Department of Industrial Technology, Instructional Design, and Community College Leadership

Interim Department Head: Dr. Vance Durrington
Office: 103-A Industrial Education Building
Website: iswd.msstate.edu (http://iswd.msstate.edu)

The Department of Industrial Technology, Instructional Design, and Community College Leadership prepares students with marketable technology skills to pursue careers in a variety of professional settings, including K-12 schools, higher education, and an array of industry and business environments. The department offers two undergraduate bachelor's, three master's, Educational Specialist, and Doctor of Philosophy degrees.

Students may also complete the Veterans' Certificate Program (http://iswd.msstate.edu/current-students/programs/veterans/) that consists of 15 semester hours of coursework designed for anyone at any level who would like to serve veterans. Two minors consisting of 18 hours are also offered to students interested in either industrial technology or information technology services.

Information Technology Services Major (ITS) non-teaching

This curriculum is designed to prepare students for the use of computer-based information systems, particularly software applications and hardware, development and implementation of information technology end-user support, information technology project management, and technology training.

By completing the business requirements for the ITS degree, students may be eligible to receive a minor in Business Administration from the College of Business. ITS majors interested in a minor in business administration should contact an academic coordinator in room 106 McCool Hall.

The MSU Bulletin is not the final source of information; department advisement is critically important for course sequence and selection. Students should always get advisement and approval from their MSU advisor for course scheduling.

Industrial Technology Major (INDT) non-teaching

Major Advisors: Jody Buchanan, Jenn Dupre, Mickey Giordano, Kay Morgan, Swapnil Patole, Lara Threet, John Wyatt
Office: 110 IED Building

As industry evolves, so should education to meet new demands. The Industrial Technology program works with industry to meet their needs and close skills gaps seen in various industries. The Industrial Technology curriculum encourages hands on learning in the classroom utilizing technologies found in industry. The curriculum is designed to provide a well-rounded study of various areas of industry including maintenance, programming, design, safety, systems analysis, and communication and troubleshooting skills. The Industrial Technology program is a great fit for students who like working with their hands and learning by doing. Industrial Technology students are leaders in their chosen fields with employment opportunities on the rise. The department provides one-on-one advising for all Industrial Technology students on all campuses.

To this extent the curriculum is divided into three concentrations:

- Manufacturing & Maintenance Management
- Industrial Automation
- Industrial Packaging
- Industrial Coatings
- Process Technology

These concentrations are designed to give students a specialization that they can take into the workforce and build upon throughout their industrial career. Graduates should quickly become proficient in both the supervisory and administrative roles of dealing with personnel, and depending upon the concentration selected, the graduate should become adept in the various aspects of the manufacture, automation, coatings, design, safety of industrial products and systems analysis. Employment opportunities are excellent for this degree.

The MSU Bulletin is not the final source of information. Departmental advisement is critically important for the course sequence and selection. Students should always get advisement and approval from their MSU advisor for course scheduling.

Upper division courses (3000 level and up) must be taken at a senior college or university. See a faculty advisor for prerequisites and proper course sequence.

NOTE: This curriculum lends itself well to a minor in Business Administration or Marketing.

Information Technology Services Major (ITS) non-teaching

General Education Requirements

English Composition		
EN 1103	English Composition I	3
or EN 1104	Expanded English Composition I	
EN 1113	English Composition II	3
or EN 1173	Accelerated Composition II	
Creative Discovery		**3**
See General Education requirement		
Humanities		**6**
see General Education requirement		
Social/Behavioral Science		**6**
See General Education requirement		
Quantitative Reasoning		**3**
ST 2113	Introduction to Statistics	
or BQA 2113	Business Statistical Methods I	
Science		**6-8**
Natural Science w/lab - see General Education courses		
Natural Science w/lab - see General Education courses		
Math/Science Elective		**3**
See General Education courses		
Total Hours		**33-35**

Major Core

College Core		
Oral Communication Requirement		
CO 1003	Fundamentals of Public Speaking	3
or CO 1013	Introduction to Communication	
Computer Literacy Requirement		
TECH 1273	Computer Applications	3
Writing Requirement		
MGT 3213	Organizational Communications	3
or INDT 3813	Technical Writing and Presentation for Industry	
Major Core		
Business Courses		
ACC 2013	Principles of Financial Accounting	3
ACC 2023	Principles of Managerial Accounting	3
BL 2413	The Legal Environment of Business	3
EC 2113	Principles of Macroeconomics	3
EC 2123	Principles of Microeconomics	3
MGT 3113	Principles of Management	3
MGT 3513	Introduction to Human Resource Management	3
BIS 1523	Web Development I	3
BIS 3233	Management Information Systems	3
Technology Courses		
TECH 2123	Database Management	3
TECH 2133	Spreadsheet Design and Analysis	3
TECH 3133	Administrative Management and Procedures	3
TECH 4543	Information Processing	3
TECH 4563	Introduction to Data Networks	3
TECH 4573	Data Networks II	3

TECH 4583	Graphics and Web Design	3
TECH 3213	Call Center Management	3
TECH 3463	Computer Repair and Maintenance	3
TECH 3623	Designing Technology Training	3
TECH 4203	Emerging Technologies	3
TECH 4343	Information Technology Project Management	3
TECH 4623	Delivery and Evaluation of Technology Training	3
TECH 4683	Senior Seminar in Learning and User Experience Design	3
TECH 4743	Elements of Electronic Desktop Publishing	3
TECH 4753	Video and Audio Production	3
Approved Elective		3
Total Hours		**87**

Minor in Information Technology Services

The Information Technology Services minor is for students who wish to learn technology, yet are not majoring in ITS. A minor in ITS will aid students in becoming familiar with the general concepts of information technology services and sub-components such as instructional technology, computer repair, and multimedia development and design.

To obtain this minor, a minimum of 18 hours must be taken from the following courses:

TKB 3133		3
TKB 4283		3
TKB 4543		3
TKB 4563		3
TKB 4583		3
TKT 3463		3
TKT 4343		3
TKT 4743		3
TKT 4753		3
TKT 4813	Introduction to Instructional Systems	3

BS in Industrial Technology (INDT)

Major Advisors: Dr. John Wyatt and Mickey Giordano
Office: 110 IED Building

General Education Requirements

English Composition		
EN 1103	English Composition I	3
or EN 1104	Expanded English Composition I	
EN 1113	English Composition II	3
or EN 1173	Accelerated Composition II	
Creative Discovery		**3**
See General Education courses		
Humanities		**6**
See General Education courses		
Social/Behavioral Science		**6**
See General Education courses [2]		
Quantitative Reasoning		**3**
MA 1313	College Algebra (or higher Math)	
Natural Sciences		**8**
CH 1043	Survey of Chemistry I	
& CH 1051	and Experimental Chemistry (or higher)	

PH 1013 & PH 1011	Physical Science Survey I and Physical Science Laboratory I (or higher)	
Extra Science (choose one)		**3**
PH 1023	Physical Science Survey 2 (or higher)	
CH 1213	Chemistry I	
Total Hours		**35**

Major Core

MA 1613	Calculus for Business and Life Sciences I	3
or MA 1713	Calculus I	
BQA 2113	Business Statistical Methods I [1]	3
or MA 2113	Introduction to Statistics	
or ST 2113	Introduction to Statistics	
Introductory Skills		
INDT 1003	Technical Drafting and Print Reading	3
INDT 1813	Basic Industrial Electricity and Electronics	3
INDT 2113	Introduction to PLC Programming	3
INDT 2123	Introduction to CNC Programming	3
INDT 3813	Technical Writing and Presentation for Industry	3
Management Skills		
INDT 3063	Industrial Human Relations	3
INDT 3373	Forecasting and Cost Modeling	3
ACC 2013	Principles of Financial Accounting	3
or BL 2413	The Legal Environment of Business	
or MGT 3823	Socially Responsible Leadership	
or any MGT 3000+ level course approved by advisor and instructor		
General Knowledge		
INDT 3043	Industrial Safety	3
INDT 3223	Industrial Materials	3
INDT 3243	Industrial Metrology	3
INDT 3363	Motion and Time Study	3
INDT 4224	Quality Assurance	4
Seminars		
INDT 1001	Introduction to Industrial Technology	1
INDT 3101	Junior Seminar	1
INDT 4801	Senior Seminar	1
Oral Communication Requirement		
Satisfied by successful completion of INDT 3044, INDT 3063, INDT 3363, and INDT 3813		
Writing Requirement		
Satisfied by successful completion of INDT 3063 and INDT 3813		
Computer Literacy		
Satisfied by successful completion of INDT 1203, INDT 3343, INDT 3373, INDT 3813, and INDT 4801		

Footnotes

1 Required for General Business Administration minor
2 EC 2113 and EC 2123 recommended for business minors

Choose one of the following concentrations:

Industrial Automation Concentration (IAUT)

The industrial automation concentration is designed for students who wish to enter a career in the automation of manufacturing processes. This concentration is concerned with fixed automation, robotics, and the trouble shooting of automated systems and their role in the manufacturing environment. This concentration lends itself to a general business administration minor.

INDT 2533	Processing of Oil and Gas	3
INDT 2613	Industrial Fluid Power	3
INDT 3103	Advanced Industrial Electricity and Electronics	3
INDT 4103	Industrial Control Systems	3
INDT 4203	Automated Systems	3
INDT 4233	Maintenance Management	3
INDT 4303	Industrial Robotics	3
INDT 4403	Automated Systems II	3
Concentration Electives (choose 3)		9
INDT 2323	Welding Technology	
INDT 2343	Parametric Modeling for 3D Design	
INDT 3133	Process Equipment and Instrumentation	
INDT 3683	CNC Machining Processes	
INDT 4213	Survey of Energy Sources and Power Technology	
INDT 4263	Manufacturing Technology and Processing	
INDT 4463	Manufacturing Technology & Processes II	
Additional INDT Electives - See advisor		6
Total Hours		**123**

Industrial Coatings Concentration

The industrial coatings concentration provides classroom instruction and hands-on, practical experience to prepare students for employment in the industrial coating field. The materials prepare individuals to prepare and treat surfaces, apply various coating materials, and analyze quality at all stages of the process. The concentration emphasizes safe work practices, quality surface creation and preparation, and effective coatings while learning about coating equipment, application, and properties.

INDT 2613	Industrial Fluid Power	3
INDT 3103	Advanced Industrial Electricity and Electronics	3
INDT 3753	Introduction to Industrial Coatings	3
INDT 3853	Introduction to Powder Coatings	3
INDT 3863	Introduction to Liquid Coatings	3
INDT 4103	Industrial Control Systems	3
INDT 4303	Industrial Robotics	3
INDT 4373	Lean Six Sigma	3
Concentration Electives (choose 3)		9
INDT 2323	Welding Technology	
INDT 2343	Parametric Modeling for 3D Design	
INDT 2353	Industrial Computer Aided Drafting and Design	
INDT 3873	Introduction to E-Coatings	
INDT 4243	System Design for Industrial Finishing Applications	
INDT 4263	Manufacturing Technology and Processing	
INDT 4463	Manufacturing Technology & Processes II	
Additional Electives		6
Additional electives requirement is satisfied by successful completion of any INDT 3000+ level course		
Total Hours		**123**

Industrial Packaging Concentration

The industrial packaging concentration provides classroom instruction and hands-on, practical experience to prepare students for employment in the packaging development field. The materials prepare individuals to identify the needs and design sustainable, effective packaging products. The concentration emphasizes design principles, material characteristics, and sustainable products.

INDT 2343	Parametric Modeling for 3D Design	3
INDT 3703	Principles of Packaging	3
INDT 3713	Packaging Materials	3
INDT 4103	Industrial Control Systems	3
INDT 4203	Automated Systems	3
INDT 4373	Lean Six Sigma	3
INDT 4703	Sustainable Packaging	3
MKT 3323		3
Concentration Electives (choose 3)		9
INDT 2353	Industrial Computer Aided Drafting and Design	
INDT 2613	Industrial Fluid Power	
INDT 4233	Maintenance Management	
INDT 4263	Manufacturing Technology and Processing	
INDT 4303	Industrial Robotics	
INDT 4403	Automated Systems II	
INDT 4443	Additive Manufacturing and Rapid Prototyping	
INDT 4463	Manufacturing Technology & Processes II	
INDT 4713	Healthcare and Food Packaging	
Additional Electives		6
Additional electives requirement is satisfied by successful completion of any INDT 3000+ level course		
Total Hours		**123**

Process Technology Concentration

The process technology concentration provides classroom instruction and hands-on, practical experience to prepare students for employment with chemical/petrochemical products. The concentration emphasizes safe and efficient work practices while learning about the equipment, instrumentation, systems, and operations related to chemical processing.

INDT 1133	Introduction to PTEC	3
INDT 2323	Welding Technology	3
INDT 2353	Industrial Computer Aided Drafting and Design	3
INDT 2613	Industrial Fluid Power	3
INDT 3133	Process Equipment and Instrumentation	3
INDT 3233	Process Systems and Operations	3
INDT 3333	Process Quality and Troubleshooting	3
INDT 4233	Maintenance Management	3
Concentration Electives (choose 3)		9
INDT 2343	Parametric Modeling for 3D Design	
INDT 2533	Processing of Oil and Gas	
INDT 3103	Advanced Industrial Electricity and Electronics	
INDT 3323	Welding Technology II	
INDT 4103	Industrial Control Systems	
INDT 4303	Industrial Robotics	
Additional Electives		6
Additional electives requirement is satisfied by successful completion of any INDT 3000+ level course		
Total Hours		**123**

Manufacturing & Maintenance Management Concentration (MFMA)

The manufacturing and maintenance management concentration is designed for students who want to enter a career in the manufacturing sector. This concentration is concerned with the management, maintenance, and day-to-day operation and improvement of manufacturing processes. This concentration lends itself to a general business administration minor.

INDT 2343	Parametric Modeling for 3D Design	3
INDT 3103	Advanced Industrial Electricity and Electronics	3
INDT 3683	CNC Machining Processes	3
INDT 4233	Maintenance Management	3
INDT 4263	Manufacturing Technology and Processing	3
INDT 4373	Lean Six Sigma	3
INDT 4443	Additive Manufacturing and Rapid Prototyping	3
INDT 4463	Manufacturing Technology & Processes II	3
Concentration Electives (choose 3)		9
INDT 2323	Welding Technology	
INDT 2353	Industrial Computer Aided Drafting and Design	
INDT 3133	Process Equipment and Instrumentation	
INDT 3323	Welding Technology II	
INDT 3333	Process Quality and Troubleshooting	
INDT 4103	Industrial Control Systems	
INDT 4203	Automated Systems	
INDT 4303	Industrial Robotics	
Additional Electives		6
Additional electives requirment is satisfied by successful completion of any INDT 3000+ level course		
Total Hours		**123**

Minor in Industrial Technology

A minor in Industrial Technology will help non-industrial technology students who wish to enter the field of manufacturing. Students will become familiar with the basic concepts of industrial practices and the machines and components that make up many manufacturing companies. This is combined with laboratory work to enhance these concepts and to give an understanding of how the many manufacturing systems are integrated. Academic advising is available from the Industrial Technology program in the Industrial Education Building.

A minimum of 21 hours must be taken to obtain the INDT minor. A minimum of 12 hours must be taken at MSU to receive the minor. Note that some choices requires others as prerequisites.

Required Courses		
INDT 1203		3
INDT 2113	Introduction to PLC Programming	3
INDT 2123	Introduction to CNC Programming	3
INDT 2613	Industrial Fluid Power	3
Electives - Select any three:		
INDT 3044		
INDT 3223	Industrial Materials	
INDT 4224	Quality Assurance	
INDT 4233	Maintenance Management	
INDT 4263	Manufacturing Technology and Processing	
INDT 4303	Industrial Robotics	