy storage are reviewed. Three-phase power systems are introduced. The principles and operating characteristics of transformers and rotating electrical machines are emphasized. Energy formulations are used to provide a common approach to the study of a variety of AC and DC machines. Laboratory experiments with rotating electrical machines are performed in the concurrent Machines and Controls Laboratory. 3 credits. (3 plus 0)

EE 4450 Machines & Controls Laboratory
Co-requisites: EE 4400; EE 4800. Prerequisites: MA 2430; EGR 2000.

This laboratory provides experimental support for the material covered in the senior-year controls and machines classes. The laboratory covers the measurement and analysis of performance of electric motors and closed loop controls for a servomotor. In each experiment emphasizing motor characterization, the steady state rotation speed, output torque, and electrical-to-mechanical conversion efficiency are measured for a particular type of motor. In each experiment emphasizing servomotor control, a gain in the closed loop (e.g. speed gain of the servoamp-motor-tachogenerator) and a system performance measure (e.g. steady state error) are determined for a particular type of control loop, such as position control or speed control. 1 credit.

EE 4800 Linear Controls
Prerequisites: EM 2020; EE 3150.

The application of signals-system concepts and mathematical techniques to the analysis of linear control systems. Mathematical modeling of electrical, mechanical, and electromechanical systems is reviewed. Interpretation and manipulation of block diagrams for closed loop control systems are introduced. The concepts of Laplace domain transfer functions and root locus diagrams are used as a unifying foundation to which to relate other approaches, such as state space descriptions and Bode analysis. Derivations, calculations, and approximations used to obtain system performance measures, such as stability and steady state error, are emphasized. Laboratory experiments with servo-control mechanisms are performed in the subsequent Machine and Controls Laboratory. 3 credits. (3 plus 0)

EE 4973 EE Senior Project I
Prerequisites: EGR 2000; senior standing.

The presentation of a design solution to an engineering problem. The design solution will involve the formal and creative application of mathematics, science, and electrical engineering theory. Students will aim to produce systems that will be safe, robust, cost-effective, technically sound solutions to the problem. Coursework will include: setting specifications, conceptual system design, subsystem analysis and characterization, consideration of environmental impact, equipment sourcing, and the production of technical documentation for the design. 2 credits.

EE 4974 EE Senior Project II
Prerequisite: EE 4973.

The implementation of the design solution prepared in Senior Project I. The course will involve construction and test of the project hardware and software. The project concludes with a hardware demonstration and an oral presentation to engineering faculty. 2 credits.

EE 4990 Special Topics in Electrical Engineering
Prerequisite: Permission of the instructor and of the dean of engineering.

Directed study of a special body of subject matter in the field of electrical engineering. This course may be repeated for additional credit. Variable credit.

ENERGY ENGINEERING

ENE 2100, 3010, 3020 Energy Engineering Project Sequence
Prerequisite to start: IME 2010; EGR 1710; EGR 2000 (concurrent permitted).

A project-based sequence in which the student becomes involved in an "alternative" energy project. The project is expected to be multi-student, multi-level, with students joining and leaving as they progress through the sequence. A full-time faculty member or an industry representative/adjunct professor will provide the necessary continuity. Examples of possible projects include a windmill or stationary solar panel on campus, a multi-fuel engine, an electric vehicle, or a geothermal system with local industry. Students are expected to contribute hands-on work, literature research, and written documentation. 1 to 3 credits.

ENE 3150 Energy Storage in Fuel Cells & Batteries
Prerequisites: CH 1000; EE 2050.

An introduction to electrochemistry of various primary and secondary electrochemical cells and the chemistry of various fuel cell types. Identification of electrical behavior, environmental impact, and total life cost of each. 3 credits. (3 plus 0)

ENE 3140 Wind & Solar Power for the Electrical Grid
Prerequisites: ME 2050; EE 2050.

An introduction to the operation of the electrical power grid with the dominant generator types in operation. Identification of energy storage and power electronics apparatus required to connect other types of power sources to the grid. Case studies of existing wind and solar power installations feeding the grid, with an explanation of the operational advantages and concerns of each. 3 credits. (3 plus 0)

ENE 3160 HVAC & Geothermal Systems
Prerequisite: ME 2050.

An introduction to a) heating, ventilating, and air conditioning (HVAC) systems, b) heat pumps, and c) geothermal systems. Theory of operation and high-efficiency equipment designs are discussed. Course includes lecture and lab applications. 3 credits (2 plus 3)

ENE 3200 Ethanol & Biofuels Production
Prerequisites: CH 1000; IME 2010.

An introduction to the chemistry and production of ethanol and biofuels. An overview of the biochemistry for ethanol and several biofuels is presented. Ethanol and biodiesel production is emphasized. The design, equipment, operation, and process flows for ethanol and biodiesel plants are examined. Engineering, safety, maintenance, economic, and environmental issues are discussed. 3 credits. (3 plus 0)

ENE 4973, 4974 Senior Thesis I & II
Prerequisites: Senior standing, ACC 2140; EGR 2000; EE 2050; ME 2050.

Capstone courses integrating engineering, economic, societal, and environmental issues. In ENE 4973, a suitable subject is proposed and the issues to be examined are identified. This effort results in a detailed proposal. In ENE 4974, information is gathered and calculations performed to complete the examination of the subject. This effort results in final thesis. While some parts of a thesis might be supported by laboratory work or Energy Engineering Project work, the intent is that a thesis should focus on the national/global energy implications of a particular technical choice. Cross-program project/thesis activities are encouraged. 3 credits each.

ENGINEERING

EGR 1500 Computer Programming for Engineers
Prerequisite: MA 1035 or equivalent.

Engineering problem solving. Fundamentals of C programming. Control Structures and Data Files. Modular Programming with Functions. Arrays. Advanced topics. Review of some basic numerical problem-solving techniques, such as: interpolation, solution of non-linear equations in one variable and solution of systems of linear equations. 3 credits. (3 plus 0)

EGR 1710 Engineering Graphics and Design
Prerequisite: MA 1010 or concurrent registration.

Introduction to the engineering profession and design. Development of the design process and communication skills. Principles of engineering graphics and computer-aided-design. Group projects. 3 credits. (3 plus 0)

EGR 2000 Engineering Communication
Prerequisite: ENG 1270 with a grade of C or better.

This course develops two significant engineering communication skill sets: effective technical writing and effective oral presentations. Each student will create technical documents (such as work instructions and user manuals) and a technical paper suitable for publication in an engineering journal. Throughout the course, students will make oral presentations concluding with software-based capstone presentations of their technical papers. 3 credits. (3 plus 0)

EGR 2600 Materials Science
Prerequisites: CH 1000 or CH 1220; PH 1100 or PH 1300.

The mechanical, electrical, optical, thermal and magnetic properties of engineering materials; structure of matter; crystalline structure and imperfections; environmental effects; selection of materials in design. 3 credits. (3 plus 0)

EGR 2650 Manufacturing Processes
Prerequisite: EGR 2600 or advisor approval.

An introduction to the many processes used in manufacturing. 3 credits. (3 plus 0)

EGR 3110 Introduction to Quality Control
Prerequisites: MA 1025 or MA 1035; sophomore standing.

An introduction to the quality concepts, procedures, and documentation needed to establish an effective quality system. Primary learning outcomes focus on statistical process control and six sigma topics. Projects and computer applications. 3 credits.

EGR 3410 Statistical Quality Analysis I
Prerequisites: MA 1035; sophomore standing.

Cost of quality, problem solving tools, descriptive statistics, normal distributions, and variable control charts. 3 credits. (3 plus 0)

EGR 3420 Statistical Quality Analysis II
Prerequisite: MA 1035; sophomore standing.

Probability theory, discrete distributions, attribute control charts, sampling, statistical tests, regression analysis, analysis of variance, factorial experiments, reliability, TQM, FMEAs, and control plans. 3 credits. (3 plus 0)

EGR 3430 Applied Probability & Statistics
Prerequisite: MA 1100 or MA 1200.

Probability theory, distribution functions, acceptance sampling, normal distribution, chi square distribution, statistical tests, analysis of variance, regression analysis. 3 credits. (3 plus 0)

EGR 3600 CAD I – Parametric Model
Prerequisites: EGR 1710; MA 1035.

This course is based on 3-D CAD modeling procedures including: layers, curves, entities, design features, surface features, and assemblies. Medical device design projects will be the focus. 3 credits. (3 plus 0)

EGR 3700 CAD II including FEA
Prerequisites: EM 3100; EGR 2700.

Develop a working knowledge of finite elements for the design modeling and analysis of engineering components. Students will be presented theory of finite elements and practical applications. 3 credits. (3 plus 0)

EGR 4400 Professional Practice I
Prerequisite: Junior/senior standing.
A study of the concepts and methods required to make design and planning decisions, including capital investment decision making, time-value of money, equivalence, multiple alternatives, replacement criteria, and cost of capital depreciation. Professional engineering ethics and interaction with government, industry, and related agencies. Computer applications. 3 credits. (3 plus 0)

EGR 4450 Professional Practice II
Prerequisite: Junior/senior standing.
The writing and interpretation of engineering specifications. The legal aspects of engineering contracts and the legal and ethical functions of an engineer as a professional in a complex society. 3 credits. (3 plus 0)

EGR 4820 Computer Intergrated Manufacturing
Prerequisite: Junior/senior standing.
Integrates multi-disciplinary technologies through analysis, design and use of Computer Integrated Manufacturing (CIM). Provides an understanding of of automation technology including Computer Numerical Control (CNC), Robotics and Controls, Programmable Logic Controllers (PLC), production economics and optimization of production systems. Hands-on experience with computer controlled equipment included. 2 credits. (1 plus 3)

ENGINEERING MECHANICS

EM 2010 Statics
Prerequisites: MA 1210 or concurrent registration; PH 1300.
Forces and moments of a force; resultants; couples; equivalent force systems; two-and-three-dimensional equilibrium of particles and rigid bodies; centroids; concentrated and distributed loading; trusses; frames; machines; shear and bending moment diagrams; friction; moments of inertia. Computer applications. 3 credits. (3 plus 0)

EM 2020 Dynamics
Prerequisites: MA 1210; grade of C or higher in EM 2010.
This course is intended to give students an understanding of both the theory and applications of engineering mechanics. The topics include: kinematics of particles; kinetics of particles; Newton's laws of motion, energy, momentum; systems of particles; kinematics of rigid bodies; plane motion of rigid bodies; forces and accelerations; energy; momentum. 3 credits. (3 plus 0)

EM 2030 Statics & Dynamics
Prerequisites: MA 1100 or concurrent registration; PH 1100.
Study of forces on bodies at rest and on moving bodies. Vector of algebra, forces in two and three dimensions, free-body diagrams, equilibrium, centroids and centers of gravity, friction, and moment of inertia. Kinematics of particles and rigid bodies, plane motion. Open to Industrial and Manufacturing students only. 3 credits. (3 plus 0)

EM 3100 Mechanics of Materials
Prerequisites: MA 1210; grade of C or higher in EM 2010.
Stress and strain concepts on various planes of a loaded member, principal stresses and Mohr's circle, thin-walled pressure vessels; shear, moments and torsion and resulting stresses; deflections in beams and buckling of columns. 3 credits. (3 plus 0)

EM 3150 Mechanics of Materials Laboratory
Prerequisite: EM 3100 or concurrent registration.
Experimental studies of the mechanical properties of materials and structural elements. 1 credit. (0 plus 3)

EM 3500 Fluid Mechanics
Prerequisites: EM 2020 or concurrent registration; MA 2100.
Fluid statics and dynamics. Laminar and turbulent flows. Use of the equations of motion in the study of fluid flows. Dimensional analysis. Design of pipe networks. Introduction to Boundary Layer Theory. Compressible flow. 3 credits. (3 plus 0)

EM 3550 Fluid Mechanics Lab
Prerequisite: EM 3500 or concurrent registration.
Experimental studies of fluids at rest and in motion. Pressurized and open channel flow. 1 credit. (0 plus 3)

EM 3700 Mechanical Vibrations
Prerequisites: MA 2100; EM 2020.
Undamped and damped, free and forced vibrations, design applications, equivalent damping, transient vibrations, systems with more than one degree of freedom, natural frequencies, principle modes, methods of finding natural frequencies, vibration isolation design. Computer applications. 3 credits. (3 plus 0)

EM 4500 Finite Element Analysis
Prerequisite: EM 3100.
Overview of finite element methodology. Linear 1-D and 2-D elements. Description of finite element software, modeling requirements and techniques, and analysis using general-purpose software. 3 credits. (3 plus 0)

ENGLISH

ENG 1000 Introduction to College Reading
Practice in the use of skills which increase accuracy and speed of comprehension in all types of reading. College credit awarded, but will not be applied toward degree requirements. 3 credits. (3 plus 0)

ENG 1100 Introduction to College Writing
This course teaches elements of standard written English, including grammar, punctuation, and sentence and paragraph building. Students write a number of short essays. College credit awarded, but will not be applied toward degree requirements. 3 credits. (3 plus 0)

ENG 1250 English Composition I
Prerequisite: Placement; grade of C or better in ENG 1000 (if required by placement).
This course is an introduction to expository writing for a variety of aims and audiences. Students learn to write as a process and are briefly introduced to research and proper documentation. 3 credits. (3 plus 0)

ENG 1270 English Composition II
Prerequisite: Grade of C or better in ENG 1250.
This course is an introduction to the writing of researched essays for a variety of aims and audiences. Students analyze rhetorical style, structure, and argumentation, with an emphasis on building critical thinking skills. 3 credits. (3 plus 0)

ENG 2220 Credit for Learning
Prerequisite: ENG 1255 grade of C or better. CPS students only.

Details the process of preparing a portfolio of life and work experiences to be assessed for college credit. Emphasis will be placed on unity, support, organization, sentence skills, and style. 3 credits. (3 plus 0)

ENG 2320 Professional Communication
Prerequisite: Grade of C or better in ENG 1270.

The refinement of verbal and written communication skills for the professional world, with emphasis on applications that develop and synthesize these skills.
3 credits. (3 plus 0)

ENG 2400 Grantwriting
Prerequisite: Grade of C or better in ENG 1270.

Includes information and practice in finding potential sources of grant support, interpreting grant program guidelines, understanding how funding agencies operate charitable giving programs, and properly arranging the components of a typical grant proposal. How to research corporations, private foundations and other funding organizations. Students required to develop an actual grant proposal. 3 credits. (3 plus 0)

ENG 2990 Special Topics in English
Prerequisite: Permission of the dean of general studies.

Directed study of a special body of subject matter in the field of English. This course may be repeated for additional credit. Variable credit.

FINANCE

FIN 3600 Corporate Finance
Prerequisite: ACC 2140.

Financial statement analysis, the concepts of leverage, working-capital practices, cash management, management of marketable securities, inventory financing, stock and bond valuation, cost-of-capital concept, and mergers and acquisitions. International risks, foreign-exchange market, stock dividends, and stock splits. 3 credits.(3 plus 0)

FIN 3660 Working Capital Management
Prerequisite: FIN 3600.

The purpose of this course will be to provide the techniques of working capital management to the students. Emphasizing the management of current assets and current liabilities with particular attention given to planning the firm's overall level of liquidity, stressing cash management, credit policies, profit planning, financial forecasting, accounts receivable, and inventory control. 3 credits. (3 plus 0)

FIN 3680 Capital Structure & Capital Markets
Prerequisite: FIN 3600.

The course has a dual focus: 1) major corporate finance activities inclusive of capital budgeting, capital structuring and restructuring to reduce the firm's cost of capital; 2) the capital markets and the financial institutions that are involved in the capital markets used by CFO to structure and restructure a firm's capital structure. This includes the role of capital markets and financial institutions in the U.S. capital markets including the supply and demand for funds, interest rates and flow of funds analysis. 3 credits. (3 plus 0)

FIN 3700 Mergers & Acquisitions
Prerequisite: FIN 3600.

The course covers the major corporate activities utilizing the growth strategy of mergers and acquisitions inclusive of hostile takeovers, takeover defenses, leveraged buyouts, and management buyouts/buyins. This will utilize case method to examine such issues as corporate valuation, industry and financial analysis, and strategic decision making. Casework represents an integral part of this course and is used to challenge students to structure their own analysis to create shareholder value.
3 credits. (3 plus 0)

FIN 3800 Investments
Prerequisite: ACC 2140.

A course in investments, portfolio theory, and security analysis. The course includes coverage of traditional fundamental analysis, Capital Market Theory, Efficient Markets Hypotheses, and the Capital Asset Pricing Model. The course is intended for those who may manage personal funds, the funds of a corporation, or who may need to raise funds in capital markets. 3 credits. (3 plus 0)

FIN 4600 Seminar in Finance
Prerequisite: FIN 3600; senior standing; and instructor approval.

This course will offer selected topics in finance that will be rotating annually among four primary topic areas of corporate finance: corporate financial management, capital structure/investments, financial institutions, and capital markets. Casework represents an integral part of this course and is used to challenge students to structure their own analysis of the seminar topic. 3 credits. (3 plus 0)

HEALTH CARE ADMINISTRATION

HCA 1100 Introduction to Health Care Administration

Study of the U.S. health care system, its history, organization and functions. Study of the interaction of providers, administrators, and consumers interact in the system.
3 credits. (3 plus 0)

HCA 2100 Legal Aspects of Health Care Administration
Prerequisite: HCA 1100.

Basic knowledge of law as it applies to the health care field. Provides a working knowledge of health law enabling students to deal with common legal, ethical and practical problems facing the industry.
3 credits. (3 plus 0)

HCA 2990 Special Topics in Health Care Administration
Prerequisite: Permission of the dean of business.

Directed study of a special body of subject matter in the field of health care administration. This course may be repeated for additional credit. Variable credit.

HCA 3100 Finance of Health Care Organizations
Prerequisite: HCA 1100; ACC 1010.

Factors and economics of health care organizations. Information concerning insurance, Medicare, Medicaid, government regulations, reimbursement systems, accessibility, budgeting, and human resources. National health insurance and state/local initiatives will be discussed. 3 credits. (3 plus 0)

HCA 3200 Health Care Policy
Prerequisite: HCA 1100; HCA 2100.
Comprehensive overview of major health policy issues. Through examination of governmental and political involvement in the organizations and financing of health care services, the course emphasizes factors influencing policy formation. 3 credits. (3 plus 0)

HCA 4100 Managed Care & Medical Group Practice
Prerequisite: HCA 1100
Focus on managed health care strategies and their relationship to medical group practice management in the constantly changing environment of health care services. 3 credits. (3 plus 0)

HCA 4200 Long-term Care Administration
Prerequisite: HCA 1100.
Study of long-term care centers. Analysis of the various settings such as nursing homes, assisted living, retirement communities, home health care, and adult day care. Issues of finance, access, legality, ethics, human resources, and current topics are addressed. 3 credits. (3 plus 0)

HCA 4950 Health Care Administration Internship
Experiential learning through placement with health care facilities or related organizations. Students are assigned duties and activities involving application of theory, knowledge and skills acquired in related coursework. May enroll more than once and for variable credit.

HUMAN SERVICES

HS 1200 Introduction To Human Services
An overview of the program, philosophies, history, and economics of human and social service agencies. 3 credits. (3 plus 0)

HS 1500 Helping Relationships
Prerequisite: HS 1200.
This course provides the student an opportunity to increase effectiveness in helping people. This course examines the helping process in terms of skills, helping stages, and issues involved in a helping relationship. 3 credits. (3 plus 0)

HS 2000 Human Services Programming
Prerequisite: HS 1200.
Principles and techniques for human services programming, including philosophical foundation, needs assessment, objective writing, program planning, and evaluating methods. 3 credits. (3 plus 0)

HS 2600 Human Services Field Experience
Prerequisites: HS 2000; grade of C or better in IIT 1100.
Actual leadership experience in a human services setting or by participation in an organized human services program. Theory is coordinated with practical experience. 3 credits. (3 plus 0)

HS 4950 Human Services Internship
Prerequisite: HS 2600.
Professional experience in a setting related to the field. The specific work setting and type of responsibilities are determined through consultation with the supervising instructor. Work responsibilities should be professional in nature and should not duplicate the 2600 Field Experience. Approved elective(s) may be substituted for this class. Variable credit with approval of the dean.

HUMANITIES

HUM 2000 Introduction to Humanities
Prerequisite: ENG 1270 or concurrent enrollment for day students; ENG 1265 for CPS students.
Introduction to disciplines in the humanities, including visual art, music, philosophy, literature, and performing arts. 3 credits. (3 plus 0)

HUM 2010 Origins of the Western World
Prerequisite: ENG 1265 or ENG 1270.
Developments in the fine arts and philosophy from the ancient world through the Middle Ages. 3 credits. (3 plus 0)

HUM 2020 Achievements of the Modern Western World
Prerequisite: ENG 1265 or ENG 1270.
Explorations of Western art, music, philosophy, and literature from the Renaissance to the present. 3 credits. (3 plus 0)

HUM 2100 Study Abroad

HUM 2510 Music Appreciation
Prerequisite: ENG 1265 or ENG 1270.
Designed to develop a wider knowledge and enjoyment of music, especially the Western Classical tradition, to encourage appreciation of composers and performers, to enhance intelligent listening to recorded music, and to compare the classical heritage with alternative styles. 3 credits. (3 plus 0)

HUM 2730 Introduction to Philosophy
Prerequisite: ENG 1265 or ENG 1270.
The major philosophic orientations in the study of human culture emphasizing intellectual systems from Classical Greece through the 20th century centering in the development of Western Civilization, and in relation to non-western perspectives evident in global interactions toward the end of the century. 3 credits. (3 plus 0)

HUM 2990 Special Topics in Humanities
Prerequisite: ENG 1265 or ENG 1270.
Directed study of a special body of subject matter in the field of humanities. This course may be repeated for additional credit. Variable credit

HUM 3100 Topics in Philosophy: The Good Life
Prerequisite: ENG 1270 or concurrent enrollment.
This higher-level philosophy course explores both ancient and modern theories of Stoicism, Epicureanism, and Hedonism, all philosophies that offer ontological and ethical considerations of the good life. Using an interdisciplinary approach, students are challenged to examine the question, "What is the proper or most fulfilling way to live life?" 3 credits. (3 plus 0)

HUM 3200 Philosophy of Technology
Prerequisite: ENG 1265 or ENG 1270.
Introduces students to the concept of technology as a philosophical discipline, and explores the role of technology in human culture. The differences between Epistémé and Techné are studied in detail. Various philosophers will be explored. 3 credits.

HUM 3310 Interpretation of Fiction
Prerequisite: ENG 1265 or ENG 1270.
Appreciation of great fiction with the techniques and skills used in writing and interpreting the novel and short story. 3 credits. (3 plus 0)

HUM 3320 Major British Writers
Prerequisite: ENG 1265 or ENG 1270.
An introduction to selected poets, novelists, and dramatists in British Literature. 3 credits. (3 plus 0)

HUM 3340 World Cultures
Prerequisite: ENG 1265 or ENG 1270.
Religious, philosophical, and artistic developments in the non-Western world, with an emphasis on Asia. 3 credits. (3 plus 0)

HUM 3350 Great Books of the Western World
Prerequisite: ENG 1265 or ENG 1270.
Outstanding literature by such writers as Homer, Dante, Shakespeare, and several modern novelists. 3 credits. (3 plus 0)

HUM 3360 African American Literature
Prerequisite: ENG 1265 or ENG 1270.
An introduction to the literature of Americans of black African ancestry. Special attention will be given to major developments in form and themes, major writers, and the evolution of an African-American literary tradition. 3 credits. (3 plus 0)

HUM 3370 Horror in Film & Literature
Prerequisite: ENG 1265 or ENG 1270.
An exploration of the human fascination with horror and the uncanny through close viewing and reading of classic works of literature and film. 3 credits. (3 plus 0)

HUM 3380 Shakespeare in Stratford
Prerequisite: ENG 1270.
This course provides an introduction to selected works of William Shakespeare through both reading his plays and attending important theatrical productions. We shall approach his works primarily in three ways: first, we shall look into Shakespeare's possible attitudes and ideas towards human existence. We might ask such questions as: What is the meaning of life? What is the nature of love? What is the nature of political power? Second, we shall consider how productions adapt the written texts. Third, we shall look closely at his language, especially his use of metaphor and simile. But we must remember that Shakespeare was also a dramatist, a poet who loved the theatre. We shall, therefore, give students the opportunity to design and present two 10-15 minute presentations of a passage from the bard, one before the Stratford Festival and one after the festival. 3 credits. (3 plus 0)

HUM 3710 Ethics
Prerequisite: ENG 1265 or ENG 1270.
Introduction to classical ethical theory; how to adopt ethical perspectives; appreciation for ethical problems with applications for contemporary issues such as euthanasia, hunger and welfare, capital punishment, and corporate responsibility. 3 credits. (3 plus 0)

HUM 3720 Advanced Critical Thinking
Prerequisite: ENG 1265 or ENG 1270.
Evaluation of forms of argument; recognition and detection of argumentative fallacies; deductive and inductive thinking; and an introduction to formal logic structures. 3 credits. (3 plus 0)

INDIANA TECH

IIT 1000 University Experience
Indiana Tech history, campus offices, student procedures, study skills, introduction to campus organizations, and scheduled activities with Freshmen Mentors. Pass/Fail format. 1 credit.

IIT 1050 College Study Skills
Basic strategies, skills, and attitudes needed to be successful in college. Goal setting, time management, test taking, note taking, study techniques, and listening skills are covered. Intended for incoming freshmen. College credit awarded but will not be applied toward degree requirements.

IIT 1100 Professional Development
This course focuses on exploration of career development in students' respective majors. Students will study career options and career ladders in their fields of study and be exposed to discipline conferences; certification requirements; commonly used journals; job opportunities; discipline controversies; resume development; professional standards; and leaders in their fields. This course must be completed prior to enrolling in a practicum or internship for psychology or human services.

IIT 1270 Introduction to Critical Inquiry
Co-requisite: ENG 1270.
This interdisciplinary seminar offers students an introduction to reasoning, problem-solving, and decision-making skills for application in their professional and personal lives. The course includes a study of language and argument. 3 credits. (3 plus 0)

IIT 2000 Pre-Internship Seminar
IIT 2000 is designed for students preparing for an academic credit or non-academic credit internship experience. An internship provides students the opportunity to apply classroom knowledge to real world work situations in a professional environment. Subjects covered will be the following: self assessment of career objectives and internship goals; exploration of resources and techniques for finding and evaluating potential internships; resume and cover letter writing; interview techniques; techniques to maximize learning in an internship; experience record keeping; and communication, conflict resolution and problem solving in the organizational setting. Also covered will be professional dress, workplace ethics, and appropriate behavior. IIT 2000 is a prerequisite for the following courses IS 4950, HS 4950, RC 4950, SM 4950, HCA 4950 and BA 4950 and all non-academic credit internships.

INDUSTRIAL & MANUFACTURING ENGINEERING

IME 2010 Safety Engineering
Prerequisites: BA 2010.
Principles of safety engineering applied to industrial situations. Topics include job safety analysis, accident investigation, personal pro-

tective equipment, fire and electrical safety, facilities and layout. 3 credits. (3 plus 0)

IME 2020 Work Design
Prerequisite: IME 2010.
Motion study practices relating the worker to equipment and environment. Application of the principles of motion economy, time study, use of flow process diagrams, worker-machine charts, micro-motion analysis, time formulas, work sampling, rating, allowances, standard date systems and predetermined time standards. Techniques and procedures for developing and applying the principles of human factors engineering to systems design. 3 credits. (3 plus 0)

IME 2110 Quality Control I
Prerequisites: MA 1035; Sophomore standing.
An introduction to the quality concepts, procedures, and documentation needed to establish an effective quality system. Specific tools include pareto diagrams, cause and effect diagrams, check sheets, histograms, scatter diagrams, run charts, control charts, and process capability. Projects and computer applications. 3 credits. (3 plus 0)

IME 3020 Computer Simulation of Manufacturing Processes I
Prerequisite: EGR 3430.
Computer simulation of manufacturing processes. Systems simulation structure, logic, and methodology using simulation to identify opportunities for process improvement. Application of random numbers and statistical distributions. Importing CAD graphics and other external files into simulation models. Introduction to manufacturing simulation project management. 3 credits. (3 plus 0)

IME 3040 Computer Integrated Manufacturing
Prerequisites: MA 1100; EGR 1710.
A study of the design and use of computer-based integrated manufacturing management systems for the allocation and control of plant, equipment, manpower, and materials. 4 credits.

IME 3060 Advanced Computer Integrated Manufacturing
Prerequisites: EGR 2650; IME 3040.
This course provides a vehicle for students to apply in an open-ended situation the lessons learned in previous courses such as Computer Integrated Manufacturing. The course focuses on automation of flexible measuring cells. The objective is to offer a final training to upper-level students in implementation of computer-based automation helping them prepare themselves for a contemporary, high-tech, manufacturing workplace. 3 credits. (3 plus 0)

IME 3110 Quality Control II
Prerequisite: IME 2110.
An introduction to the quality concepts, procedures, and documentation needed to establish an effective quality system. Specific tools include: gage R & R, control charts for attributes, sampling plans, reliability, cost of quality, and an introduction to TQM. Projects and computer applications. 3 credits. (3 plus 0)

IME 3120 Design of Experiments
Prerequisite: EGR 3430.
A study of how to design experiments and use statistical analysis to determine the sensitivity of the output of a process to changing input parameters. Included are randomized designs, hypothesis testing, analysis of variance (ANOVA) with single factor experiments, randomized Block Design, Latin Square designs, incomplete and complete Block Designs, 2k Factorial Designs, replication, Nested Designs, split-plot design, regression analysis, response surface methods, covariance, and the Taguchi Method. 3 credits. (3 plus 0)

IME 4010 Technical Computer Graphics
Prerequisites: EGR 1710; EGR 2650 or concurrent registration.
Methods of graphical communications as applied to products. Three-dimensional geometry, working drawings, computer graphics. The use of microcomputer hardware and software to increase productivity. Review of ANSI standards; industrial applications of commercially available software. 3 credits. (3 plus 0)

IME 4020 Lean Manufacturing
Prerequisites: IME 2020; EGR 2650.
The study of the principles and practices used to identify and minimize non-value-added activities present in the manufacturing environment. Concepts covered include pull systems, cellular flow, quick change-over, quality at the source, point-of-use storage, 5-S, standardized work, visual control systems, and value of stream mapping. Emphasis is placed on moving from a focus of local optimums to optimizing the entire system. 3 credits. (3 plus 0)

IME 4110 Total Quality Management
Prerequisite: IME 3110.
The examination of various quality control and assurance concepts and their integration into a comprehensive quality management system. 3 credits. (3 plus 0)

IME 4200 Environmental Engineering
Prerequisite: IME 2010.
This course provides students with an understanding of the environmental climate in which manufacturers operate. Concepts covered include: changes in environmental regulations, and understanding of environmental aspects and impacts, pollution prevention, environmental management systems (EMS), and ISO 14000 requirements. Students will also explore the issue of environmental stewardship through life-cycle analysis and design for the environment considerations in product development. 3 credits. (3 plus 0)

IME 4300 Integrated Resource Management
Prerequisites: IME 4020; EGR 3430.
Manufacturing planning from supply through distribution. Concepts include: Supply Chain Management, Economic Order Quantity, Just-in -Time (JIT), MRP,MRP II, ERP, and Distribution Requirements Planning (DRP). Course will include exposure to related software and e-commerce best practices. 3 credits. (3 plus 0)

IME 4950 IME Internship
Prerequisite: Permission of the faculty advisor.
Directed study of IME-related student work experience. Cannot be repeated un-

less approved by the dean. 3 credits. (3 plus 0)

IME 4973 IME Senior Project I
Prerequisites: EGR 2000; senior standing.

The presentation of a creative engineering design solution to a real-world physical problem. The design solution will involve the formal and creative application of mathematics, science, and engineering theory. Students will aim to produce systems that will be safe, robust, cost-effective, and are technically sound solutions to the problem. Students are required to sit for a comprehensive exam over the IME engineering coursework. 2 credits.

IME 4974 IME Senior Project II
Prerequisite: IME 4973.

The presentation of a creative engineering design solution to a real-world physical problem. The design solution will involve the formal and creative application of mathematics, science, and engineering theory. Students will aim to produce systems that will be safe, robust, cost-effective, and are technically sound solutions to the problem. Students must demonstrate knowledge of the information that currently exists in the public domain relative to their project proposal. 2 credits.

IME 4975 IME Senior Project
Prerequisites: EGR 2000; senior standing. CPS students only.

The presentation of a creative engineering design solution to a real-world problem. The design solution will involve the formal and creative application of mathematics, science, and engineering theory. Students will aim to produce systems that will be safe, robust, cost-effective, and are technically sound solutions to the problem. One semester course. 4 credits.

IME 4990 Special Topics in Industrial & Manufacturing Engineering
Prerequisite: Permission of the dean of engineering.

Directed study of a special body of subject matter in the field of industrial and manufacturing engineering. This course may be repeated for additional credit. Variable credit.

INFORMATION SYSTEMS

IS 1100 Introduction to Information Systems

An introduction to information systems with an emphasis on business related computing. Common computer applications are used to support theory. Scheduled laboratory. 3 credits. (3 plus 0)

IS 1150 Principles of Information Systems
Prerequisite: CS 1250 or concurrent registration.

An overview of the field of Information Systems and the technology use to support and run organizations today. This course looks at why information systems are crucial to businesses and what advantages they provide. Students investigate the components of computers and systems, data and information, the Internet, information security, electronic commerce, enterprise systems, systems development, ethics and computer crime. 3 credits. (3 plus 0)

IS 1200 Digital Imaging

An introduction to the technical aspects of digital imaging using Adobe Photoshop. You will learn basic saving methods, selection and retouching tools, be introduced to scanning procedures, layers, masks, and various other aspects of the software. Optimization and image preparation for Web applications also will be covered. The essential skills and concepts gained from this course are relevant to the use of digital imaging in the modern environment and the many commercial applications for which digital imaging is used. 3 credits. (3 plus 0)

IS 1300 Programming I
Prerequisite: CS 1250 with grade of C or better.

Introduction to computer programming with a traditional business language. Emphasis on solving business problems with structured programming. Numerous small programming assignments, weekly scheduled laboratory and unscheduled laboratory. 4 credits.

IS 1400 Visual Communication
Prerequisite: IS 1200.

This course provides an introduction to concepts in visual design and communication. Topics include graphic elements, style, grids, typography, color, organization, proportion and scale. This course also will present common errors made in visual design and practical techniques for correcting these errors. Students will demonstrate the ability to improve the visual quality and effectiveness of user interfaces, and multimedia productions by presenting and evaluating existing and original work to the class. 3 credits. (3 plus 0)

IS 1600 Drawing: Design Reasoning

Drawing is a way of seeing. The objective of this class is to sharpen the student's powers of perception and to improve technical drawing skills. This will be approached through a variety of class exercises and projects that deal with line, space, value, proportion and composition. By the end of the semester the student should be able to use these skills as tools for personal expression and interpretation. 3 credits. (3 plus 0)

IS 1800 Web Multimedia
Prerequisite: IS 1100 or IS 1150 or corequisite CS 1250.

The course will show students how to incorporate graphics, sound and video into Web pages. Topics include: accessibility for disabled readers, standard and animated graphics, popular development tools (such as Adobe Photoshop and Macromedia Flash), safe colors for the Web, and interactive Web pages. The focus of this course is on producing attractive and interactive pages using the capabilities of the Web browser. Weekly scheduled and unscheduled laboratory. 3 credits. (3 plus 0)

IS 2000 Physical Forensics
Prerequisite: Sophomore standing.

This course is intended for students studying criminal justice or information security. An introduction of physical forensics focusing on the recovery and analysis of physical evidence commonly found in criminal investigations. Laboratory experiments will be included. 3 credits. (3 plus 0)

IS 2100 Internet Fundamentals
Prerequisite: IS 1300.

An introduction to the Internet and Web

programming. Topics will include fundamentals of the Internet with existing and evolving technologies. Focuses on Web page development using basic and advanced programming techniques. Weekly scheduled laboratory and unscheduled laboratory. 3 credits. (3 plus 0)

IS 2200 Developing Business Solutions
Prerequisite: IS 1100 or IS 1150; ACC 1010 or OL 3400.
An introduction to solving business problems through the application of information technology. Using spreadsheet and database productivity software students solve problems including inventory management, accounts receivable and payable, payroll, financial analysis, sensitivity analysis, human resource tracking and small application development. Topics such as worksheet formatting, Macro building, financial functions, data and regression analysis, database design, queries and sorting, interface design are covered. 3 credits. (3 plus 0)

IS 2300 Programming II
Prerequisite: IS 1300 or CS 1300.
Introduction to advanced programming techniques. Programs of increasing difficulty implementing business applications. Testing and documentation. 3 credits. (3 plus 0)

IS 2400 Design Fundamentals
Prerequisite: IS 1400.
Students in this course will have an aptitude for the visual arts and/or an understanding of the fundamentals of competent design. The course will review and pursue to a greater depth the structural elements, organizational principles, psychological effects, and communicative functions of two-dimensional art and design. 3 credits. (3 plus 0)

IS 2450 3-D Animation
Prerequisite: IS 2400 or administrative approval.
An introduction to 3D animation using Maya Unlimited. Students will learn 3D modeling, texturing, lighting, and animation techniques used in film production, television, and print. Students will acquire the skills necessary to begin developing their own 3D content using the tools learned, techniques studied, and their own creativity. Scheduled and unscheduled labs. 3 credits. (3 plus 0)

IS 2600 Web Site Design
Prerequisite: IS 2100.
This course looks at the design aspects of developing an interactive Web site. Topics include user population targets, usability issues including federal standards, physical design characteristics, marketing and maintenance, testing and evaluation, and site navigation. Students will develop and test prototype Web sites using hand-coded and an automated framework. Scheduled and unscheduled labs. 3 credits. (3 plus 0)

IS 2900 Web Applications
Prerequisites: IS 2100; CS 2500.
An introduction to the technical and business aspects of web applications. Students will develop and design a web-based software product that meets the long-term requirements of reusability, flexibility, scalability, and reliability. Unscheduled lab. 3 credits. (3 plus 0)

IS 2990 Special Topics in Information Systems
Prerequisite: Administrative approval.
Directed study of a special body of subject matter in the field of information systems. This course may be repeated for additional credit. Variable credit.

IS 3000 Cascading Style Sheets
Prerequisite courses: IS 2100.
This course introduces the design techniques of Cascading Style Sheets to control the appearance of Web and XML documents. Students will define styles, rules and properties, work with CSS objects, control spacing and positioning, specify colors for backgrounds and borders, manage page margins, create external style sheets, optimize performance CSS pages, improve flexibility and readability, and build single-page CSS templates. Markup methods, standards-based strategies, and popular fluid and elastic-width layout techniques are included. Unscheduled lab. 3 credits. (3 plus 0)

IS 3100 Information Security
Prerequisite: Junior standing and pursuing a computer sciences major or minor.
An introduction to the various technical and administrative aspects of Information Security and Assurance. This course provides the foundation for understanding the key issues associated with protecting information assets, determining the levels of protection and response to incidents, and designing a consistent, reasonable information security system, with appropriate intrusion detection and reporting features. 3 credits. (3 plus 0)

IS 3200 Computer Forensics
Prerequisites: NET 1500; IS 3100.
An introduction to the methods and techniques used to conduct a computer forensics investigation beginning with a systematic accumulation of digital evidence. Students will use methods for discovering deleted, encrypted, or damaged file information. A major focus will be on computer forensics tools in the investigator's laboratory, methods of processing crime and incident scenes, and reporting results of the investigations. 3 credits. (3 plus 0)

IS 4000 Cyber Crime
Prerequisites: IS 3200; CJ 3200.
This course focuses on both technical aspects of digital crime as well as behavioral aspects of computer hackers, virus writers, terrorists and other offenders. Students will examine the history, development, extent and types of digital crime and digital terrorism, legislation and law enforcement practices designed to prevent, investigate and prosecute these crimes. 3 credits. (3 plus 0)

IS 4100 Systems Analysis & Design
Prerequisite: Senior standing or administrative approval.
An overview of the systems development life cycle with emphasis on the techniques and tools of system documentation and logical systems specifications. 3 credits. (3 plus 0)

IS 4600 Disaster Recovery
Prerequisite: IS 3100.
This course examines the strategies and activities for limiting the impact to and recovery of information systems, networks,

and data should a disaster occur. Recovery and test plans are developed and analyzed to return mission-critical systems to an optimally secure and functional state. Risk identification and analysis are explored for assets, physical facilities and end-user functions with secure accessibility. Topics include data assurance, information security, project management disciplines, and business continuity planning. 3 credits. (3 plus 0)

IS 4700 IS Senior Project

Prerequisite: Senior standing or administrative approval.

A hands-on exploration of an emerging trend or a new technology in Information Systems. Students will investigate the business, social, and technical aspects of one of the new developing areas by researching, analyzing, designing and building their own solution. Latitude is incorporated into the course so that students can pursue a project not available with previous courses. Case study, in-depth project, and presentation. 3 credits. (3 plus 0)

IS 4800 Technical Project Management

Prerequisite: Senior standing or administrative approval.

Concepts and practical applications including tools and techniques for management of technical projects with emphasis on scope, time, communication, and resources. Topics covered include: task estimating and scheduling, project scope, and resource management. 3 credits. (3 plus 0)

IS 4910 Portfolio I

Prerequisite: Senior standing in Web development program or administrative approval.

This course is a practicum in which students will demonstrate their Web development abilities by creating an advanced Web environment. Each student will create a site of their choosing that demonstrates skills and techniques learned in previous coursework. Projects must be approved by faculty and will be monitored throughout the semester at scheduled times. These projects will represent an array of performance and will become part of the student's portfolio. Portfolios will be critiqued and graded by members of the Web development faculty. 2 credits.

IS 4920 Portfolio II

Prerequisite: IS 4910.

This course is a continuation of IS 4910. 2 credits.

IS 4950 Internship

Prerequisite: Senior standing or administrative approval.

This course combines professional field experience as a member of an organization with classroom topics and principles of information systems. In addition to the work experience, the student also will participate in a seminar program discussing the relationship of previous course work to actual operations in industry. Variable credit.

IS 4990 Special Topics in Information Systems

Prerequisite: Administrative approval.

Directed study of a special body of subject matter in the field of information systems. This course may be repeated for additional credit. Variable credit.

INFORMATION TECHNOLOGY

IT 1010 The Electronic Work Environment I

This course provides a basic understanding of how technology is being used to improve patient care and allow a health care organization to run more effectively and efficiently if used correctly. The course will explore the vision of technology in health care and an overview of the components required to meet that vision. It includes a basic understanding of the network foundation, software application interactions, and regulatory requirements. 3 credits. (3 plus 0)

IT 1020 The Electronic Work Environment II

This course provides an understanding of how technology is changing the workflow of clinicians and how technology is providing a safer patient environment. Students will learn technology terms used in health care, software applications and the need for interoperability. Demonstrations on the software applications that clinicians use to document the care of the patients. Guest speakers explore how technology is affecting health care worker's lives. Understanding of informatics, its history and how the specialty has evolved over the last twenty years. Government initiatives for the Electronic Health Record and the effects to meet federal requirements. 3 credits. (3 plus 0)

IT 1030 Infrastructure & Systems

This course provides an understanding of infrastructures and systems being used today by industry leading health care organizations. In-depth understanding of terminology, network infrastructures, server and workstation hardware/software, the Internet, and security. 3 credits. (3 plus 0)

IT 1040 Information Systems

This course examines the patient record and how technology affects this critical collection of information. From a brief historical perspective to remote access, the course looks at looks at how patient data has been documented through the years to how it is accessed in today in remote facilities such as clinics or physician offices. Relevant issues and opportunities are woven throughout the course. Other topics include regulatory issues and documentation standards. 3 credits. (3 plus 0)

IT 1050 Communications

This course provides a basic understanding of how technology is being used to improve patient care and allow a health care organization to run more effectively and efficiently if used correctly. The course will explore the service center, its functions and an overview of the components required to meet the customer's needs. Students will see demonstrations of connecting basic hardware and how to do basic troubleshooting. Students also will learn through guest speakers and lecture about effective communication, customer service, teamwork, certification, information gathering process; complaints are opportunities and some software tips and tricks. 3 credits. (3 plus 0)

LIFE AND HEALTH SCIENCES

LHS 1100 Introduction to Dance
Fundamental principles and techniques of a variety of dance forms, including but not limited to ballet, jazz, modern, African, improvisation, and hip-hop. Enrollment preference will be given to dance minors. 3 credits. (3 plus 0)

LHS 2100 First Aid in Fitness Settings
Upon completion of the course, students will earn certification in American Red Cross CPR/AED for the Professional Rescuer and First Aid. Course concentrates on injuries that occur in the fitness realm. 3 credits. (3 plus 0)

LHS 2110 Principles of Fitness & Nutrition
Course focuses on the values of physical activity, assessing fitness needs, measuring results, and the relationship between nutrition and health. Experience is gained through participation in vigorous physical activity including jogging. 3 credits. (3 plus 0)

LHS 2120 Care & Prevention of Athletic Injuries
Introductory course for athletic training minors. Topics include the prevention, evaluation, and initial care of athletic injuries. 3 credits. (3 plus 0)

LHS 2500 Dance History
Focus on the history of dance since the 16th century. Emphasis on ballet, jazz, tap and modern dance. Enrollment preference will be given to dance minors. 3 credits. (3 plus 0)

LHS 2510 Modern Dance Technique
Through exploration and technical guidance, students will learn fundamental movement skills enhancing their ability to move with fluidity while developing a deeper awareness of expression through movement. Techniques are based on the Bill Evans Technique and influenced by Bartenieff Movement Fundamentals. Enrollment preference will be given to dance minors. 3 credits. (3 plus 0)

LHS 2520 Ballet
Focus is on the vocabulary and principles of ballet. Enrollment preference will be given to dance minors. 3 credits. (3 plus 0)

LHS 3100 Introduction to Physiology of Exercise
Prerequisite: BIO 1110.
Study of the major physiological systems of the human body and its acute and chronic responses to exercise. 3 credits. (3 plus 0)

LHS 3200 Strength & Weight Training
Teaching and training methods, analysis of current training techniques, and error detection, physical adaptations related to strength and power training. Discussion on how to design comprehensive long term training based on scientific foundations. 3 credits. (3 plus 0)

LHS 3210 Principles & Philosophy of Coaching
Focus on the philosophies, strategies, and tactics of coaching. Social and psychological issues of coaching are stressed. 3 credits. (3 plus 0)

LHS 3300 Therapeutic Modality in Athletic Training
Prerequisite: LHS 2120.
An investigation of the theoretical and technological basis of sports injury management and therapeutic modality application. 3 credits. (3 plus 0)

LHS 3400 Methods in Fitness Exercise Instruction
Teaching and evaluating a variety of group exercise sessions, including, slide, bench, and circuit training and use of resistance equipment. 3 credits (3 plus 0)

LHS 3410 Fitness Testing & Interpretation
Provides a knowledge base and practical experiences in fitness testing, assessment, and exercise programming. 3 credits. (3 plus 0)

LHS 3500 Modern Dance Technique II
Prerequisite: LHS 2510.
Advance study of fundamental movement skills. Continued depth of development in the Bill Evans Technique and Bartenieff Movement Fundamentals. Technical skills are augmented with theoretical study of anatomy and kinesiology as related to dance and body movement. Enrollment preference will be given to dance minors. 3 credits. (3 plus 0)

LHS 3510 Improvisation
Instruction and development of basic movement improvisation skills including contact improvisation, creative movement and action theatre. Enrollment preference will be given to dance minors. 3 credits. (3 plus 0)

LHS 4200 Coaching Practicum
Prerequisite: Coaching minor.
Students will receive practical supervision in all facets of coaching. Students must demonstrate a variety of typical functions of coaching for the sport of their choice. 3 credits. (3 plus 0)

LHS 4300 Biomechanics of Physical Activity
Prerequisite: BIO 1110.
A study of human motions, noting bones, joints, and muscles that are involved and the mechanical conditions under which work is accomplished. 3 credits. (3 plus 0)

LHS 4350 Athletic Training Practicum
Prerequisite: LHS 3300.
For students wishing to continue their study of athletic training at an entry-level curriculum. Course consists of structured on- and off-campus clinical observation. Students also will be required to demonstrate proficiency on selected athletic training skills. 3 credits. (3 plus 0)

LHS 4400 Certification Seminar
Guided study in the various certification processes. Students will study current topical issues and sit for appropriate certifications for their interest area. 3 credits. (3 plus 0)

LHS 4450 Personal Fitness Trainer Practicum
Prerequisite: Personal fitness coaching minor.
Students will receive practical supervision in all facets of fitness training at a gym

or wellness center. Students must demonstrate a variety of typical functions of training. 3 credits. (3 plus 0)

LHS 4500 Principles of Choreography
Prerequisites: LHS 2510; LHS 3510.

Introduction of the compositional elements including repetition, and space design. Students will create and participate in creating and choreographing solo and small group dances. Enrollment preference will be given to dance minors. 3 credits. (3 plus 0)

LHS 4510 Dance Pedagogy
Prerequisites: LHS 2510; LHS 3510; LHS 4500.

Teaching methods and class planning for creative movement curriculum for a variety of ages. Enrollment preference will be given to dance minors. 3 credits. (3 plus 0)

MANAGEMENT INFORMATION SYSTEMS

MIS 1300 Software Tools

This course studies a variety of office suites packages which include word processing, spreadsheets, presentations and office automation features. Emphasis is on document and spreadsheet usage and contrasting features of each platform. 3 credits. (3 plus 0)

MIS 1500 Computer Systems & Hardware

This course prepares students to effectively manage a variety of hardware issues, such as installation, configuration, upgrading, diagnosing, troubleshooting, safety, preventative maintenance, the principles of motherboards, processors, and memory in microcomputer systems. 3 credits. (3 plus 0)

MIS 2100 Networking & Infrastructure
Prerequisite: MIS 1300, MIS 1500.

A survey of network and telecommunications design as they relate to information systems. Topics include hardware, voice, data, video, and digital wireless infrastructure technologies. 3 credits. (3 plus 0)

MIS 2150 Component Analysis & Design
Prerequisite: MIS 2100.

Continuation of MIS 2100. Application of networking technologies as they relate to business environments. Analyze and design a network topology for a new environment and an existing structure with emphasis on compatibility. 3 credits. (3 plus 0)

MIS 3000 Programming Logic
Prerequisites: MIS 2100; MIS 2150.

Effective development and documentation of logic structures are reviewed for usage in file management utilizing perspectives of sequence, selection, iteration, and modular programming. 3 credits. (3 plus 0)

MIS 3100 Database Management
Prerequisites: MIS 2100; MIS 2150.

This course emphasizes relational database development, usage, and control with exposure to a variety of end user and managerial programs for utilization in a professional environment. Related topics also include normalization and conceptual design using entity relationship diagramming. 3 credits. (3 plus 0)

MIS 3150 Database Applications Development
Prerequisite: MIS 3100.

This course emphasizes database application development within multi-tier systems, emphasizing the development of front-end user-interfaces. The course is also an introduction to Structured Query Language (SQL). 3 credits. (3 plus 0)

MIS 3200 Web Applications & the Internet
Prerequisite: MIS 2100; MIS 2150.

The course presents strategic and operational uses of the Internet and the World Wide Web by business organizations. Packaged software is used to design a Web site and develop Web pages. Ongoing management issues are addressed for maintaining a dynamic Web site. 3 credits. (3 plus 0)

MIS 4000 Enterprise Resource Planning
Prerequisite: MIS 3000, MIS 3100; MIS 3200.

ERP systems provide the foundation for a wide range of e-commerce based processes including web-based ordering and order tracing, inventory management, and built-to-order goods. This course examines the pros and cons of ERP systems, explains how they work, as well as the issues related to system selection, design and implementation. 3 credits. (3 plus 0)

MIS 4200 Systems Analysis & Design
Prerequisite: MIS 1300; MIS 1500.

An overview of the system's development life cycle with emphasis on techniques and tools of system documentation and logical system specifications. Concepts covered include detailed analysis of information systems project initiation. 3 credits. (3 plus 0)

MIS 4400 MIS Project Management
Prerequisite: MIS 3100.

This course covers the components of successful project completion including scope, financials, resources, milestones, tracking, and communications. Project-planning software will be utilized to apply theoretical concepts and review documentation. 3 credits. (3 plus 0)

MATHEMATICS

MA 1000 Foundations of College Mathematics

Topics include computation with integers and rational numbers using correct order of operations, ratio, proportions, percent concepts and solving equations involving percentages. Other covered topics are perimeter, area, volume, exponents, simple roots, simplifying and solving equations and inequalities with one variable. Graphing lines using slope and y-intercept is taught as well as collecting, analyzing, and displaying data. Problem solving is integrated throughout and appropriate use of calculators is expected. 3 credits. (3 plus 0)

MA 1010 Basic Algebra
Prerequisite: MA 1000 with a grade of C or higher or equivalent.

Real numbers, algebraic expressions, basic rules of algebra, ratios and proportions, exponents (including negative exponents and rational exponents), radicals, formulas, Cartesian plane, distance between points, midpoint of a line segment, polynomials, operations on rational expressions, and solving linear equations and inequalities (in one variable). This course may not be applied toward degree requirements. 3 credits. (3 plus 0)

MA 1025 Mathematical Problem-Solving
Prerequisite: MA 1000 with a grade of C or higher or equivalent.
Topics in algebra include addition, subtraction, multiplication, and division of variable expressions, solving equations, exponents, slope and equation of a line, and roots of integers. Solving and applying linear equations and simple exponential equations is studied. Solving simultaneous equations, systems of equations with multiple variables as they relate to business applications, and finance involving borrowing and saving money. Throughout the course, word problems and appropriate technology is emphasized. 3 credits. (3 plus 0)

MA 1035 College Algebra
Prerequisites: MA 1010 with a grade of C or higher or equivalent.
Real numbers, and algebraic expressions, functions and graphs, equations and inequalities, systems of equations and inequalities, exponential and logarithmic functions, and complex numbers. 3 credits. (3 plus 0)

MA 1040 Finite Mathematics
Prerequisite: MA 1035 with a grade of C or higher or equivalent.
Set theory, coordinate systems and graphs, linear programming (geometric approach and algebraic approach), matrices and linear systems, permutations and combinations, probability, statistics, mathematics of finance. 3 credits. (3 plus 0)

MA 1060 Trigonometry
Perquisite: MA 1035 with a grade of C or higher or equivalent.
Basic concepts of trigonometry, trigonometric functions, trigonometric identities and equations, and applications of trigonometry. 3 credits. (3 plus 0)

MA 1100 Applied Calculus I
Prerequisite: MA 1035 with a grade of C or higher to equivalent.
Functions and graphs, limits, differentiation, curve sketching, exponential and logarithmic functions, antidifferentiation and integration. 3 credits. (3 plus 0)

MA 1110 Applied Calculus II
Prerequisite: MA 1100 with grade of C or higher or equivalent.
Integration, series, multivariable calculus, differential equations. 3 credits. (3 plus 0)

MA 1200 Calculus I
Prerequisites: MA 1035 and MA 1060 with grades of C or higher in both or equivalent.
Functions, limits, continuity, derivatives, inverse functions, derivatives of exponential and logarithmic functions, derivatives of inverse trigonometric functions, L'Hopital's rule and indeterminate forms, analysis of functions and their graphs, and applications of the derivative. 4 credits. (4 plus 0)

MA 1210 Calculus II
Prerequisite: MA 1200 with a grade of C or higher or equivalent.
Integration, applications of the definite integral, principles of integral evaluation, mathematical modeling with differential equations, and infinite series. 4 credits. (3 plus 0)

MA 1300 Calculus & Numerical Methods I
Prerequisite: MA 1035; MA 1060 with a grade of C or better.
Students will be introduced to the derivative and how it can be used to measure the rate of a dynamic process. Further applications of the derivative including optimization, linear approximations and related rates will be examined in some detail. Beginning topics of numerical analysis will be covered in the form of root finding algorithms for non-linear equations. 4 credits. (4 plus 0)

MA 1310 Calculus & Numerical Methods II
Prerequisite: MA 1310.
Integral calculus will be covered in great detail. Topics will include evaluating indefinite and definite integral using basic rules, substitution techniques, tables of integral formulas and computer algebra systems. Methods of numerical integration will be examined with emphasis being placed on the efficiency of these methods and when the only method to solving a problem is a numeric one. Infinite series, particularly the determination of convergence will be investigated. 4 credits. (4 plus 0)

MA 2025 Statistical Problem-Solving
Prerequisite: MA 1025 with a grade of C or higher or equivalent.
This course will include basic statistical terminology, mean, median, and mode. In addition, standard deviation, variance, normal distribution, probabilities (permutations & combinations) is covered. Additional topics include regression analysis, confidence intervals, hypothesis testing, and solving applied problems. 3 credits. (3 plus 0)

MA 2100 Differential Equations & Linear Algebra
Prerequisite: MA 1210.
First order differential equations, second-order and higher-order linear differential equations, and systems of differential equations, Laplace transforms, and Fourier series. Operations involving matrices, multiplication, transposition, and matrix inversion. Systems of linear equations; Gauss elimination and Cramer's rule. 4 credits. (4 plus 0)

MA 2150 Linear Algebra
Prerequisite: MA 1110 or MA 1210 with a grade of C or higher.
This course includes the study of matrices, systems of linear equations, determinants, vectors in the plane and space, vector spaces, linear transformations, inner products, eigenvalues and eigenvectors. Also, various applications of linear algebra will be explored. 3 credits. (3 plus 0)

MA 2200 Calculus III
Prerequisite: MA 1210.
Analytic geometry, coordinate systems in 3-dimensional space, lines, planes, and other surfaces in 3 dimensions, vectors, vector-valued functions, partial derivatives, multiple integrals, and topics in vector calculus. 3 credits. (3 plus 0)

MA 2300 Differential Equations
Prerequisites: MA 2150 (C or higher); MA 1310 or CS 3500 (C or higher) or permission of the instructor.
Differential equations and their applications will be explored in this course. The mathematical model will be at the core of the topics studied such as population dynamics, electrical circuits, string vibration, and visual perception. The tools necessary to explore these applications include First, Second and higher order differential equations, Laplace transforms and systems of differential equations. Quantitative methods such as Euler's and higher order methods will be used to solve problems

when analytic methods fail. Boundary value problems will also be explored using the shooting method and the method of finite differences. (3 credits)

MA 2430 Probability & Statistics for Engineers
Prerequisite: MA 1110 or MA 1210.

Introduction to the theory and engineering application of probability and statistics. Topics include probability distribution functions, central limit theorem, hypothesis tests, least squares regression, design of experiments, and uncertainty determination in engineering experiments. Computer applications. 3 credits. (3 plus 0)

MA 2990 Special Topics in Mathematics
Prerequisite: Permission of the dean of computer sciences.

Directed study of a special body of subject matter in the field of mathematics. This course may be repeated for additional credit. 3 credits. (3 plus 0)

MA 3200 Graph Theory
Prerequisite: MA 2150 or CS 2410.

This course focuses on the mathematical theory of graphs; a few applications and algorithms will be discussed. Topics include trees, connectivity, Eulerian and Hamiltonian graphs, matchings, edge and vertex colorings, independent sets and cliques, planar graphs, directed graphs, and multigraphs. Applications such a Route Planning, Facilities Layout, Network Flows, Tournament Design will be studied. An advanced topic completes the course. Familiarity with linear algebra and basic counting methods such as binomial coefficients is beneficial, though not a requirement. Comfort with reading and writing mathematical proofs is also required. 3 credits. (3 plus 0)

MA 4100 Introduction to Complex Variables
Prerequisite: MA 2200; MA 3150 with a grade of C or higher.

A basic introduction to the study of complex-valued functions and their properties. It also will give insight into how complex-valued functions and their properties may be applied to various areas of science and engineering. We will study the complex numbers, the complex plane, and basic complex-valued functions. Analytic functions, complex integration, complex series and residue theory constitute the major topics to be explored. 3 credits. (3 plus 0)

MA 4300 Modern Algebra
Prerequisite: MA 2150.

An introduction to the principles and concepts of modern abstract algebra. Topics will include groups, rings, and fields, with applications to number theory, the theory of equations, geometry, cryptography, and error-correcting codes. It attempts to understand the process of mathematical abstraction, the formulation of algebraic axiom systems, and the development of an abstract theory from these axiom systems. An important objective of the course is mastery of the reasoning characteristic of abstract mathematics involving the reading and writing of mathematical proofs. 3 credits. (3 plus 0)

MECHANICAL ENGINEERING

ME 2050 Overview of Machines & Fluids
Prerequisites: Concurrent registration of two courses: MA 1100 and PH 2100.

An overview of mechanical engineering topics, exposing students to mechanical power transmission, HVAC systems, and internal combustion engines. Students will learn basic operation and design selection of generators, compressors, pumps, motors, and engines. Also, students will learn fluid flow characteristics of heating, refrigeration, and geothermal systems. 3 credits. (3 plus 0)

ME 3110 Theory of Machines
Prerequisite: EM 2020.

Basic static, kinematic and dynamic analysis of plane motion mechanisms. Graphical and analytical solutions for basic mechanisms. Power equation, equation of motion. Balancing, rotating and reciprocating masses. Critical speeds of shafts. Computer-aided kinematic design. 3 credits. (3 plus 0)

ME 3200 Thermodynamics I
Prerequisites: MA 1210; CH 1220; PH 1300.

Macroscopic thermodynamics: state, energy, entrophy and equilibrium. First-law and second-law analysis for engineering applications. Computer applications. 3 credits. (3 plus 0)

ME 3400 Mechanical Engineering Design I
Prerequisites: EM 3100; EGR 1500.

This course is intended to give students a working knowledge to design and analyze machine components and structures. Stress analysis and deflection analysis of various mechanical components including pressure vessels, rotating rings and disks, press and shrink fits, curved beams, and contact stresses will be reviewed. Fundamentals of statistical considerations in design will be reviewed. Static and dynamic failure theories will be discussed and applied to the design of machine components. Specific design problems will be set during the semester. 3 credits. (3 plus 0)

ME 3410 Mechanical Engineering Design II
Prerequisite: ME 3400.

This course is a continuation of Mechanical Engineering Design I and is intended to give students a working knowledge to design, analyze and synthesize machine components and systems, including bolted and welded joints, mechanical springs, rolling contact bearings, gears, clutches, brakes, couplings, and shafts. In addition, students work in groups on design projects and design a machine to perform a task of their choosing. 3 credits. (3 plus 0)

ME 3460 Computer Aided Design
Prerequisites: ME 3400; ME 4260 or BME 3200 or concurrent registration.

This course is intended to give students a working knowledge of solid modeling and finite elements for the design and analysis of engineering components. Commercial 3D CAD, CAE, CAM software will be used. Students will be presented with both the underlying theory of finite elements and practical applications. Problems will be drawn from solid mechanics, fluid mechanics, and heat transfer. Specific design problems will be set during the semester. 4 credits. (3 plus 3)

ME 4050 Gas Dynamics
Prerequisite: EM 3500 .
Basic concepts of gas dynamics and gas properties, isotropic flow, normal and oblique shocks, Prandtl Meyer flow, adiabatic flow, flow with friction. Computer applications. 3 credits. (3 plus 0)

ME 4200 Thermodynamics II
Prerequisite: ME 3200.
Continuation of ME 3200 Thermodynamics I. First-law and second-law applications. Gas mixtures, combustion, chemical equilibrium, power cycles, refrigeration cycles and energy conversion systems. Computer applications. 3 credits. (3 plus 0)

ME 4260 Heat Transfer
Prerequisites: EM 3500; ME 3200.
Conduction, convection, and radiation. Empirical equations for convective heat transfer. Heat exchangers, condensation, and boiling. Computer iterative solutions. 3 credits. (3 plus 0)

ME 4270 Heat Transfer Laboratory
Prerequisite: ME 4260 or concurrent registration.
Experimental studies in the analysis and design of heat transfer equipment. 1 credit. (0 plus 3)

ME 4280 Energy Systems Design
Prerequisite: ME 4260.
Gas turbine principles and design. Internal combustion engines. Steam power plants. Alternative energy systems such as wind, nuclear, solar, and wave energy systems. Students will apply energy systems theory to course project work. 2 credits. (1 plus 3)

ME 4700 Controls Engineering
Prerequisites: EM 2020, MA 2100.
Control engineering methodology with emphasis on physical system modeling and practical control system design. Topics include Laplace transforms, system modeling, block diagrams, system response, stability, steady-state error, root locus and Bode and control. 3 credits. (3 plus 0)

ME 4820 Computer Integrated Manufacturing
Prerequisite: ME 3110 or concurrent registration.
Study, analysis, design, and use of computer-integrated manufacturing systems. To provide an understanding of automation technology including CAD/CAM, CNC machining, mechanisms used in automation, robotics, control, and PLCs. Introduction to manufacturing management systems, computer networks, manpower, and materials. 2 credits. (1 plus 3)

ME 4950 Mechanical Engineering Internship
Prerequisite: Senior standing or administrative approval.
This course combines industry experience and knowledge gained in the classroom. The student will serve as an engineering team member of an organization. The student will participate in a pre-internship seminar and will complete required internship tasks. 3 credits.

ME 4973 ME Senior Project I
Prerequisites: EGR 2000; senior standing.
The presentation of a creative engineering design solution to a real-world physical problem. The design solution will involve the formal and creative application of mathematics, science, and mechanical engineering theory. Students will aim to produce systems that will be safe, cost-effective, and are technically sound solutions to the problem. Coursework will include: establishing specifications, conceptual system design, subsystem analysis and characterization, equipment sourcing, and the production of technical documentation for the design. Periodic progress reports to the technical advisor are required. 2 credits.

ME 4974 ME Senior Project II
Prerequisite: ME 4973.
The implementation of the design solution prepared in Mechanical Engineering Senior Project I. The course will involve construction and test of the project hardware and software. The project concludes with a hardware demonstration and an oral presentation to faculty and students in the department. Project students will also produce a formal written report. 2 credits.

ME 4990 Special Topics in Mechanical Engineering
Prerequisite: Permission of the department chair.
Directed study of a special body of subject matter in the field of mechanical engineering. This course may be repeated for additional credit. Variable credit.

NETWORKING

NET 1100 Introduction to Networking
A survey of network fundamentals and telecommunications design as they relate to information systems. Topics covered include hardware, voice, data, video, and digital wireless infrastructure technologies. 3 credits. (3 plus 0)

NET 1200 Network Design I
Network terminology and protocols, network standards, LANs, WANs, OSI Model, cabling, cabling tools, routers, router programming, star topology, IP addressing. Emphasis is given to the use of decision-making and problem-solving techniques in applying science, mathematics, communication, and social studies concepts to solve network problems. Care, maintenance and use of proper equipment. Local, state and federal safety, building and environmental codes are studied. Independent scheduled laboratory. 4 credits.

NET 1250 Network Design II
Prerequisite: NET 1200 with a C or better.
Advanced router configurations. LAN switching theory and VLANs, Advanced LAN and LAN switch design. Novell IPX. WAN theory and design, WAN technology, PPP, Frame Relay, ISDN. Threaded case study. Independent scheduled laboratory. 4 credits.

NET 1500 Circuits & Signals
Prerequisite: MA 1035 or concurrent registration.
Fundamental circuits and signals course covering electrical components, circuit operation, electromagnetic spectrum and optics. This course explores the basics of AC and DC circuits, signal theory and practical usages in technology. 3 credits. (3 plus 0)

NET 2000 Windows Networking
Prerequisite: NET 1250.

Licensing, installing, managing and troubleshooting MS Windows networks. Topics include: configuring and securing network servers and workstations, installing and managing network and workstation software, using non-Windows operating systems on a Windows network. Scheduled and unscheduled laboratory. 3 credits. (3 plus 0)

NET 2300 Script Programming
Prerequisite course: IS 1300.

An introductory programming course focusing on the use of scripting languages. Topics include structured programming concepts, interacting with Web sites, file systems, user authentication and content management. Emphasis will be placed on network management and administration tasks. Multiple scripting languages will be used. (Lab/Project) 3 credits. (3 plus 0)

NET 2500 Linux Networking
Prerequisite: NET 1250.

Procuring, installing, managing and troubleshooting Linux networks on microcomputers. Topics include: configuring and securing network servers and workstations, creating and managing users and groups, using command line and graphical user interfaces, surveying and selecting available application software, managing a Web server. Scheduled and unscheduled laboratory. 3 credits. (3 plus 0)

NET 2900 Network Design & Administration
Prerequisite: NET 1200.

Administration of a computer network. Design, implementation, and management of computer networks using multi-user network operating systems. Allocating and managing network resources, sharing resources across a network, monitoring network traffic, security. Ethical issues. Unscheduled laboratory. 3 credits. (3 plus 0)

NET 2990 Networking Special Topics
Prerequisite: Administrative approval.

Directed study of a special body of subject matter in the field of networking. This course may be repeated for additional credit. Variable credit.

NET 3200 Wireless Communication
Prerequisite: NET 1250.

Fundamentals of wireless LANS and WANS. Focuses on the design, planning, implementation, operation and troubleshooting of wireless LANs; includes security, and design best practices; also covers microwave, satellite, rf, and new technologies. 3 credits. (3 plus 0)

NET 3300 Network Security
Prerequisite: NET 1250.

Provides the fundamentals of network security; students learn and implement security solutions that will reduce the risk of revenue loss and vulnerability; combines hands-on experience, instructor-led and e-learning for students. Prepares students to take the MCNS (Managing Cisco Network Security) and CSPFA (Cisco Secure PIX Firewall Advanced) exams. 3 credits. (3 plus 0)

NET 3400 Directed Studies in Networking
Prerequisite: NET 1250 and junior standing.

This course prepares students for the lifelong learning process that is required in technology fields. The student, in consultation with the instructor, chooses a specific area of expertise and then prepares to sit for an industry standard certification exam in that area. Students learn the importance of staying current in their field and verifying to others the level of their expertise. Students also will develop practices that work for them when studying in an independent environment. Curriculum, study materials, and access to labs will be provided. Unscheduled lab. 3 credits. (3 plus 0)

NET 4000 Networking Seminar
Prerequisite: Senior standing or administrative approval.

This course aims to put into perspective previous course work and examine the current state of the field. Students will research a ten-year history of the field as well as the current state in terms of hardware, software, business, employment and societal effects. From this study, students will project where the field will be ten years hence. Students also will select a topic of current interest that has some ethical component and write a research paper about that topic. 1 credit.

NET 4300 Voice & Video Systems
Prerequisite: NET 1250.

Concepts and design of multi-service IP communication systems including voice and video delivery. Covers VoIP (Voice over IP) protocols and standards, quality of service, traffic prioritization, congestion control, signaling and policy control. Bandwidth allocation and video delivery systems are addressed. 3 credits. (3 plus 0)

NET 4900 Networking Project/Internship
Prerequisite: IS 4100; senior standing.

Practical hands-on work to utilize and put into perspective previous coursework. Students work through, from start to finish, an entire project similar to one they will be involved in upon entering the work force. Students are given a scenario that will cover an entire Internet/Intranet project. They will need to design and implement the project, document appropriately, and demonstrate viability. 3 credits. (3 plus 0)

ORGANIZATIONAL LEADERSHIP

OL 3000 Employee Development
Prerequisite: BA 2700

This course is a study in current theories and concepts of employee development. Students will examine practical approaches to ensuring that employees develop the knowledge and skills to perform effectively in their jobs and advance in their careers. The course will look at the role of training and development, coaching, mentoring, and developmental planning as well as performance management, appraisal, and feedback. 3 credits. (3 plus 0)

OL 3200 Managing Organizational Change & Continuous Improvement
Prerequisite: OL 3000.

This course examines the role of change and continuous improvement in organizations. Students will be introduced to theoretical concepts involved with organizational change and continuous improvement and learning. They also will analyze the forces that drive organizations to change and examine processes for planning and

implementing effective organizational change. 3 credits. (3 plus 0)

OL 3300 Quantitative Decision-Making
Prerequisite: OL 3200.
A course designed to give OL students the specific math background to understand, correlate, and analyze data. It covers mathematical operations, how to use a calculator effectively to solve organizational problems, equations, and graphs, simultaneous equations and their applications (i.e. breakeven analysis), simple regression and descriptive statistics (mean, median, mode, standard deviation, histograms and Pareto charts). 3 credits. (3 plus 0)

OL 3400 Financial Systems for Decision-Making
Prerequisite: OL 3300 for business majors; MA 2025 for IS majors.
This course addresses the analysis of managerial planning and control systems. It examines the development and administration of operating reports, budgets, and financial support systems. Accounting vocabulary and financial statement analysis are also introduced, emphasizing financial information for effective organizational leadership. 3 credits. (3 plus 0)

OL 4000 Strategic Planning
Prerequisite: OL 3400
This is a process oriented course that reviews planning activities such as developing a company mission, competitive analysis, company situation analysis, potential strategies supported by a traditional SWOT review, competitive advantage, growth scenarios, the role of setting specific objectives in implementing strategies, and financial projections. This course shows how to transform the company mission statement into an actionable plan. 3 credits. (3 plus 0)

OL 4100 Qualitative Decision-Making
Prerequisite: OL 4000.
A review of methods used to collect information to support business decisions, such as customer surveys, employee surveys, focus groups, competitive studies, and benchmarking. Topics include designing procedures to obtain unbiased data, scaling methods, and analysis and interpretation of data to produce credible results and recommendations. Emphasis is placed on intelligence necessary to support strategic planning activities and initiatives. 3 credits. (3 plus 0)

OL 4900 Organizational Leadership Capstone
Prerequisite: OL 4100.
A format of synthesis is implemented, bringing together concepts and processes of prior studies within the organizational leadership program. Emphasis is placed on viewing the organizational from a strategic management and integrated problem-solving perspective. 3 credits. (3 plus 0)

PHYSICAL EDUCATION

PHED 1010 Theory & Fundamentals of Developmental Skills in PE/Coaching
Prerequisite: Department approval.
This course provides a focus on the development of skills in volleyball, basketball and golf. Student will participate in observation and authentic assessment of progression in skill acquisition as related to school-age children. Students will learn rules and regulations for each sport or lifetime skill and will actively participate in class, how to play and coach. 2 credits.

PHED 2020 Theory & Fundamentals of Developmental Skills in PE/Coaching
This course provides a focus on the development of skills in baseball, softball, and badminton. Student will participate in observation and authentic assessment of progression in skill acquisition as related to school-age children. Students will learn rules and regulations for each sport or lifetime skill and will actively participate in class. Students will learn how to play and how to coach. 2 credits.

PHED 3030 Theory & Fundamentals of Developmental Skills in PE/Coaching
This course will focus on the development of skills in tennis, baseball and basketball. Students will participate in observation, curriculum design and authentic assessment of progression in skill acquisition as related to school-age children. 2 credits.

PHED 3040 Theory & Fundamentals of Developmental Skills in PE/Coaching
This course will focus on the development of skills in bowling, golf and swimming. Students will participate in observation, curriculum design and authentic assessment of progression in skill acquisition as related to school-age children. 2 credits.

PHED 3600 History & Philosophy of PE/Sport
This course will focus on the development of physical education and sport throughout history. Students will emerge with the ability to view PE and sport from both national and international perspectives. Information about the lives of individuals and institutions that were affected by sport during various historical periods will be studied. The impact of sports among various social groups and cultures is studied. Students are introduced to facts, principles, and philosophies associated with motivation, learning principles, program instruction, supervision, administration, and evaluation of PE and sports. 3 credits. (3 plus 0)

PHED 3610 Beginning Swimming
This course will focus on beginning swimming skills and how to teach these skills to pupils. The American Red Cross Learn to Swim Program consists of 5 levels. The program covers simple water adjustment skills to advanced swimming skills. 2 credits.

PHED 3650 Outdoor Leisure & Recreation
This course will teach skills necessary for outdoor and leisure education for K-12. Skills will include hiking, orienteering, backpacking and camping. Mandatory participation in a camping trip will comprise part of the grade for this class. 3 credits. (3 plus 0)

PHED 3700 Motor Learning
This course will focus on principles related to the teaching, learning and performance of motor skills. Application of teaching and learning strategies for

motor skill acquisition will be emphasized. Students will interface supporting literature and current research with real-world situations, including teaching; coaching; design of performer-friendly equipment and work environments; rehabilitation; and the acquisition of motor skills. 3 credits. (3 plus 0)

PHED 3720 Methods & Materials Middle/ Secondary PE

This course will focus on theoretical aspects of teaching physical education in the middle/junior high and secondary school setting. Students will analyze and develop teaching methods, strategies, and materials appropriate for learning. 3 credits. (3 plus 0)

PHED 3800 Methods & Materials Elementary/Intermediate PE

This course is designed to plan, teach and evaluate developmental physical education programs in grades K-6. Students will learn teaching strategies associated with motor skill and adaptive measures for early and intermediate school age children. Students will participate in service-learning activity in conjunction with an area school, business, or community program. 3 credits. (3 plus 0)

PHED 3850 Curriculum Development & Theory

This course will focus on the dynamics of change to avoid defensive reactions to new ideas, redesigned learning and teaching formats, popular educational trends and philosophical perspectives which affect the development of curriculum. Students will be challenged to rethink traditional physical education courses in pursuit of new ways to challenge today's pupils. 3 credits. (3 plus 0)

PHED 4610 Measure & Evaluation in PE/ Sport

This course will focus on test construction, distinctiveness, application and evaluation for individual and group testing situations. Students will learn how to interpret and apply the resulting statistical data to make curriculum adjustments and individual educational plans for pupils. 3 credits. (3 plus 0)

PHED 4700 Instructional Techniques in Teaching Individual & Team Sports

This course will focus on techniques involved in teaching individual and team sports to public school children. In-depth curriculum and methods to instruction and assessment of skills will be covered. Students will complete lesson plans and gather materials for specific activities and sports. 2 credits.

PHED 4710 Water Safety Instruction

Prerequisite: PHED 3610 (beginning swimming) or Red Cross Level 5 certification.

This course will focus on beginning swimming skills and how to teach these skills to pupils. The American Red Cross Water Safety Instruction Program. Each level builds on the skills learned in the previous level. The program covers simple water adjustment skills to advanced swimming skills. Students will focus on methods and techniques of rescue swimming and safety. Upon successful completion of the course students will be certified to work as lifeguards or as waterfront directors. 2 credits.

PHED 4800 Administration of Physical Education

This course will focus on the role of the physical educator/coach and the development of administrative skills. Students will learn to coordinate their programs with community wellness agencies and services. Policies, procedures, and practices will be discussed. 3 credits. (3 plus 0)

PHED 4810 Adaptive & Corrective PE

This course will focus on the recognition of and corrective methodology for functional abnormalities. Students will learn adaptive techniques instructional settings. 3 credits. (3 plus 0)

PHED 4850 Professional Development Seminar

This course is required for all students enrolled in PHED 4900 and PHED 4950. Students will attend seminar presentations and a weekly evening meeting during the student teaching experiences. This class is open only to students who are admitted to student teaching. 2 credits.

PHED 4900 Student Teaching-Lower Grades

This course is required for standard licensure in grades K-6. It involves an all-day assignment for 7 weeks and is open only to students who are admitted to student teaching. 6 credits.

PHED 4950 Student Teaching-Upper Grades

This course is required for standard licensure in grades 7-12. It involves all-day assignment for 7 weeks and is open only to students who are admitted to student teaching. 6 credits.

PHYSICS

PH 1000 Physical Science

Introduction to basic ideas of physics, chemistry, and the nature of scientific inquiry, with an emphasis on learning about learning, and how elementary students think and learn about science. 3 credits. (3 plus 0)

PH 1100 Fundamentals of Physics

Prerequisites: MA 1035; MA 1060 or concurrent registration.

Basic mechanics: vectors, kinematics in one and two dimensions, Newton's Laws, work, energy, momentum. Laboratory is incorporated into the course. 3 credits. (3 plus 0)

PH 1300 General Physics I

Prerequisites: MA 1210 or concurrent registration; PH 1100 or equivalent.

Basic mechanics: vectors, kinematics in one and two dimensions, Newton's Laws, work, energy, momentum and rotational motion. 3 credits. (3 plus 0)

PH 1310 General Physics I Laboratory

Prerequisite: PH 1300 or concurrent registration.

Selected experiments in mechanics, including kinematics, Newton's Laws, energy, momentum, and rotation. Use of computers for data acquisition and analysis. 1 credit.

PH 2100 Fundamentals of Physics II

Prerequisite: PH 1100.

Rotational motion; basic electricity and magnetism, with emphasis on DC and AC circuits. Laboratory is incorporated into the course. 3 credits. (3 plus 0)

PH 2300 General Physics II
Prerequisites: MA 1210; PH 1300; PH 1310.
Basic electricity and magnetism. Coulomb's Law, electric fields, electric potential, capacitance, resistance, current, Ohm's Law, magnetic fields, inductance with an emphasis on circuits; also harmonic motion, waves. 3 credits. (3 plus 0)

PH 2310 General Physics II Laboratory
Prerequisites: PH 1310; PH 2300 or concurrent registration.
Selected experiments in electricity, magnetism, and periodic motion. Use of computers in data acquisition and analysis. 1 credit.

PH 3300 Optics
Prerequisite: PH 2300.
Basic phenomena of geometrical and physical optics; thick lenses, apertures, wave motion, interference, diffraction, polarization, double refraction, and the theory of selected optical instruments. 3 credits. (3 plus 0)

PH 3500 Modern Physics
Prerequisites: MA 2100; PH 2300.
Fundamental principles of atoms, molecules, and quantum mechanics. Selected topics from the following: special relativity, nuclear structure, nuclear radiation, nuclear reactions, high energy physics, semiconductor theory, semiconductor devices, lasers. 3 credits. (3 plus 0)

PSYCHOLOGY

PSY 1700 Introduction to Psychology
The fundamental principles of psychology including, but not limited to, research methodology, perception, development, motivation, consciousness, learning, thinking, stress management and social relationships. 3 credits. (3 plus 0)

PSY 1750 Human Growth and Development
Prerequisite: PSY 1700.
A life-span human development course which integrates biology, psychology, sociology, medicine, demography, economics and anthropology perspectives from conception to death. Emerging trends in research. 3 credits. (3 plus 0)

PSY 2000 Understanding Diversity
This course explores race, gender, sexuality, sexual orientation, socioeconomic class, and systemic influences. Emphasis is placed on the connection among individuals, institutions and cultural groups, and on the relatedness of individuals' race, gender, sexual orientation, and socioeconomic class. Theoretical and philosophical frameworks and research are presented through readings and course materials drawn from education, psychology, sociology, American studies, cultural studies, health sciences and management. 3 credits. (3 plus 0)

PSY 2200 Seminar in Psychology
An interdisciplinary introduction to the foundations of psychology theory, psychological problems, and social problems which may affect personal growth and professional development. Topics include, but not limited to motivation, stress, learning, personality, and intelligence. Research methodology will be emphasized and a project will be designed, researched, and presented. 3 credits. (3 plus 0)

PSY 2600 Psychology Field Experience
Prerequisites: PSY 1700; sophomore standing; C or better in IIT 1100.
Actual leadership experience in a work setting related to the field of psychology. The specific work setting and type of responsibilities are determined through consultation with the supervising instructor. Theory is coordinated with practical experience. 3 credits. (3 plus 0)

PSY 2750 Psychology of Communication
Prerequisite: PSY 1700.
Basic principles and fundamental experiences in the field of interpersonal communication; understanding of language component of communication (linguistic and semantic), cultural diversity's effect on interpersonal relations; human developmental models. 3 credits. (3 plus 0)

PSY 2760 Theories of Personality
Prerequisite: PSY 1700.
Introduction to the study of how individuals are influenced by enduring inner factors and the development of personality over the course of a lifetime. Topics include biological trait theories, behavioral and cognitive social theories, and psychodynamic theories. 3 credits. (3 plus 0)

PSY 2780 Social Psychology
Prerequisite: PSY 1700.
A study of how thoughts, feelings, or behaviors of individuals are influenced by the actual, imagined, or implied presence of others. Topics include attitude formation and attitude change, prejudice and discrimination, cooperation and competition, affiliation, interpersonal attraction, aggression and violence, social perception, group influences and environmental influences on social behavior. 3 credits. (3 plus 0)

PSY 3200 Introduction to Psychotherapy
Prerequisite: PSY 1700.
Introduction to treatment of abnormal behavior using individual psychotherapy. Selected theories and techniques are surveyed. Emphasis is on ethical considerations, common practices used and implications of diversity. 3 credits. (3 plus 0)

PSY 3720 Child & Adolescent Psychology
Prerequisite: PSY 1700.
Development of the child from birth through adolescence, emphasizing developmental and environmental factors which influence personality formation. 3 credits. (3 plus 0)

PSY 3730 Aging
Prerequisite: PSY 1700.
Introduction to the process of aging, directed study in biological, psychological, and social factors affecting the elderly. 3 credits. (3 plus 0)

PSY 3740 Counseling Techniques
Prerequisite: PSY 1700.
Introduction to the techniques and strategies commonly used in counseling situations. 3 credits. (3 plus 0)

PSY 3760 Abnormal Psychology
Prerequisite: PSY 1700.
Abnormal behavior including major psychological disorders. Emphasis on various

contemporary approaches to their understanding and treatment. 3 credits. (3 plus 0)

PSY 3770 Assessment in Psychology
Prerequisite: MA 1025.

The basic concepts, terminology, and principles of assessment applicable to human services counseling are considered, with an emphasis on bother written and oral assessment techniques. 3 credits. (3 plus 0)

PSY 3780 Research Methods & Statistics
Prerequisite: MA 1025; SS 1700; junior standing required.

The principles, methods, and strategies useful in planning, designing, writing, and evaluating research studies in the behavioral sciences. Non-experimental research methods such as naturalistic observation, survey, correlation, field study, program evaluation and experimental research will be studied. Topics to be covered include background research skills, hypothesis development, research methodology, descriptive statistics (using calculator or computer), and an introduction to probability. Additional topics include research designs, measurements, hypothesis testing, statistical significance, and the analysis of data. The use of computer statistical packages will be introduced. 3 credits. (3 plus 0)

PSY 4200 Senior Seminar in Psychology
Prerequisites: PSY 1750; PSY 3760; PSY 3780; senior standing.

Discussion and exploration of current topics in the field of psychology. Specific topics selected for study vary from year to year. A research paper and presentation is required. Emphasis on allowing students to research specific areas of interest in depth.

PSY 4950 Internship in Psychology
Prerequisite: PSY 2600.

Professional experience in a setting related to the field. The specific work setting and type of responsibilities are determined through consultation with the supervising instructor. Work responsibilities should be professional in nature and should not duplicate the 2600 Field Experience. Approved elective(s) may be substituted for this class. Theory is coordinated with practical experience. Variable credit with approval of the dean.

RECREATION

REC 1200 Introduction to Recreation Service

An overview of recreational agencies, service, and theory of leisure studies and service. 3 credits. (3 plus 0)

REC 1250 Introduction to Sports & Activities Programming

This course introduces the student to the philosophical and practical issues related to activities programming in higher education administration. Students will be required to attend class and program sports or cultural activities on this campus. Students also will be introduced to career opportunities in this area. 3 credits. (3 plus 0)

REC 2000 Recreation Programming
Prerequisite: REC 1200.

Principles and techniques for recreation programming, including philosophical foundation, needs assessment, objective writing, program planning, and evaluating methods. 3 credits. (3 plus 0)

REC 2600 Recreation Field Experience
Prerequisites: REC 2000; C or better in IIT 1100.

Actual leadership experience in a recreational setting or by participation in an organized recreation/leisure program. Theory is coordinated with practical experience. 3 credits. (3 plus 0)

REC 3010 Nonprofit Management Practices
Prerequisites: REC 2600 or HS 2600 or TR 2600 or permission of the dean.

This course covers legal, financial, funding and governance issues, practices, and controversies of nonprofit organizations and governmental agencies. 3 credits. (3 plus 0)

REC 3030 Legal Issues in Recreation & Sport Management
Prerequisite: TR 2600 or REC 2600 or SM 2600.

This course will familiarize students with the legal issues in the recreation and sports fields. They will be introduced to the legal process and current trends in risk management. Negligence, torts, constitutional rights, personnel rights and standards of care will be addressed along with how to do risk assessments on your facilities to better protect your clients, yourself, and your agency. 3 credits. (3 plus 0)

REC 4000 Recreation Seminar

Directed study in innovative programs and philosophies for selected populations. Variable credit.

REC 4950 Recreation Internship

Professional field experience with one or more approved cooperating leisure service of recreation agencies appropriate to the student's career choice. Full-time placement throughout the semester. 15 credits.

REC 4990 Special Topics in Recreation
Prerequisite: Permission of the dean of general studies.

Directed study of a subject in the field of recreation. This course may be repeated for additional credit. Variable credit.

SCIENCE

SCI 2000 Contemporary Issues in Science
Prerequisites: MA 1025; ENG 1250.

An introduction to the fundamentals of science as it applies to various contemporary issues. This course introduces the nature of science and the scientific method, and deals in depth with the nature of sources and evaluation of the credibility of sources. Specific topics may vary, but may include the following: food and energy; organic compounds in everyday life; greenhouse gases; green chemistry; laws of thermodynamics; energy production, transportation, and usage; electricity; fossil fuels; renewable fuels; nuclear energy; alternative energy sources. 3 credits. (3 plus 0)

SPANISH

SPA 1100 Conversational Spanish I

Fundamentals of pronunciation, conversation, grammar, and composition. Cannot be taken for credit by native Spanish speakers or students with three or more secondary class units of Spanish. 3 credits. (3 plus 0)

SPA 1200 Conversational Spanish II
Prerequisite: SPA 1100.
Continuation of Spanish I. Fundamentals of pronunciation, conversation, grammar, and composition of Spanish. SPA1200 cannot be taken for credit by native Spanish speakers. 3 credits. (3 plus 0)

SPA 1300 Spanish for Business
Prerequisite: SPA 1100.
Introduction to the Spanish business world and commercial language. Development of business vocabulary and business conversation skills. 3 credits. (3 plus 0)

SPORTS MANAGEMENT

SM 1400 Introduction to Sports Management
Introduction to the management and business principles of sport in profit and non-profit organizations. Topics covered include career and internship opportunities, ethical considerations, the evolution of this career field, and future trends. 3 credits. (3 plus 0)

SM 2600 Field Experience in Sports Management
Prerequisite: SM 1400; C or better in IIT 1100.
Actual leadership experience in a sports-related setting. Theory is coordinated with practical experience. 3 credits. (3 plus 0)

SM 2990 Special Topics in Sports Management
Prerequisite: Permission of the dean of business.
Directed study of a special body of subject matter in the field of sports management. This course may be repeated for additional credit. Variable credit.

SM 3100 Sport Facility & Event Management
Prerequisites: SM 2600; ACC 2140; BA 2500.
This course focuses on planning, maintaining, and managing single and multi-purpose sport/recreational facilities and associated sporting events. Students will become familiar with management techniques and strategies necessary for proper event promotion, implementation, and evaluation. Emphasis is placed on the relationship between facility design and event success/failure. 3 credits. (3 plus 0)

SM 4200 Marketing Promotion & Fundraising in Sports Administration
Prerequisite: BA 2500; SM 1400.
The characteristics of sports marketing, promotional planning, and fundraising. The course focuses upon the planning processes required for effective promotions and marketing campaigns and establishes guidelines and strategies for fund raising. 3 credits. (3 plus 0)

SM 4950 Sports Management Internship
Prerequisite: SM 2600.
Professional experience in a setting related to the field. The specific work setting and type of responsibilities are determined through consultation with the supervising instructor. Work responsibilities should be professional in nature and should not duplicate the 2600 Field Experience. Approved elective(s) may be substituted for this class. Theory is coordinated with practical experience. Variable credit with approval of the dean.

SOCIAL SCIENCE

SS 2110 Introduction to Anthropology
The place of human beings in nature, with a comparative approach to our physical emergence and cultural evolution, including the development of social systems and technologies, problems arising from the interactions of biological and cultural phenomena. 3 credits. (3 plus 0)

SS 2200 Macroeconomics
Prerequisite: Sophomore standing.
A study of the overall economic system with emphasis upon the gross national product, fiscal and monetary policy, the budget and banking. 3 credits. (3 plus 0)

SS 2210 Microeconomics
Prerequisite: MA 1025 or equivalent.
A study of the economic system. Supply and demand, competition, pricing policies, wage and rent determination, and government regulation. 3 credits. (3 plus 0)

SS 2410 World History
Human cultural development through a historic approach to pivotal periods, ideas, inventions and innovations in the evolution of civilization including regional and planet-wide perspectives. 3 credits. (3 plus 0)

SS 2430 Early United States History
The growth toward democracy in a new nation, and transition from nationalism to sectionalism during the period 1775 through the Civil War. 3 credits (3 plus 0)

SS 2440 History of Modern America
The Civil War, reconstruction, corruption, reform, industrialization, internationalism, and isolationism from 1865 to the present. 3 credits .(3 plus 0)

SS 2460 African-American History
A survey of African-American history in America from 1619 to the present as seen through art, literature, and the teachings of several prominent black leaders. Through study of the teachings and philosophies of the black leadership, the student will compare the issues of the past with contemporary problems facing the African-American in today's society. 3 credits. (3 plus 0)

SS 2720 Group Dynamics
Prerequisite: PSY 1700 or BA 2010.
Psychology of groups; normal and developmental growth; development of leadership styles, emphasis on assessment of group change. 3 credits. (3 plus 0)

SS 2800 Introduction to Sociology
An introduction to the scientific study of human society and social behavior, this course examines sociological theories of human behavior, cultural patterns, and social change. Emphasis upon the influence of social and cultural forces on personal experience and social behavior in reference to the postindustrial society. 3 credits. (3 plus 0)

SS 2810 Social Problems
Prerequisite: SS 2800.
Analysis of problem conditions in modern society in areas such as the family, eco-

nomic order, crime, civil rights, ethnic and religious tensions, and the environment. 3 credits. (3 plus 0)

SS 2830 Applied Social Problems

An introduction to community development, community building, service learning and cultural diversity through an intense volunteer experience, personal reflection, and focused research. 3 credits. (3 plus 0)

SS 2850 Conflict Resolution

Conflict resolution in both personal and professional settings. Why we have conflicts, and on what levels. The course examines ways to analyze conflict and how to develop mutually beneficial resolutions by using a range of conflict resolution methods and techniques. Current and popular theoretical approaches also are examined. 3 credits. (3 plus 0)

SS 2900 Community & Social Movements

Prerequisite: SS 2800.

This course provides a review of community and social movements including historical perspectives. The course will help students connect with community work and social movements established to accomplish social change in our society. An examination of the individual's role as social advocate and effective citizen will be completed. 3 credits. (3 plus 0)

SS 2990 Special Topics in Social Sciences

Prerequisite: Permission of the dean of general studies.

Directed study of a special body of subject matter in the field of social sciences. This course may be repeated for additional credit. Variable credit.

SS 3300 Sport in Society

Prerequisites: PSY 1700; SS 2800.

An examination of the growth of sports and the sports of industry in society. Historical, sociological, and psychological aspects are examined including consideration of sports as a means of social mobility and character building. Problems such as drug usage, scandals within sports, and cheating also are addressed. 3 credits. (3 plus 0)

SS 4990 Special Topics in Social Sciences

Prerequisites: Permission of the dean of general studies.

Directed study in a special body of subject matter in the social sciences. May be repeated for additional credit. Variable credit.

SOFTWARE ENGINEERING

SE 1100 Introduction to Software Engineering/Projects

Prerequisite: Open only to software engineering majors.

Introduction to software engineering draws the distinction between programming and software engineering. Students are introduced to the stages of the software engineering life cycle. Topics such as requirements elicitation, requirements conception, project planning, software quality assurance, testing, and maintenance are emphasized in daily course lectures. These principles are then utilized during projects. The projects will vary in length and will be completed either collectively as a class, in smaller groups, or individually. 3 credits. (3 plus 0)

SE 2100 Software Engineering Project

Prerequisite: SE 1100.

The software engineering life cycle principles emphasized in SE 1100 are utilized during projects. The projects will vary in length and will be completed both collectively as a class as well as in individual groups. The importance of customer needs is stressed. This includes but is not limited to comprehensive requirements writing, accurate project planning (leading to timely completion), thorough testing of the product, and delivery. 3 credits. (3 plus 0)

SE 2110 Software Engineering Project

Prerequisite: SE 2100.

Projects will be completed paying particular attention to Quality Assurance (QA) which covers all activities including design, development, production, installation, servicing and documentation. Other topics include failure testing, statistical control, and total quality control. Introduces current models like Capability Maturity Model Integration (CMMI). 2 credits.

SE 2120 Software Engineering Project

Prerequisite: SE 2110.

Projects will be completed that focus on platform porting. Case studies will be created to determine which platforms are most effective for the job and when applicable, how to port from one platform to another based on customer needs. 2 credits.

SE 2990 Special Topics

Prerequisite: Permission of program director.

Course of study agreed upon by the student and his or her advisor; intended to extend the breadth of a student's education which may or may not relate directly to software engineering. May be repeated. Variable credit.

SE 3950 Software Engineering Project

Prerequisite: Junior standing in software engineering program.

Projects will be solicited from our industry partners that introduce another level of realism and practical experience. These projects will include proposal writing, project planning, requirements composition, design, test, quality assurance, user documentation, and delivery. 3 credits. (3 plus 0)

SE 3951 Software Engineering Project

Prerequisite: Junior standing in software engineering program.

A continuation of SE 3950. Projects will be solicited from our industry partners, building on the level of realism and practical experience. These projects will include proposal writing, project planning, requirements composition, design, test, quality assurance, user documentation, and delivery. 5 credits.

SE 4950 Software Engineering Internship

Prerequisite: Permission of the program director.

Software Engineering Internship is an opportunity to apply the principles learned in the classroom to the real world. A student's success will be determined by the employer in conjunction with the portfolio maintained throughout the semester. Variable credit.

SE 4990 Special Topics

Prerequisite: Permission of the program director.

Course of study agreed upon by the student and his or her advisor; intended to extend the breadth of a student's educa-

tion which may or may not relate directly to software engineering. May be repeated. Variable credit.

THERAPEUTIC RECREATION

TR 1230 Introduction to Therapeutic Recreation

The philosophy and psychology of recreation as therapy. The organization of treatment settings showing the contribution of recreation in treatment and rehabilitation processes. 3 credits. (3 plus 0)

TR 2300 Therapeutic Programming & Adaptive Techniques

Prerequisite: TR 1230.

Techniques and processes used to assess and evaluate special populations in clinical and rehabilitation settings. 3 credits. (3 plus 0)

TR 2600 Therapeutic Recreation Field Experience

Prerequisites: REC 2000; C or better in IIT 1100.

Actual leadership experience in a recreational setting or by participation in an organized recreation/leisure program. Theory is coordinated with practical experience. 3 credits. (3 plus 0)

TR 3100 Therapeutic Recreation for Special Populations

Prerequisite: TR 1230 or REC 1200.

An exploration of the role of therapeutic recreation services in the rehabilitation of individuals with a variety of disabilities and special issues. Topics include, but are not limited to: developmental disabilities, physical disabilities, visual and hearing impairments, individuals with mental illnesses, and life-span issues including children and the aging. 3 credits. (3 plus 0)

TR 3200 Advancement of the Therapeutic Recreation Profession

Prerequisite: TR 2600.

This course will focus on the importance of professionalism, continuing education in the TR field, and advocacy for our clients. It will cover such topics as legislation which affects our clients, certification, professional standards and ethics, and being active in professional associations and how those topics relate to the advancement of the TR profession. 3 credits. (3 plus 0)

TR 3300 Administration & Management in Therapeutic Recreation

Prerequisite: TR 2600.

In this course students will cover the many aspects of management in the TR field. They will study the basics of management such as management theory, organizational behavior, financial management and budgeting, and human resource management. They will also cover topics more specific to TR such as group development, working within the healthcare field and with other healthcare professionals, and managing volunteers and interns. 3 credits. (3 plus 0)

TR 4010 Issues & Trends in Therapeutic Recreation

This course will be structured in a seminar format with directed study in the latest issues and trends related to the field of therapeutic recreation. Topics may include, but not be limited to, legal, financial, and programmatic trends. 3 credits. (3 plus 0)

TR 4100 Client Assessment & Evaluation

Prerequisite: TR 2600.

An examination of a variety of assessment and evaluation techniques commonly used in working with special populations. 3 credits. (3 plus 0)

TR 4950 Therapeutic Recreation Internship

Prerequisite: Senior standing; TR 2600.

Professional experience in a setting related to the field. The specific work setting and type of responsibilities are determined through consultation with the supervising instructor. Work responsibilities should be professional in nature and should not duplicate the 2600 Field Experience. Theory is coordinated with practical experience. 15 credits.

GRADUATE COURSE DESCRIPTIONS

Contents

HEALTH CARE MANAGEMENT

HCM 5000 Introduction to Health Care Management
Prerequisite: Core Courses.
This course focuses on the health care system of the United States. The student will explore the characteristics that make this system unique and complex. Students will be introduced to the evolution, financing, and administration of a variety of health care organizations. 3 credits.

HCM 5300 Health Care Law
Prerequisite: HCM 5000.
Students will gain an understanding of the basic laws that govern health care and how they affect the delivery of health care services. Topics will include reimbursement law, malpractice, liability, HIPPA, patient/provider relationships, quality-of-life decision making, and licensure. 3 credits.

HCM 6200 Health Care Operations & Quality
Prerequisite: HCM 5000.
Students will be introduced to the quality concepts that help improve operational processes that are part of the health care delivery system. Students will analyze different types of health care organizations to develop recommendations for improvement. 3 credits.

HCM 6300 Health Care Policy & Ethics
Prerequisite: HCM 5000.
In this course, students will examine public policy making in the health care sector. Students will learn the guiding principles of policy formulation and analysis and apply them to a range of health care issues. In addition, the course will focus on the major ethical issues facing health care providers, payers, and patients. 3 credits.

HCM 6400 Health Care Finance
Prerequisite: HCM 5000.
This course will provide an overview of the techniques used in the financial management of health care organizations. Topics will include sources of health care funding, third party payment or reimbursement, the implications of uninsured patients, budgeting, and capital asset evaluation. 3 credits.

MASTER OF BUSINESS ADMINISTRATION

MBA 5000 Executive Management
Prerequisite: First course in the program.
A study of the executive management function in organizations. Emphasis will be given to the expectations of executive-level managers, including leadership, motivation, strategic thinking, and tools such as research skills, technological competence, and time management. 3 credits.

MBA 5110 Management Information Systems
Prerequisite: Core courses.
A study of information flows and information needs within organizations and technological responses to those needs. Attention will be given to the information needs of the full range of organizations from the very small firm, whose needs may be met with office suite software, to the largest multi-site organizations, which maintain information Intranets. Topics covered will include: business processes, data resources, information systems hardware and software, telecommunications, electronic enterprise, systems design. 3 credits.

MBA 5120 Managerial Economics
Prerequisite: Core courses.
A review of economic tools in managerial decision-making. Demand analysis and forecasting, cost analysis, production function, market structures, and public sector analysis are covered. 3 credits.

MBA 5130 Managerial Accounting
Prerequisite: MBA 5000 or MSE 5000.
A study of accounting data used internally by business managers in directing the activities of manufacturing and service organizations. Topics include cost accumulation, budgeting, pricing, and the use of this information in the planning, control, and decision making activities. 3 credits.

MBA 5200 Financial Management
Prerequisite: Core courses.
A study of the business organization's financial planning, problems of working capital management, capital budgeting, dividend policy, and comprehensive problems. 3 credits.

MBA 5210 Business Statistics
Prerequisite: MBA 5000 or MSE 5000.
The application of mathematical and basic statistical methods to decision-making in all organizations. A computer software package will be used as a comprehensive hands-on reference tool to analyze data and to present findings. 3 credits.

MBA 5220 Marketing Management
Prerequisite: MBA 5000 or MSE 5000.
A study of strategic market analysis and planning. Specific emphasis will be given to market situation analysis, strategy and program development, and implementation and control of a marketing plan. 3 credits.

MBA 5300 Organizational Behavior
Prerequisite: Core courses.
A study of behavior in corporate and organizational settings, including motivation, leadership, communication and power. Understanding contextual and environmental issues will be emphasized. Current and popular theoretical approaches will be examined. 3 credits.

MBA 5310 Business Ethics
In this course students learn about the complex responsibilities facing business leaders today. Through cases about difficult managerial decisions, the course examines the legal, ethical and economic responsibility of corporate leaders. It also teaches students about management and governance systems leaders can use to promote responsible conduct by companies and their employees, and shows how personal values can play a critical role in effective leadership. 3 credits.

MBA 5320 Quality Management
Prerequisite: Core courses.
An integrated study in the design and implementation of quality management

tools including relevant problem-solving methods and behavioral models from a process-oriented perspective. 3 credits.

MBA 5330 Business Law
Prerequisite: Core courses.
This course examines business law from the perspective of the professional (non-legal) manager. The course examines fundamental legal concepts and terminology, providing a basic foundation in civil procedure, and furnishing a substantive analysis of business torts, product liability, negligence, contract law, commercial law and the Uniform Commercial Code (UCC), debtor/creditor law, bankruptcy law, administrative law, alternative dispute resolution, and the litigation process. 3 credits.

MBA 5340 Operations Management
Prerequisite: Core courses.
This course examines the tools and techniques used by operations managers to make strategic and tactical decisions for their organi-zations. This course also focuses on the design, management, and improvement of operations activities for the production of goods and services. 3 credits.

MBA 5600 Human Resource Management
Prerequisite: Core courses.
A study of the following key areas of HR: management practices, selection and placement, training and development, compensation and benefits, employee and labor relations, health/safety and security, and international HR issues. The Society for Human Resource Management (SHRM) Learning System will be utilized to facilitate the learning process required in the key HR areas. 3 credits.

MBA 6200 Performance Management
Prerequisite: Core courses.
This course is a study in performance management as a continuous process of identifying, measuring, and developing the performance of individuals and teams and aligning performance with the strategic goals of the organization. Performance management systems are described as key tools to transform people's talent and motivation into a strategic organizational advantage. In addition, performance management is discussed as an integral part of all organizational units and not the domain of the HR function only. 3 credits.

MBA 6210 Labor Relations
Prerequisite: Core courses.
This course is a study of industrial relations and the labor-management relations function of the modern work organization. The course examines problems, strategies, and policies of management interactions with formal and informal labor organizations. Labor legislation, collective bargaining, productivity analysis, and arbitration are stressed, with emphasis on negotiating strategies and techniques. Some time is also devoted to alternative dispute resolution as well as current trends in the labor movement. 3 credits.

MBA 6220 Compensation Management
Prerequisite: Core courses.
This course is a study of the strategic approach for motivating human performance in organizations through a total compensation system. The focus of the course will be on a blending of compensation management theory and trends with specific strategies regarding creating a corporate compensation system. Theoretical models from economics, psychology, and sociology are integrated in analyses of issues of wage structuring, the design of incentives, and wage level. Practical exercises in the design of compensation systems are employed. 3 credits.

MBA 6310 Project Management
Prerequisite: MBA/MSE 5000; MBA 5120; MBA 5200.
A study of effective project planning and management. Topics covered include: project goals and objectives, feasibility study including estimation of completion times and costs, evaluation and review, incentives, and quantitative analysis. Case studies and project man-agement software will be used extensively. 3 credits.

MBA 6400 International Marketing
Prerequisite: Core courses.
This course focuses upon the four decision areas of marketing: product decisions, pricing decisions, promotion decisions, and distribution decisions in a global context. Emphasis will be placed upon a whole-strategy approach to entering global markets. The mechanics of import/export will also be addressed. 3 credits.

MBA 6420 Marketing Research
Prerequisite: Core courses.
A study of the generation, organization, interpretation, and use of marketing Information in the business enterprise. The strategic role of marketing information is emphasized. Topics covered include: sources of information, research design and implementation, hypothesis testing, and problem-solving/decision-making. 3 credits.

MBA 6430 Professional Selling & Sales Force Management
Prerequisite: Core courses.
An exploration of the knowledge, tactics and strategies for building and sustaining a contemporary sales organization. This study enables students to develop personal selling skills as well as the knowledge for managing a sales force. The management issues discussed in this course include hiring, training, and motivating salespersons as well as sales forecasting, planning and sales force organization. 3 credits.

MBA 6440 Advertising & Promotion Management
Prerequisite: Core courses.
Companies of all sizes face challenging decisions on how to reach prospects and retain their current customer base. The ever-changing economy, predicting and meeting consumer demands, the growth of ethnic markets, emerging technologies and the changing demographics are issues that companies face when advertising and promoting their product. Prior knowledge in market research will enable you to implement the key advertising principles and practices while providing you with the knowledge on how IMC (integrated marketing communication) plays a critical role in building customer relationships and brands. 3 credits.

MBA 6490 Special Topics in Marketing
Prerequisite: MBA varies.
Directed study of a special body of

subject matter in the field of marketing. 3 credits. This course may be repeated for additional credit.

MBA 6500 Small Business Management
Prerequisite: Core courses.

A study of the smaller business enterprise and the special management issues and challenges faced by the proprietor/entrepreneur. Emphasis will be given to problem-solving and decision-making in the major functional areas common to small enterprises. Case studies will be used. 3 credits.

MBA 6600 Employment Law
Prerequisite: Core courses.

A review of the major regulatory influences that affect human resource management. The regulatory focus will include civil rights, compensation and benefits, employee health and safety, along with labor relations legislation. 3 credits.

MBA 6610 Seminar in Human Resources
Prerequisite: Core courses.

Students will attend the National Convention for the Society of Human Resource Management (SHRM). This course is a capstone event that requires professional membership in the SHRM and the opportunity to become professionally certified. Most issues addressed at the conference will be globally related and will include: sexual harassment, compensation planning, disabilities, flexible workplaces, global education, legal perspectives, along with approximately 100 other topics. In addition, the networking and the trade show are spectacular conference events. 3 credits.

MBA 6690 Special Topics in Human Resources
Prerequisite: Varies.

Directed study of a special body of subject matter in the field of human resources. 3 credits. This course may be repeated for additional credit.

MBA 6700 E-Business Technology
Prerequisite: Core courses.

This course gives an overview of the technologies relevant to electronic business including strategic planning issues such as operating systems, networking, enterprise resource planning, supply chain management, computer security, electronic transaction processing, and other e-business issues. After completing this course, students should be able to understand the functions of the technologies that support e-business. 3 credits.

MBA 6800 Accounting Automation
Prerequisite: Core courses.

The objectives of this course are: (1) to present and integrate accounting principles in such a way that no prior knowledge of computerized accounting is required; (2) to provide a hands-on approach to learning how modern computerized automated accounting systems function; and (3) to provide knowledge and hands-on experience in integrating accounting with other business applications such as spreadsheets and word processors. 3 credits.

MBA 6810 Communication for Accountants
Prerequisite: Core courses.

This course is designed for MBA accounting majors to acquire and practice the skills for effective CPA/client communications and to apply these skills during the written portions of the computer-based CPA exam. Emphasis will be placed on AICPA criteria of coherent organization, conciseness, clarity, responsiveness to questions, appropriateness to readers, and use of Standard English. Assignments will include CPA/client communications such as Letters of Engagement, communicating results of accounting reviews, accounting opinions, and notes to financial statements. 3 credits.

MBA 6820 Fraud Examination
Prerequisite: Core courses.

This course will emphasize the conduct of fraud examinations, including a discussion of specific procedures used in forensic accounting examinations and the reasoning behind the use of these procedures. Detection, investigation, and prevention of specific types of fraud committed against organizations and individuals. 3 credits.

MBA 6860 Becker Review
Prerequisite: At least 36 credits.

Becker Review - A four-part review course designed to prepare the student to sit for the online CPA Exam. The four parts covered are:

- Financial Accounting and Reporting: This module covers general accounting concepts tested in this part of the CPA Exam. Coverage includes GAAP (Generally Accepted Accounting Principles) for business enterprises, not-for-profit organizations, and governmental entities. It also addresses the necessary application skills.
- Auditing and Attestation: This module covers auditing practices and the required attestation as tested on this part of the CPA Exam. Coverage includes auditing procedures, GAAS (Generally Accepted Auditing Standards), and other related attest engagements. It also addresses the skills needed for application to those engagements, thus moving from theory to practice.
- Business Environment and Concepts: This module covers general business related topics as tested in this part of the CPA Exam. Coverage includes knowledge of general business environment and business concepts that candidates must know in order to understand the underlying business reasons for and accounting implications of business transactions. In addition, it also addresses the skills needed to apply that knowledge.
- Regulation: This module covers regulatory issues that are tested on this part of the CPA Exam.

Coverage includes federal taxation, ethics, professional and legal responsibilities, and business law. It also addresses essential skills needed to apply this knowledge. 6 credits.

MBA 7000 Business Policy & Strategy
Prerequisite: At least 36 credits.

Enrollment requires advisor's approval. A review of the applied research for managerial planning decisions and actions that assist in determining the long-run performance of organizations. Emphasis is placed on the process of strategy formulation, implementation, evaluation, and control for organizations of all sizes. 3 credits.

MASTER OF SCIENCE IN ENGINEERING MANAGEMENT

MSE 5000 Introduction to Engineering Management

An overview of the field of engineering management including, technical, management and integrated issues. Tools helpful throughout the program, such as research skills, will be introduced. The first course in the program. 3 credits.

MSE 6010 Environmental Health & Safety

Prerequisite: MBA 5000 or MSE 5000.

An introduction to the state and federal regulations for safety and environmental compliance. This course also covers ISO standards for environmental health and safety. Students will learn to identify how standards apply to various industries and will apply these skills in performing an audit to determine whether operations conform to the standards. 3 credits.

MSE 6020 Designing for Lean Manufacturing

Prerequisite: MBA 5000 or MSE 5000.

A study of the principles and practices necessary to establish/maintain a lean operation. Concepts covered include: theory of constraints, takt time, pull systems, lean accounting, value stream mapping, waste free manufacturing, workplace organization, quick change-over, just-in-time, and mistake-proofing. Through hands-on exercises, students will learn to apply these concepts in real-world situations. 3 credits.

MSE 6030 Enterprise Resource Planning

Prerequisite: MBA 5000 or MSE 5000.

Explores the relationship of existing and emerging processes and technologies to manufacturing strategy and supply chain-related functions. This course addresses: aligning resources with the strategic plan, configuring and integrating operating processes to support the strategic plan, and implementing change. Concepts include supplier relationship management (SRM), strategic sourcing, throughput supply chain measurements such as inventory dollar days and throughput dollar days, product life cycle management (PLM), and customer relationship management (CRM). 3 credits.

MSE 6040 Computer Integrated Manufacturing

Prerequisite: MBA 5000 or MSE 5000

Integration of facilities (machines tools, robotics) and the automation protocols required in the implementation of computer integrated manufacturing are studied. Specific concepts will include concurrent engineering, rapid phototyping, interfaces between computer-aided design (CAD) and computer-aided manufacturing systems (CAM), and control of manufacturing systems: numerical control (NC) and computer numerical control (CNC); programmable logic controller (PLC); computer aided process planning (CAPP) and manufacturing scheduling. 3 credits.

MSE 6050 Statistical Methods in Quality Assurance

Prerequisite: MBA 5000 or MSE 5000.

The quantitative aspects of quality are studied, such as control charts, process capability, reliability, and design of experiments. 3 credits.

MSE 6060 Legal Implications for Engineering Managers

Prerequisite: MBA 5000 or MSE 5000.

A study of patent law, product liability, labor law and other legislation relevant to the engineering discipline. 3 credits.

MSE 7000 Advanced Topics in Engineering Management

Integrates the elements of engineering management in a capstone, project-based environment. Last course of the program. 3 credits.

MASTER OF SCIENCE IN MANAGEMENT

MSM 5100 Qualitative Decision-Making

Prerequisite: MBA 5000.

This course will aid the student in using qualitative methods to identify the root cause of problems in business, evaluate alternative responses to these problems, and propose solutions. Emphasis is placed on the application of qualitative research methods to specific business problems and managerial decision-making. The course introduces methods that will be used to collect and interpret data for the applied management project capstone course (e.g., surveying, interviewing, and conducting focus groups). 3 credits.

MSM 5125 Accounting & Finance for Managers

Prerequisite: MBA 5000.

The course touches on the planning and control responsibility of managers and surveys the acquisition, analysis, and reporting of accounting information. The course also focuses on impact of financial data on effective management decision-making. The links between finance and strategic planning and implications for the overall health and success of the organization are explored. 3 credits.

MSM 5350 Customer Relationship Management

Prerequisite: Core courses.

Students will analyze organizations to develop effective strategies for customer relationship management. Students will evaluate customer touch points to improve customer service and build customer loyalty. Students will develop models to identify and measure individual perceptions to determine real customer needs. 3 credits.

MSM 5400 Negotiation Skills

Prerequisite: Core courses.

Introduces the process of mutual gain by developing long-term relationships with negotiation partners. It will concentrate on strategies that are successful in business and will cover topics such as: separating the problem from the person, invention of options, and best alternatives. The course will utilize exercises and simulations. 3 credits.

MSM 6400 Managing Change

Prerequisite: MBA 5000.

This course examines the role of change in organizations. A theoretical background in organization development will be

introduced in tandem with practical skills and knowledge of change management. Students will define change, analyze factors that affect change, and learn how to effectively facilitate change in their organizations. 3 credits.

MSM 7200 Applied Management Project
Prerequisites: MSM 5100; MSM 5125; MSM 6400.

This reality-based capstone course requires the student to synthesize and integrate the theoretical and practical knowledge that has been learned from prerequisite courses in the MSM curriculum. The completion of this course includes one of two tracks: an applied company project or an academic "mini-thesis." Students will design and implement projects that focus on real-world problems. Students may work on problems within their own companies, organizations to which they belong, or organizations with which the university has a relationship (e.g., alumni companies). As a second option, the student may choose an academic "mini-thesis." The instructor must approve the subject matter of the project. 3 credits.

MASTER OF SCIENCE IN ORGANIZATIONAL LEADERSHIP

MSOL 5000 Leadership Styles & Development

This course provides a comprehensive analysis of major leadership theories and models. This exploration and assessment of personal leadership style and leadership dimensions leads to a final course outcome of a leadership journey assessment and action plan for each student. 3 credits.

MSOL 5200 Executive Communication

This course examines the relationship between communication theory and leadership effectiveness. Effective communication models for leader-member exchange and mass communication are examined. Also, students examine, compare and contrast recommended best practices in executive communication, their own communication style and their beliefs about the impact of individual communication style on others. 3 credits.

MSOL 5300 Research Methods

This course provides the student with an opportunity to explore the issues, procedures and problems associated with methods of qualitative and quantitative research models. Students will review research and develop their own capstone research proposal. 3 credits.

MSOL 6300 Team Building

An introduction to team dynamics and group process. Leadership skills needed to build teams are discussed: meeting management, team building, assessment, roles and responsibilities, characteristics of successful teams, strategies for designing and supporting work teams, and high performance team management. 3 credits.

MSOL 5500 Financial Concepts for Leaders

This course provides an overview of the financial concepts that are necessary for responsible fiscal management of an organization. This course also focuses on impact of financial data on effective management and decision-making. The links between finance and strategic planning and implications for overall health and success of the organization are explored. 3 credits.

MSOL 6500 Global Leadership Perspectives

Examines issues related to leading an increasingly diverse workforce. Diversity-related issues such as social identity, socialization, human resource implications, team dynamics and organizational strategies to promote equal opportunity are discussed. Emphasis on the importance of a leader's global perspective in multicultural and multinational organizations. 3 credits.

MSOL 7300 Leadership Project

This capstone course requires the student to synthesize and integrate theoretical and practical knowledge learned throughout the leadership curriculum. Students will complete the research proposed in MSOL 5300, a culminating leadership project. Students will diagnose and present a problem to solve, design and complete a research study, analyze data, and make recommendations. 3 credits.

PH.D. IN GLOBAL LEADERSHIP

HEA 7001 Theories & Research in Academic Leadership

Critically analyze theories, research and best practices about academic leadership and culture employed by individuals and organizations in higher education in the United States and globally. How culture, national and international politics, and institutional mission inform higher education leadership is examined. Mission, vision and function of public, private, not for profit and for profit colleges and universities; leadership roles; governance functions including shared governance; union and non-union organizations; relationships with internal and external constituencies; problems of practice and power will be analyzed. 3 credits.

HEA 7002 Higher Education Policy & Accountability

Policy and issues in higher education. Analysis of public expectations of higher education including accountability for student learning and transparency of operating functions. Contemporary public policy issues such as access, affordability, affirmative action, funding for scientific research are analyzed. Practices in accreditation, relationships among institutions to maximize opportunities for students and to provide diverse experiences in order to be prepared to enter the global society, and strategies to adapt to expanding reporting requirements will be compared and critically analyzed to determine best practices. 3 credits.

HEA 7003 Legal Issues in Higher Education

Higher education legal processes, rights, responsibilities, duties and liabilities of faculty, administrators, and students within the con-text of higher education. Topics such as academic freedom, affirmative action, free speech, disability rights and access/use of electronically accessed information will be analyzed. Studies from constitutional, statutory, and case law will be addressed. 3 credits.

Graduate Course Descriptions (continued)

HEA 7004 Higher Education Finance & Resource Management

The acquisition and allocation of funds and resources in higher education are studies. Sources and methods of securing and managing funds. Design and leadership of budgeting processes to address the institution's strategic planning processes and linkage to mission and purposes. Financial formulas to determine institutional viability. Strategies to manage physical, technology, human, and financial re-sources to assure continuity. 3 credits.

HEA 7005 Comparative Higher Education

Comparative study of current trends in higher education in the United States and globally including curricular models, delivery methods, cultural influences and implications; global institutional partnerships; governmental involvement, accountability and reporting requirements. 3 credits.

HEA 7006 The Contemporary College Student

Intellectual, social, psychological, and cultural contexts of the student experience. Leadership role in meeting student and societal expectations for integrated learning and social experiences. Providing appropriate and high quality experiences to students of varying abilities, needs and expectations. 3 credits.

LDS 7001 Leadership Theory & Research

A foundational course in the critical analysis of seminal theoretical and empirical leadership theories, research and best practices. The concepts and dimensions of leadership are evaluated from the early trait and behavioral theories to the more recent theories which emphasize transformational and servant leadership models. Ethics and morality in leadership decision-making and case studies that examine emerging leadership situations are also analyzed. This course is taken within the first 0 to 18 credits of the Ph.D. program. 3 credits.

LDS 7002 Leading in a Time of Change

Literature and best practices related to the emerging roles of the leader as an agent of change are examined. Theories and models of change management are evaluated including organizational learning, organizational development, appreciative inquiry, sense-making and contingency approaches. Also examined are forces for change, diagnosis for change, visioning, resistance to change, the recipients of change, and consolidating change. 3 credits.

LDS 7003 Communications in Global & Diverse Contexts

Communications literature and best practices are analyzed to understand and maximize human interaction in global and diverse contexts. Effective communication for various leadership roles is examined including interpersonal, small group, organizational, and public situations. Skills to develop intercultural competence and evaluating communication barriers that prevent the understanding of a leader's message are explored. 3 credits.

LDS 7004 Ethics, Governance & Social Responsibility

Ethical theories and research are examined, along with professional codes of conduct and best practices for effective ethical leader-ship in global organizations. A review of recurring ethical dilemmas results in the development of a personal code of ethics appropriate for global leadership. The literature and best practices related to the leader's role in promoting effective governance for a healthy organization along with social responsibility and sustainable development are examined. 3 credits.

LDS 7005 Global Leadership Development

From a global perspective, leadership development models are analyzed with a focus on organizational and individual outcomes. Leadership development practices are evaluated as they relate to and impact the development of intellectual capital, organizational innovation, talent management, succession planning and executive selection criteria. Leadership development programs for expatriates and effective modes of leadership development for different countries and cultures are analyzed. 3 credits.

LDS 7006 Developing Human Capital

Classic and recent research, models and best practices for the development of human capital are examined. Approaches to linking organizational strategy, culture, and human resources practices are evaluated with an emphasis on talent development and the use of human capital to create a competitive advantage. Processes to develop and measure individual and team performance are examined. The unique challenges of leading project, virtual and remote teams are analyzed. 3 credits.

LDS 7007 Global Strategic Leadership

Literature and best practices in the development of strategic initiatives are analyzed with the goal of achieving competitive advantage in the global marketplace. Qualities of strategic leadership and strategic processes are examined including strategy formation, tactical planning and decision-making throughout the organization, as well as pro-activity in addressing environmental challenges and cultural differences. Also analyzed are systems-thinking, "Best-in-Class" benchmarking and partnerships, and employee empowerment. 3 credits.

OLM 7001 Organizational Behavior & Culture

Critical analysis of theories, research, and best managerial practices which impact human behavior in organizational, national and global contexts. The study of how culture informs and shapes all aspects of behavior and communication is emphasized. With a focus on achieving long-term, high quality performance and highly engaged associates, the key dimensions of rapidly changing organizations and transnational organizations are examined including the psychology of individual differences, motivation, groups and interpersonal influence, and emerging complex organizational structures and processes. This course is taken within the first 0 to 18 credits of the Ph.D. pro-gram. 3 credits.

OLM 7002 Marketing Theory & Research

Critical analysis of foundational marketing theories and research including marketing mix, consumer behavior, direct marketing,

brand management, and marketing communications in economic and behavioral contexts. Also analyzed are emerging theories for 21st century marketing including international marketing, services marketing, social marketing, global marketing, and e-marketing. Research activities are examined such as data gathering and analysis of qualitative and quantitative information to drive marketing strategies. Con-temporary issues and challenges impacting the future of marketing are examined in terms of their influence on marketing management functions. This course is taken within the first 0 to 18 credits of the Ph.D. program. 3 credits.

OLM 7003 Service Science Management & Development

During the last twenty years most industrial and manufacturing economies have evolved into service and information-based economies. To advance this transformation within organizations a new, interdisciplinary field of "service science" has emerged that combines the relevant knowledge of science, business and technology. The literature and best practices of this emerging field are analyzed including the nature of service systems and their development, the management of systematic transformation, and strategic service management planning. A key dimension of service science to be examined is service innovation that will increase productivity and efficiencies, will grow revenues by developing new services, and will improve the service experience to increase customer loyalty and market share. 3 credits.

OLM 7004 Managing Innovation & the Learning Organization

Critical analysis of theoretical and empirical literature, and best practices about managing innovation and the learning organization. The key transformational role of technology and its impact on emerging core organizational learning capabilities are emphasized. Collaborative work environments, diffusion of innovation, systems thinking, and the technology adoption cycle are examined as means to improve organizational capabilities and managerial competencies required to promote innovation and a learning organization. The cultural structures and processes of a learning organization are explored. 3 credits

OLM 7005 Managing for Financial Performance & Accountability

Critical analysis of theoretical and empirical literature, and best practices for managing private and public organizations to achieve financial accountability and financial performance. Accounting as a managerial tool for assessment of business strategy and tactical implementation are examined. Principles of financial management focusing on the development and use of budgets for planning and control, demonstrating accountability, and establishing priorities within an organization are analyzed. The use of financial data to lead decision-making, links between finance and strategic planning, and Sarbanes-Oxley are explored. Creating shareholder value is analyzed, along with links to customer loyalty. Cash flow management, international financial reporting and consolidations employing currency conversions, and the standards of ethical behavior in various countries are examined. 3 credits.

OLM 7006 Strategic Development of Multinational Organizations

Critically analyze theoretical and empirical literature, and best practices of the strategic management processes for multinational organizations. Foundational concepts for competitive analysis and both short and long-term competitive success are examined including barriers to effective strategic management, Porter's competitive advantages system, and multinational strategic management development. The emerging literature and best practices of value chain analysis, supply chain management, and the global context of organizational sustainability are reviewed to provide recommendations to create and strengthen the organization's competitive advantage and to sustain superior performance. The structure, reporting responsibilities and centralized/decentralized strengths and weaknesses of a multinational organization are explored. 3 credits.

RES 6000 Descriptive & Inferential Statistics

Descriptive and inferential statistics, and interpreting and critiquing statistical results found in empirical studies. Quantitative data analysis required to answer research questions, test hypotheses, and establish psychometric qualities of measures for simple and complex research designs. A prerequisite for the Ph.D. program. 3 credits

RES 7001 Research Process & Critique

The research critique is the focus, where appraisal skills necessitate understanding of major research elements including the purpose of research, principles of observation, development of paradigms, laws, theories and hypotheses, definition and classification of variables, cause and effect, research designs, and principles of measurement are analyzed. Quantitative, qualitative, and mixed methods of data analyses are examined. 3 credits.

RES 7002 Scholarly Inquiry & Technical Writing

Prerequisite: RES 7001.

This course is designed to prepare the student for the conduct of scholarly inquiry and technical writing. Topics to be covered include: refining one's writing style, avoiding plagiarism, adhering to APA style, developing library search plans, conducting a review of literature, and critiquing the work of others. The course also provides an explanation of the preparation of the Qualifying Paper and initiates development of the qualifying paper. This course is taken between 19 and 36 credits of the Ph.D. curriculum. 3 credits.

RES 7003 Critical Analysis of Literature

Prerequisite: RES 7002 .

Critically analyzing literature, writing a literature review, writing requirements, and competencies for a qualifying paper. In developing the review, criteria are applied in analyzing and critiquing theoretical literature, critical analytic/review articles, qualitative and quantitative empirical studies, and specialized studies such as methodological, meta-analyses, and case studies. The review ends with a state-of-the-art

discussion of the literature which includes a synopsis, interpretations, theoretical and empirical conclusions, recommendations for future scholarly inquiry, and research strategies to address empirical recommendations. 3 credits.

RES 7004 Quantitative & Qualitative Methods Of Research

Prerequisites: RES 7003 and students should have substantial development of their qualifying paper.

A comparative analysis of research methods used in quantitative, qualitative, and mixed research. Examined are inductive, theory generating qualitative methods with descriptive designs such as the grounded theory, phenomenology, ethnography case study, historical research, and action research. Data collection methods using interviews of varying structure, direct observation, and participant observation, content and thematic analysis, coding, organizing, interpreting (manually or via computer), identify patterns (within and between groups), and interpreting results are analyzed. Students develop research questions and/or hypotheses and appropriate research methods, based on areas of future research emerging from their developing qualifying paper. 3 credits.

RES 7005 Advanced Statistical Software Applications: SPSS*

Prerequisites: RES 6000; RES 7004.

This course involves using a software application to analyze univariate, bivariate, and multivariate parametric and non-parametric descriptive and inferential statistics, and Interpreting, reporting, and presenting data analyses results. Quantitative data analysis required to answer research questions, test hypotheses, and establish psychometric qualities of measures in complex research designs. 3 credits.

RES 7999 Continuous Development of the Qualifying Paper

Students register in the section of their Qualifying Paper Advisor if necessary. Used during continuation of work on the Qualifying Paper. 1 credit per term. A maximum of 6 credits of RES 7999 may be taken.

RES 8001 Doctoral Research Seminar & Prospectus*

Under the principle guidance of the course instructor and in consultation with the dissertation chair, students develop the dissertation prospectus, complete a mock defense, and complete an IRB certification. Using key gaps found in the literature and research strategies to address those gaps, the qualifying paper may serve as the springboard for the dissertation topic. The dissertation prospectus presents the research problem, study purpose, justification (significance, feasibility, and researchable), and definition of terms; a brief synopsis of the literature, including research gaps, research questions, research hypotheses, and theoretical framework; and, the proposed research methods (research design; population, sampling plan, and setting; measurement/instrumentation; data collection procedures and ethical considerations; methods of data analysis; and, evaluation of research methods). Students that make sufficient progress, but do not complete all the course requirements by the end of term, will receive a grade of IP (course In Progress), and must next enroll in RES 8002 (1 credit) up to a maximum of six terms. Final grading is the responsibility of the course instructor who will seek input from the dissertation committee chair and is Pass (P)/Fail (F) or No Pass (NP). 3 Credits

RES 8002 Dissertation Proposal Development, Defense, & IRB Application

Used during continuation of work on the dissertation, this course is necessary to comply with the continuous registration requirement of the degree program. The course serves two purposes: (1) Students that made sufficient progress in RES 8001 but did not complete the prospectus and mock defense, and received an In Progress course grade (IP) during the first term of enrollment in RES 8001, may continue to work on the prospectus and mock defense with the RES 8001 course faculty for additional terms and enroll in RES 8002. (2) Students that passed RES 8001, enroll in RES 8002 in the dissertation chair's section, form a dissertation committee, develop the dissertation proposal, successfully defend the dissertation proposal before the dissertation committee, and submit an IRB application. A dissertation proposal includes completed first three chapters of the dissertation, and relevant front and back matter. The IRB application, which includes the Research Protocol, certifications and signatures, and curriculum vitae of the principal investigator, is submitted to the Institutional Review Board for Human Subjects Research (IRB). A maximum of 6 terms of RES 8002 may be taken. Final grading is the responsibility of the Dissertation Committee Chair and is IP grade or P grade. Prerequisite: RES 8001 (IP grade or P Grade). 1 to 6 credits (1 credit minimum, up to a maximum of 6 credits)

RES 8003 Dissertation Implementation

Used during continuation of work on the dissertation, this course is necessary to comply with the continuous registration requirement of the degree program. Students register in the section of their dissertation chair. RES 8003 is for students that have successfully defended the dissertation proposal, and are at any of the following stages: revising the IRB application; received IRB approval; approval by Dissertation Chair to implement the study; data collection; completed data collection; developing Chapters 4 or 5; finalizing the written dissertation, preparing for the dissertation defense.. Students must maintain compliance with all IRB policies during implementation and notify the IRB of data collection completion. In order to receive a passing grade (P) with each enrollment in RES 8003, students must demonstrate sufficient progress toward completion of the dissertation. A maximum of 6 terms of RES 8003 may be taken. Grading is the responsibility of the Dissertation Committee Chair and is Pass (P)/Fail (F) or No Pass (NP). Prerequisite: RES 8001 (P Grade), RES 8002 (submitted IRB application). (1 credit minimum, up to a maximum of 6 credits)

RES 8004 Defense & Completion of the Dissertation

Upon completion of all program require-

ments for the Ph.D., including a successful dissertation defense, approved written dissertation, submission of the final approved copies of the dissertation, completion of all publication requirements, and resolution of all financial or other issues at the University, the student registers for RES 8004 (Program Coordinator signature required). Enrollment in this course is required in the term of completion of all degree requirements. Grading is Pass (P) only. 1 credit.

**Requires successful completion of all required core and specialization course work, the additional degree program requirements, residency and continuous enrollment, progression requirements, the qualifying paper, and recommendation to doctoral candidacy.*

INDIANA **TECH**

Office of Admissions
1600 East Washington Blvd.
Fort Wayne, Indiana 46803

800.937.2448 ext. 2205
260.422.5561 ext. 2205

www.IndianaTech.edu