Spring Semester 2017
Schedule of Courses

Registration deadline:
Dec. 19, 2016
Payment deadline:
Jan. 3, 2017
Classes begin:
Jan. 9, 2017
Degree Options

Ohio State ATI, located in Wooster, Ohio, offers Associate of Applied Science and Associate of Science (the transfer option) degrees in one or more of 27 majors and various certificate programs. Each program of study provides excellent career preparation, combining coursework with a variety of hands-on practical experiences and the opportunity to make professional contacts with industry insiders. Ohio State ATI maintains a 99% job placement rate for all graduates within four months of graduation.

Continuing Education & Lifelong Learning

Students of all ages attend Ohio State ATI, for both personal and professional reasons. Adult learners can attend on a part-time or full-time basis, whether auditing courses or completing courses for a grade. Ohio State ATI’s Business Training & Educational Services (BTES) staff can answer your questions about continuing education options and help you get enrolled.

Senior Citizen Options

Program 60 is a University-wide program offering adult learners age 60 or older the option of enrolling tuition-free! If you are 60 or older, you can enroll on a non-credit basis in the credit courses on our Wooster campus, given space available and instructor permission. While tuition is waived, Program 60 participants are reponsible for paying any laboratory fees.

Visiting Campus

We invite you visit us anytime. If you wish to meet with a faculty member or talk to someone about getting enrolled, please contact Jan at 330-287-7511 or elliott.3@osu.edu.

Business and Industry Training

Ohio State ATI’s Business Training & Educational Services (BTES) is a leader in workforce development and performance improvement training, from leadership development to technical maintenance skills. We are honored to have received the Team NEO Economic Development Plus Award in Workforce Development, two Program Excellence Awards from the Ohio Continuing Higher Education Association, and to have been partners in four Governor’s Workforce Excellence Awards.

If your company is looking for a better way to provide training and development within your workforce, contact BTES.

For More Information

For more information, to schedule a visit, or to register for classes, call 330-287-7511, email elliott.3@osu.edu, or visit our website at ati.osu.edu.

Two Easy Ways To Register

CALL Business Training and Educational Services at (330) 287-7511.

E-MAIL the BTES office at elliott.3@osu.edu.

Does your employer pay for education expenses? We accept purchase orders and credit cards!

In the event of insufficient enrollment, it may be necessary to cancel a course. If this is the case, you will be notified in advance and receive a full refund.

A one-time, non-refundable application fee of $60 is due upon application for first-time Ohio State university students.

The Ohio State University College of Food, Agricultural, and Environmental Sciences embraces human diversity and is committed to ensuring that all educational programs conducted by CFAES are available to clientele on a nondiscriminatory basis without regard to race, color, age, gender identity or expression, disability, religion, sexual orientation, national origin, or veteran status.

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<th>Credit</th>
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Tuition subject to change. Please contact us for more information.
Agricultural Communication

Agricultural Issues in Contemporary Society: 2367 (3 credits)
This course helps students develop a critical understanding of agricultural, environmental and related issues facing the United States and the world while improving their writing skills. This is a second writing course.

Day  Time  Location
Lecture M  5:20-7:25 p.m.  SK 201 or
Lecture T  5:20-7:25 p.m.  AT 124 and
Lab W  5:20-6:40 p.m.  SK 201 or
Lab Th  5:20-6:40 p.m.  AT 124

Oral Expression in Agriculture: 3130 (3 credits)
An introductory public speaking course that will analyze the communication process and prepare students enrolled to write and deliver speeches for various occasions and purposes.

Day  Time  Location
Lecture M, W, F  12:40-1:35 p.m.  SK 212 or
Lecture M, W, F  11:30-12:25 p.m.  AT 124 or
Lecture M, W, F  4:10-5:05 p.m.  AT 124


title:Agricultural, Environmental, & Development Economics

Principles of Food and Resource Economics: 2001 (3 credits)
Microeconomic principles applied to allocation issues in the production, distribution, and consumption of food and natural resource use.

Day  Time  Location
Lecture M, W, F  9:10-10:05 a.m.  AT 082 or
Lecture M, W, F  4:10-5:05 p.m.  SK 100

Managerial Records and Analysis: 2105 (3 credits)
Nature and need for business records, analysis and interpretation of essential records from manager/owner viewpoint; their use in small business practices.

Day  Time  Location
Lecture M, W, F  9:10-10:05 a.m.  SK 206 and
Lab T  10:20-11:15 a.m.  AT 200 or
Lab T  11:30-12:25 p.m.  AT 203 or
Lab T  12:40-1:35 p.m.  AT 203

Animal Sciences

Equine Feeding and Nutrition: 3131T (2 credits)
A study of the nutritional needs of equine and of the principles and practices involved in providing balanced rations to different nutritional classes of equine.

Day  Time  Location
Lecture T  12:40-1:35 p.m.  SK 225 and
Lab W  3:00-6:15 p.m.  SK 231

Horse Health and Disease: 3171T (3 credits)
Study of equine disease, lameness and emergency first aid with emphasis on preventative health care and the manager's role with the veterinary professional.

Day  Time  Location
Lecture T  1:50-2:45 p.m.  SK 205 and
Lecture Th  4:10-5:10 p.m.  SK 205 and
Lab F  8:00-10:05 a.m.  SK 100

Horse Breeding and Selection: 3151T (3 credits)
Principles of equine breeding management with emphasis on applied equine reproductive physiology, breeding methods, breeding stock management and basic genetics and selection.

Day  Time  Location
Lecture T  11:30-12:25 p.m.  SK 225 and
Lecture Th  8:00-8:55 a.m.  SK 225 and
Lab Th  10:20-12:25 p.m.  EQ 100

Applied Equine Reproductive Management: 3161T (2 credits)
Advanced course in equine reproductive management with emphasis on understanding and improving equine infertility; applications of current research; and development of technical skills.

Day  Time  Location
Lecture Th  1:50-2:45 p.m.  SK 225 and
Lab F  10:20-1:35 p.m.  EQ 100

Horse Judging and Evaluation: 3201T (2 credits)
Comparative evaluation of horse conformation by breed, assessment of performance in a variety of performance disciplines; development of tools for assessing and placing show horse classes.

Day  Time  Location
Lecture Th  12:40-1:35 p.m.  SK 205 and
Lab Th  1:50-5:05 p.m.  EQ 100

Principles of Livestock Health: 3170T (3 credits)
A basic introduction to the relationship between animal health and performance. Topics include: immunology, sanitation, disease etiology, and disease prevention, symptoms, and treatment.

Day  Time  Location
Lecture M, W, F  9:10-10:05 a.m.  SK 100

Principles of Swine Nutrition: 3133T (2 credits)
A study of the basic nutritional requirements of swine, common feedstuffs and ration balancing.

Day  Time  Location
Lecture M, W, F  3:00-3:55 p.m.  SK 215
Swine Production and Management II: 3403T (3 credits)
An advanced study of the principles of managing a commercial swine enterprise. Coordination of production programs, evaluating economic performance, and a survey of contemporary swine housing and equipment options.

Day  Time  Location
Lecture M, W  12:40-1:35 p.m.  SK 215 and
Lab T  10:20-12:25 p.m.  SK 231

Dairy Cattle Genetic Improvement: 3157T (3 credits)
Principles of inheritance and the genetic improvement of dairy cattle through cellular, qualitative, and population genetics; emphasizing breeding values, selection, and mating systems.

Day  Time  Location
Lecture M, W, F  10:20-11:15 a.m.  SK 212 and
Recitation T  9:10-11:15 a.m.  SK 212

Dairy Cattle Health Management: 3177T (4 credits)
A study of immunology and dairy cattle health management, including disease prevention, identification, and treatment of common diseases influencing the performance of dairy cattle.

Day  Time  Location
Lecture M, W, F  8:00-8:55 a.m.  SK 212 and
Lab Th  8:00-11:15 a.m.  SK 215 or
Lab Th  12:40-3:55 p.m.  SK 212

Livestock Genetic Improvement: 3150T (3 credits)
Principles of inheritance and the genetic improvement of livestock through cellular, qualitative, and population genetics; emphasizing breeding values, selection, and mating systems.

Day  Time  Location
Lecture M, W, F  10:20-11:15 a.m.  SK 225 and
Recitation T  12:40-2:35 p.m.  SK 225

Principles of Livestock Health: 3170T (3 credits)
A basic introduction to the relationship between animal health and performance. Topics include: immunology, sanitation, disease etiology, and disease prevention, symptoms, and treatment.

Day  Time  Location
Lecture M, W, F  12:40-1:35 p.m.  SK 225

Beef Production and Management: 3402T (3 credits)
The application of science and basic principles of nutrition, genetics, physiology, and marketing to the production and management of beef cattle in breeding and feeding production programs.

Day  Time  Location
Lecture M, W  1:50-2:45 p.m.  SK 201 and
Lab Th  1:50-5:35 p.m.  SK 231

Principles of Animal Nutrition: 3130T (2 credits)
A study of the nutrients and the basic principles involved in the feeding of domestic animals, including the characteristics/composition of feedstuffs and factors that affect feed utilization.

Day  Time  Location
Lecture M, W  10:20-11:15 a.m.  SK 100

Principles in Ruminant Nutrition: 3132T (2 credits)
Principles of beef cattle and small ruminant nutrient requirements and feeding management with emphasis on the critical evaluation and formulation of rations in current management situations.

Day  Time  Location
Lecture M, W, F  4:10-5:05 p.m.  AT 082

Animal Anatomy and Physiology: 3140T (4 credits)
An introductory study of the structure and functions of the various organ systems of domestic animals.

Day  Time  Location
Lecture M, W, F  11:30-12:25 p.m.  SK 100 and
Lab T  5:20-6:15 p.m.  SK 215 or
Lab T  6:30-7:25 p.m.  SK 215 or
Lab Th  4:10-5:05 p.m.  SK 215 or
Lab Th  5:20-6:15 p.m.  SK 215

Small Ruminant Production and Management: 3404T (3 credits)
The application of science and basic principles of nutrition, genetics, physiology, and marketing to the production and management of sheep, goats, and other small ruminants.

Day  Time  Location
Lecture T, Th  11:30-12:25 p.m.  SK 231 and
Lab T  3:00-3:55 p.m.  SK 231

Principles of Farm Business Management: 3800T (4 credits)
A study of economic and management principles involved in planning, organizing, operating, and administering a farm business; emphasis placed on developing a business plan and problem solving.

Day  Time  Location
Lecture T, Th  8:00-10:05 a.m.  AT 086 and
Lecture F  9:10-10:05 a.m.  AT 086 and
Recitation F  8:00-8:55 a.m.  AT 086 and
Lab W  8:00-10:05 a.m.  AT 086

Biological Sciences: Energy Transfer and Development: 1113 (4 credits)
Exploration of biology and biological principles; evolution and the origin of life, cellular structure and function, bioenergetics, and genetics.

Day  Time  Location
Lecture M, W, F  1:50-2:45 p.m.  SK 225 and
Lab T  8:00-11:15 a.m.  AT 181 or
Lab W  8:00-11:15 a.m.  AT 181

Biological Sciences: Form, Function, Diversity, and Ecology: 1114 (4 credits)
Exploration of biology and biological principles; evolution and speciation, diversity in structure, function, behavior, and ecology among prokaryotes and eukaryotes. A broad introduction to biology comprises both Biology 1113 and 1114.

Day  Time  Location
Lecture M, W, F  12:40-1:35 p.m.  SK 225 and
Lab Th  1:50-5:05 p.m.  AT 181

General Botany with Applications: 1250T (4 credits)
Introduction to the fundamental structures and processes of plants, including plant anatomy, physiology, morphology, reproduction, and genetics.

Day  Time  Location
Lecture M, W, F  4:10-5:05 p.m.  SK 030 and
Lab Th  9:10-11:15 a.m.  AT 181
Biotechnology

General and Applied Entomology: 2218T (3 credits)
Classification, identification, life cycles, external/ internal structures, and functions of insects; common insect pests and their damage; methods of control and their applications.

Day  Time  Location  
Lecture M, W, Th, F  12:40-1:35 p.m.  AT 086 and Lab Th  8:00-11:15 a.m.  AT 187  
January 9 – February 27

Business Technology

Software Applications: 1202T (1 credit)
An overview of basic computer skills and study of the features and capabilities of presentations, word processing, spreadsheet and database software as decision management aids.

Day  Time  Location  
Lab T  9:10-11:15 a.m.  AT 203 or Full Semester Class  
Lab M, W  5:20-7:25 p.m.  AT 200  
January 9 – February 27

Software Applications: 1202T (1 credit)
An on-line course covering the overview of basic computer skills and study of the features and capabilities of presentations, word processing, spreadsheet and database software as decision management aids.

Day  Time  Location  
Online, on your own time

Problem Solving with Spreadsheets and Databases: 2207T (2 credits)
A problem-solving approach to managing typical business scenarios utilizing spreadsheets and databases.

Day  Time  Location  
Lecture T  4:10-5:05 p.m.  AT 200 and Lab Th  4:10-6:15 p.m.  AT 200

General Economics: 1151T (3 credits)
Study of macro and micro-economic principles applicable to business, agricultural and personal financial decision-making.

Day  Time  Location  
Lecture T, TH  7:40-9:00 p.m.  SK 225

Fundamentals of Marketing: 2231T (3 credits)
A survey of the field of marketing including functions, policies, problems, structure, strategies, and opportunities.

Day  Time  Location  
Lecture M, W, F  10:20-11:15 a.m.  AT 082

Personal Selling: 2232T (3 credits)
A study of the basic principles and concepts of personal selling with emphasis on practical application and personal interaction.

Day  Time  Location  
Lecture M, W, F  1:50-2:45 p.m.  AT 081

Small Business Management: 2241T (3 credits)
A general study of the field of small business focusing on policies, strategies, organization, operation, and problems associated with the operation of an entrepreneurial enterprise.

Day  Time  Location  
Lecture M, W  12:40-1:35 p.m.  AT 082 and Lab Th  12:40-2:45 p.m.  SK 206

Supervision and Human Resource Management: 2244T (3 credits)
A study of supervision and human resource principles and practices that focus on recruitment, training, evaluating, and compensating employees for improved productivity.

Day  Time  Location  
Lecture M, W, F  8:00-8:55 a.m.  SK 201

Introduction to Cooperatives: 2248T (2 credits)
An examination of business organizations including cooperatives and non-cooperatives. Analysis of the role of government in American business, with emphasis on the history, legal basis, organization, and operation of cooperatives.

Day  Time  Location  
Lecture T, Th  5:20-7:25 p.m.  SK 212  
January 10 – February 23

Fundamentals of Business Finance: 2249T (3 credits)
A study of basic finance principles, such as financial institutions, time value of money, financial analysis, risk and return, budgeting, and investments.

Day  Time  Location  
Lecture M, W  1:50-2:45 p.m.  AT 082 and Lab T  3:00-3:55 p.m.  AT 082

Fundamentals of International Business: 2250T (3 credits)
An overview of international business including the environment, strategies, issues, decisions, and challenges that global businesses encounter.

Day  Time  Location  
Lecture M, F  10:20-11:15 a.m.  AT 152  
Recitation Th  9:10-11:15 a.m.  AT 152

Chemistry

Introduction to General Chemistry: 1100T (3 credits)
Develops the basic concepts of atomic structure, bonding theory, molecular structure, chemical reactions, solutions, equilibrium, and acid-base chemistry.

Day  Time  Location  
Lecture M, W, F  11:30-12:25 p.m.  SK 201

Elementary Chemistry: 1110 (5 credits)
Introductory chemistry for non-science majors, including dimensional analysis, atomic structure, bonding, chemical reactions, states of matter, solutions, chemical equilibrium, acids and bases, along with topics in organic and biological chemistry.

Day  Time  Location  
Lecture M, T, W, F  3:00-3:55 p.m.  SK 100 and Lab T  8:00-11:15 a.m.  AT 186 or Lab W  5:20-8:35 p.m.  AT 186 or Lab Th  8:00-11:15 a.m.  AT 186 or Lab Th  12:40-3:55 p.m.  AT 186 or Lab Th  5:20-8:35 p.m.  AT 186
General Chemistry I: 1210 (5 credits)
First course for science majors, covering dimensional analysis, atomic structure, the mole, stoichiometry, chemical reactions, thermodynamics, electron configuration, bonding, molecular structure, gases, liquids, and solids.
Day  Time  Location
Lecture M, T, W, F  3:00-3:55 p.m.  SK 201 and
Lab T  4:10-7:25 p.m.  AT 180

General Chemistry II: 1220 (5 credits)
Continuation of 1210 for science majors, covering solutions, kinetics, chemical equilibrium, solubility and ionic equilibria, qualitative analysis, thermodynamics, electrochemistry, descriptive chemistry, coordination compounds, and nuclear chemistry.
Day  Time  Location
Lecture M, T, W, Th  12:40-1:35 p.m.  SK 201 and
Lab T  8:00-11:15 a.m.  AT 180

Organic Chemistry II: 2520 (4 credits)
Continuation from 2510, including aromatic systems, carboxylic acids, carboxylic acid derivatives, amines, carbon-carbon bond-forming reactions, polymers, carbohydrates and amino acids.
Day  Time  Location
Lecture M, T, Th, F  9:10-10:10 a.m.  AT 129

Communication
Technical and Business Writing: 1115T (3 credits)
Principles of technical and business communication in the global setting with emphasis on practical applications for professional and business environments involving correct usage and documentation in writing, reading, speaking and listening.
Day  Time  Location
Lecture M, W, F  9:10-10:05 a.m.  SK 212

Community Leadership
Introduction to Agricultural Communication, Education, and Leadership: 2530 (2 credits)
Creating an awareness and understanding of the agricultural communication, education and leadership profession. The class will provide a basis for educating, communicating, and leading by synthesizing theoretical knowledge with practical application.
Day  Time  Location
Lecture M, W  12:40-1:35 p.m.  TBA

Comparative Studies
Introduction to World Literature: 2301 (3 credits)
Analysis of oral and written literatures of diverse cultures and historical periods.
Day  Time  Location
Lecture M, W  7:40-9:00 p.m.  SK 100 or
Lecture M, W, F  11:30-12:25 p.m.  SK 101 or
Lecture T, Th  7:40-9:00 p.m.  SK 201

Crops & Soil Technology
Integrated Pest Management: 2265T (2 credits)
A review and application of sustainable methods for controlling disease, insect, and weed pests in crops.
Day  Time  Location
Lecture T  11:30-12:25 p.m.  SK 137 and
Lab T  12:40-3:55 p.m.  SK 137

Introduction to Soil Science: 2300T (3 credits)
An introduction to soil physical, chemical, and biological properties related to plant systems, environmental quality, and construction.
Day  Time  Location
Lecture M, W, F  8:00-8:55 a.m.  SK 206

Introduction to Soil Science Laboratory: 2301T (1 credit)
Laboratory analysis of soil physical, chemical, and biological properties related to plant systems, environmental quality, and construction.
Day  Time  Location
Lab T  8:00-11:15 a.m.  AT 162 or
Lab T  12:40-3:55 p.m.  AT 162 or
Lab Th  8:00-11:15 a.m.  AT 162 or
Lab Th  12:40-3:55 p.m.  AT 162

Soil Management: 2324T (3 credits)
A study of sustainable-use of soil resources related to soil formation, mechanics, and erosion control.
Day  Time  Location
Lecture M, W  10:20-11:15 a.m.  SK 231 and
Lab W  1:50-5:05 p.m.  SK 206

Soil and Water Conservation Systems: 2040T (4 credits)
Introduction to erosion control, irrigation, drainage, and wetland systems with an emphasis on land surveying and mapping, system selection, and design.
Day  Time  Location
Lecture M, F  4:10-5:05 p.m.  SK 137 and
Lecture Th  11:30-12:25 p.m.  SK 137 and
Lab F  8:00-11:15 a.m.  SK 137

Grain and Oilseed Crops: 2411T (3 credits)
A study of the cultural practices and production principles for grain and oilseed crops.
Day  Time  Location
Lecture M, F  3:00-3:55 p.m.  SK 030 and
Lab T  4:10-6:15 p.m.  SK 030 or
Lab Th  4:10-6:15 p.m.  SK 030

Forage Crops: 2412T (3 credits)
A study of grasses, legumes, and forbs used in grassland agriculture for livestock production.
Day  Time  Location
Lecture M, F  12:40-1:35 p.m.  SK 206 and
Lab T  11:30-2:45 p.m.  SK 231 or
Lab Th  8:00-11:15 a.m.  SK 231 or
Lab Th  12:40-3:55 p.m.  SK 231

Principles of Farm Business Management: 3800T (4 credits)
A study of economic and management principles involved in planning, organizing, operating, and administering a farm business; emphasis placed on developing a business plan and problem solving.
Day  Time  Location
Lecture M  8:00-10:05 a.m.  AT 086 and
Lecture F  8:00-8:55 a.m.  AT 086 and
Lecture F  9:10-10:05 a.m.  AT 086 and
Lab W  8:00-10:05 a.m.  AT 086
## Engineering Technology

**Building Science: Mechanical Systems: 2345T (3 credits)**
Principles, equipment, and applications of building mechanical systems with emphasis on energy and resource conservation and sustainability.

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**Small Engine Basics: 2011T (4 credits)**
A study of the theory of operation, service and maintenance and repair of small off-road gasoline and diesel engines.

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**Engine Diagnosis and Repair: 2324T (3 credits)**
An advanced study of multiple cylinder diesel engine diagnostic techniques including repair and rebuilding procedures.

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**Fluids, Filtration, and Fluid Conveyance: 2224T (2 credits)**
Characteristics of hydraulic fluids; methods of filtering oils and of conveying pressurized fluids.

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**Components and Hydraulic Circuits: 2226T (2 credits)**
A study of advanced hydraulic component topics and of how fluid power components are integrated into a complete system, including performance characteristics and energy efficiency.

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**Component Rebuilding: 2221T (2 credits)**
Supervised laboratory experience with emphasis on developing and improving hydraulic component service competencies related to classroom and career activities.

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**Performance of Mobile Power Units: 2348T (2 credits)**
A study of operator comfort and safety, ballast, traction, stability, hitching, engine power ratings, fuel efficiency and other factors affecting the performance and application of mobile power units.

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**Instrumentation and Control Systems: 2248T (4 credits)**
Techniques and equipment used for instrumentation of fluid power systems for the purposes of data acquisition and control.

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<tbody>
<tr>
<td>Lecture T</td>
<td>5:20-7:25 p.m.</td>
<td>SK 105 and</td>
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<tr>
<td>Lecture Th</td>
<td>6:30-9:45 p.m.</td>
<td>SK 105 and</td>
</tr>
<tr>
<td>Lab Th</td>
<td>7:40-9:45 p.m.</td>
<td>SK 134</td>
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</table>

**Distributor Management: 2331T (2 credits)**
Organization and operation of distributor marketing of mobile equipment and fluid power components and systems; emphasis on service and parts distribution.

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<tbody>
<tr>
<td>Lecture T</td>
<td>7:40-9:45 p.m.</td>
<td>SK 136</td>
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</table>

**Introduction to Geographic Information Systems: 2050T (3 credits)**
A study of spatial relationships using global positioning and geographic information systems in urban and rural landscapes.

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<tr>
<td>Lecture M</td>
<td>9:10-10:05 a.m.</td>
<td>AT 203 and</td>
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<tr>
<td>Lab W, F</td>
<td>9:10-11:15 a.m.</td>
<td>AT 203</td>
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</tbody>
</table>

**Drafting & Computer-Aided Design: 2121T (3 credits)**
Principles and applications of technical drawing utilizing proper drafting techniques for creating two dimensional, scaled drawings both by hand and by using current computer-aided design software. Basic computer skills required.

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<tr>
<td>Lab Th</td>
<td>12:40-1:35 p.m.</td>
<td>AT 280 and</td>
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<tr>
<td>Lab Th</td>
<td>1:50-5:05 p.m.</td>
<td>AT 203</td>
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**Estimating and Scheduling: 2160T (3 credits)**
Estimating complete projects and developing project schedules for standard construction projects in the residential or commercial sectors of the industry.

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<td>SK 137 and</td>
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<tr>
<td>Lab M</td>
<td>6:30-8:35 p.m.</td>
<td>AT 203</td>
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**Construction Project Management: 2170T (3 credits)**
Principles and practices of construction project and construction business management.

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<td>4:10-6:15 p.m.</td>
<td>SK 137</td>
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</table>

**Construction Safety & Health: 2600T (2 credits)**
Health and construction safety awareness; focusing on OSHA 30-hour training and certification, OSHA mandated recordkeeping, and corporate health plan development.

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<tr>
<td>Lecture W</td>
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<tr>
<td>Lab W</td>
<td>6:30-8:35 p.m.</td>
<td>SK 137</td>
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**Basic Electricity and Electronics: 2322T (3 credits)**
Principles of AC and DC electricity and electronics with emphasis on service and maintenance and corporate health plan development.

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<td>Lecture Th</td>
<td>6:30-7:25 p.m.</td>
<td>SK 101 and</td>
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<tr>
<td>Lab T</td>
<td>3:00-5:05 p.m.</td>
<td>SK 134 or</td>
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<td>Lab T</td>
<td>5:20-7:25 p.m.</td>
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<td>Lab W</td>
<td>6:30-8:35 p.m.</td>
<td>SK 137</td>
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</table>
**Metals and Metal Manufacturing: 2242T (2 credits)**
Introduction to metals and metal manufacturing; including materials, equipment, processes, and products.

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<td>Lecture M</td>
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<td>Lab W</td>
<td>6:30-9:45 p.m.</td>
<td>SK 150</td>
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</table>

**English**

**Writing & Reading: 1109 (4 credits)**
Provides intensive practice in integrating academic reading and writing.

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<td>Lecture T, Th</td>
<td>5:20-7:25 p.m.</td>
<td>AT 128</td>
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</table>

**First-Year English Composition: 1100.01 (3 credits)**
Practice in the fundamentals of expository writing, as illustrated in the student's own writing & in the essays of professional writers.

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<td>Lecture M, W, F</td>
<td>4:10-5:05 p.m.</td>
<td>AT 212</td>
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</table>

**First-Year English Composition: 1100.03 (3 credits)**
Intensive practice in fundamentals of expository writing illustrated in the student's own writing and essays of professional writers; offered in a small class setting.

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<td>Lecture M, W, F</td>
<td>12:40-1:35 p.m.</td>
<td>AT 286</td>
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<td>Lecture M, W, F</td>
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<tr>
<td>Lecture M, W, F</td>
<td>4:10-5:05 p.m.</td>
<td>AT 286</td>
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**Environment & Natural Resource**

**Communicating Environmental and Natural Resources Information: 2367 (3 credits)**
Concepts, skills development, and practice in accessing and communicating information about the environment and natural resources to varied audiences; emphasis on written and oral communication.

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<td>12:40-1:35 p.m.</td>
<td>SK 205</td>
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**History**

**American Civilization since 1877: 1152 (3 credits)**
The political, constitutional, social and economic development of the United States from the end of Reconstruction to the present.

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<td>5:20-6:40 p.m.</td>
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<tr>
<td>Lecture M, W</td>
<td>7:40-9:00 p.m.</td>
<td>SK 100</td>
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</table>

**Horticultural Technology**

**Contemporary Floral Design: 2680T (3 credits)**
An advanced course emphasizing the artistic nature of floral design with a global perspective of contemporary styles, techniques and trends.

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<td>Lab T, Th</td>
<td>9:10-12:25 p.m.</td>
<td>AT 285</td>
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</table>

**Post-Harvest Flower Care: 2660T (2 credits)**
Principles and practices of post-harvest flower care from producer to consumer with emphasis on identification and proper care and handling at the retail level.

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<td>3:00-3:55 p.m.</td>
<td>AT 285</td>
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**Retail Flower Shop Operation: 2620T (2 credits)**
Principles and practices of management and operation of a retail flower shop with emphasis on purchasing, pricing, merchandising, selling, delivery and wire services.

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<td>Lab M</td>
<td>11:30-12:25 p.m.</td>
<td>AT 285 and</td>
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<tr>
<td>Lab W</td>
<td>10:20-12:25 p.m.</td>
<td>AT 285</td>
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</tbody>
</table>

**Greenhouse Bedding and Flowering Pot Plant Production: 2540T (4 credits)**
Principles and practices of greenhouse bedding and flowering pot plant production, including propagation, transplanting, nutrition, environmental requirements, height control, harvesting, pests, pathogens and post-harvest marketing.

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<tr>
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<td>4:10-5:05 p.m.</td>
<td>AT 286</td>
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**Propagation of Nursery and Greenhouse Plants: 2740T (2 credits)**
Principles, techniques, skills, materials, and facilities used to propagate herbaceous and woody plants with emphasis on commercial propagation methods.

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<tr>
<td>Lecture M, W</td>
<td>1:50-2:45 p.m.</td>
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<td>Lecture T</td>
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<td>Lab F</td>
<td>1:50-5:05 p.m.</td>
<td>AG 115</td>
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**Garden Center Management: 2420T (2 credits)**
Principles of retail garden center management including sales, marketing, advertising, personnel management, customer relations and management of product lines, stock and displays.

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<td>Lecture Th</td>
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<td>Lab T</td>
<td>9:10-11:15 a.m.</td>
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<td>10:20-12:25 p.m.</td>
<td>AG 115</td>
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<td>March 7 – April 20</td>
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**Horticultural Root Media: 2150T (2 credits)**
Study of horticultural root media, including functions, texture, structure, ingredients, preparation, pasteurization, pore spaces, water and nutrient holding capacity, pH, irrigation practices and containers.

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<td>Lab W, F</td>
<td>10:20-12:25 p.m.</td>
<td>AG 115</td>
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<tr>
<td>January 9 – February 27</td>
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</table>
Plant Materials I: 2110T (3 credits)
Introductory course in plant identification including deciduous trees and shrubs common to the midwest covering: identification, morphology, classification, nomenclature and adaptability.

Day | Time | Location
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Lecture T | 1:50-2:45 p.m. | SK 232 and
Lab M, W | 1:50-3:55 p.m. | SK 232

Landscape Design: 2360T (3 credits)
Introduction to landscape drafting, CAD, design and planning emphasizing the design program, form composition, drafting techniques, design representation and 2 and 3-dimensional CAD.

Day | Time | Location
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Lecture T | 8:00-8:55 a.m. | AT 280 and
Lab T | 9:10-12:25 p.m. | AT 280 and
Lab Th | 11:30-2:45 p.m. | AT 200

Principles of Weed Science: 2880T (3 credits)
A study of weed classification, ecology, plant competition, herbicide formulation, properties and uses of herbicides and weed management in horticultural crops.

Day | Time | Location
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Lecture M, F | 9:10-10:05 a.m. | SK 232 and
Lab W | 9:10-11:15 a.m. | SK 232

Plant Diseases of Ornamentals and Turf: 2890T (3 credits)
Principles and practices in diagnosing and treating plant diseases on woody ornamentals and turf.

Day | Time | Location
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Lecture M, W | 4:10-5:05 p.m. | SK 232 and
Lab F | 1:50-3:55 p.m. | SK 232

Golf Course and Sports Turf Irrigation and Drainage: 2240T (3 credits)
Principles of design, selection, installation, maintenance, and operation of equipment and materials used in golf course and sports turfgrass irrigation and drainage systems.

Day | Time | Location
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Lecture M, W | 12:40-2:45 p.m. | GC 100 and
Lab T, Th | 12:40-3:55 p.m. | GC 100

Introduction to Professional Golf Management: 2250T (2 credits)
Acquaints students with the PGM program, including program facilities and resources, components of the PGA/PGM Program, golf history, PGA Constitution, Career Enhancement, Golf Operations, and Customer Relations.

Day | Time | Location
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Lecture Th | 9:10-10:05 a.m. | SK 232 and
Lab Th | 10:10-11:20 a.m. | SK 232

Turfgrass Cultural Systems and Practices: 2250T (3 credits)
A study of cultural and environmental factors related to maintaining fine turfgrasses with special emphasis on mathematical calculations and materials applications.

Day | Time | Location
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Lecture M, W | 9:10-11:15 a.m. | GC 100 and
Lab T, Th | 8:00-11:15 a.m. | GC 100
March 6 – April 24

**Horticulture and Crop Science**

Ecology of Managed Plant Systems: 2201 (4 credits)
Origin, diversification, and biogeography of plants inhabiting managed landscapes.

Day | Time | Location
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Lecture M, W, F | 11:30-12:25 p.m. | SK 225 and
Lab T | 1:50-3:55 p.m. | AG 115

Form and Function in Cultivated Plants: 2202 (4 credits)
An introduction to plant growth and development with special emphasis on structure function relationships important to productivity and quality in cultivated plants.

Day | Time | Location
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Lecture M, W, F | 9:10-10:05 a.m. | SK 225 and
Lab M | 5:20-7:25 p.m. | AT 181 or
Lab W | 5:20-7:25 p.m. | AT 181

**Humanities**

Humanities as a Window on Cultural Pluralism: The Arts in Ghana: 1190.02T (3 credits)
An introduction to specific arts and cultural contexts of Ghana, West Africa, leading to a four-week study abroad.

Day | Time | Location
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Lecture M | 5:20-8:30 p.m. | AT 152

**Mathematics**

Basic Mathematics I: 1030T (3 credits)
A foundation course in arithmetic and beginning algebra skills. Emphasis is on obtaining competencies necessary to be successful in the Basic Mathematics II course.

Day | Time | Location
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Lecture M, W, F | 12:40-1:35 p.m. | SK 101

Basic Mathematics II: 1040T (3 credits)
A review of algebra and geometry fundamentals with emphasis on measurement, percent application, two and three-dimensional geometry application, and direct and inverse proportion.

Day | Time | Location
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Lecture M, W, F | 4:10-5:05 p.m. | SK 201

Business Mathematics: 1141T: (3 credits)
The mathematics of business and finance: including proportion, the income statement, simple interest, compound interest, annuities, amortization and sinking funds.

Day | Time | Location
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Lecture M, W, F | 12:40-1:35 p.m. | SK 101

Technical Mathematics II: 1145T (3 credits)
A study of technical applications and computational methods involving variation, systems of equations, quadratic equations, graphical solutions to equations, logarithmic and exponential equations, and trigonometry.

Day | Time | Location
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Lecture M, W, F | 8:00-8:55 a.m. | SK 105

Precalculus Mathematics I: 1050 (5 credits)
Fractions and decimals, basic algebra, graphing lines, factoring, systems of equations.

Day | Time | Location
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Lecture M-F | 8:00-8:55 a.m. | SK 101

Precalculus Mathematics II: 1075 (4 credits)
Algebraic, rational, and radical expressions; functions and graphs; quadratic equations; absolute value; inequalities; and applications.

Day | Time | Location
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Lecture M, W, F | 9:10-10:05 a.m. | SK 101 and
Lecture Th | 4:10-5:05 p.m. | SK 101 or
Lecture M, W, F | 4:10-5:05 p.m. | SK 225 and
Lecture Th | 11:30-12:25 p.m. | SK 225
### College Algebra for Business: 1130 (4 credits)
Algebraic, exponential, and logarithmic functions. Matrix algebra. Applications to business.

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<td>8:00-8:55 a.m.</td>
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### College Algebra: 1148 (4 credits)
Functions: polynomial, rational, radical, exponential, and logarithmic. Introduction to right-angle trigonometry. Applications.

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<td>4:10-5:10 p.m.</td>
<td>SK 105</td>
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### Trigonometry: 1149 (3 credits)
Trigonometric functions and their properties. Vectors, polar coordinates and complex numbers.

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### Calculus I: 1151 (5 credits)
Differential and integral calculus of one real variable.

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<td>11:30-12:25 p.m.</td>
<td>SK 105</td>
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### Physics
Mechanics, Kinematics, Fluids, Waves: 1200 (5 credits)
Algebra-based introduction to classical physics: Newtons laws, fluids, waves.

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<td>4:10-5:05 p.m.</td>
<td>AT 086 and</td>
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<tr>
<td>Lab Th</td>
<td>12:40-3:55 p.m.</td>
<td>AT 149</td>
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### Psychology
Introduction to Psychology: 1100 (3 credits)
A prerequisite to advanced courses; a broad survey of psychological science. Application of the scientific method to the empirical study of behavior with emphasis on individual and cultural differences.

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### Religious Studies
Introduction to Comparative Religion: 2370 (3 credits)
Introduction to the academic study of religion through comparison among major traditions (Judaism, Christianity, Islam, Hinduism, Buddhism, etc.) and smaller communities.

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### Renewable Energy
Bioconversion Systems: 2020T (3 credits)
An introduction to fermentation systems utilized in the bioenergy process, including the scientific and technical background of fermentation processes. Practical applications to operating these systems will be emphasized through hands-on lab and site experiences.

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<thead>
<tr>
<th>Day</th>
<th>Time</th>
<th>Location</th>
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</thead>
<tbody>
<tr>
<td>Lecture T</td>
<td>1:50-2:45 p.m.</td>
<td>AT 149 and</td>
</tr>
<tr>
<td>Lecture Th</td>
<td>10:20-11:15 a.m.</td>
<td>AT 149 and</td>
</tr>
<tr>
<td>Lab Th</td>
<td>8:00-10:05 a.m.</td>
<td>AT 149</td>
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</table>

Solar Energy Systems: 2025T (3 credits)
This course encompasses solar energy systems including the underlying principles and concepts, system components, common system configurations, siting, design, environmental considerations, economic analysis and grid integration.

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<td>Lab Th</td>
<td>8:00-10:05 a.m.</td>
<td>AT 149</td>
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Renewable Energy Project Planning, Development & Operation: 2040T (3 credits)
This capstone course encompasses the integration of renewable systems to meet customer energy demands, as well as project management, finance and customer interaction.

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<thead>
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<th>Time</th>
<th>Location</th>
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<tbody>
<tr>
<td>Lecture T</td>
<td>11:30-12:25 p.m.</td>
<td>AT 149 and</td>
</tr>
<tr>
<td>Lecture F</td>
<td>9:10-10:05 a.m.</td>
<td>AT 149 and</td>
</tr>
<tr>
<td>Lab M</td>
<td>8:00-11:15 a.m.</td>
<td>AT 149</td>
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### Meat Science
Bar-B-Que Science: 2010 (2 credits)
Investigating methods to prepare various meat products. Students will gain experience in matching proper cooking methods with different muscles to produce wholesome and palatable products. Students will be introduced to product sensory techniques.

<table>
<thead>
<tr>
<th>Day</th>
<th>Time</th>
<th>Location</th>
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<tbody>
<tr>
<td>Lecture T</td>
<td>5:20-6:15 p.m.</td>
<td>SK 231</td>
</tr>
<tr>
<td>Lab Th</td>
<td>5:20-8:35 p.m.</td>
<td>SK 142</td>
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<td>March 7 – April 20</td>
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### Microbiology
Basic and Practical Microbiology: 4000 (4 credits)
Provides an understanding of microorganisms and their interaction with the human experience.

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<tr>
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<tbody>
<tr>
<td>Lecture M, W, F</td>
<td>11:30-12:25 p.m.</td>
<td>AT 129 and</td>
</tr>
<tr>
<td>Lab Th</td>
<td>8:00-11:15 a.m.</td>
<td>AT 123 or</td>
</tr>
<tr>
<td>Lab W</td>
<td>8:00-11:15 a.m.</td>
<td>AT 123</td>
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</table>

### Music
Music Cultures of the World: 2250 (3 credits)
A survey of musical cultures outside the Western European tradition of the fine arts.

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<tbody>
<tr>
<td>Lecture M, W, F</td>
<td>8:00-8:55 a.m.</td>
<td>AT 152 or</td>
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<tr>
<td>Lecture M, W, F</td>
<td>11:30-12:25 p.m.</td>
<td>AT 152 or</td>
</tr>
<tr>
<td>Lecture M, W, F</td>
<td>1:50-2:45 p.m.</td>
<td>AT 152</td>
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</table>
Rural Sociology

Introduction to Rural Sociology: 1500  (3 credits)
Principles of society, major social institutions, and social change; emphasizes social changes in rural life, rural organizations, population, and family living.

Day     Time     Location
Lecture M, W, F  12:40-1:35 p.m.  SK 030 or
Lecture M, W, F  3:00-3:55 p.m.  SK 030 or
Lecture M, W, F  4:10-5:05 p.m.  AT 081

Social Sciences

Hispanic Culture and Language in the Workplace: 1181T
(3 credits)
Develop an understanding of how various Latino cultures influence workplace issues in order to improve the working environment and learn a basic workplace Spanish vocabulary.

Day     Time     Location
Lecture M, W, F  8:00-10:05 a.m.  AT 081
January 9 – February 24

Technical Physics

Technical Physics: 1150T  (5 credits)
Principles and applications of forces, motion, energy, matter, heat, thermodynamics, electricity, mechanical waves, and electromagnetic radiation.

Day     Time     Location
Lecture M, T, W, F  11:30-12:25 p.m.  AT 086 and
Lab F  1:50-3:55 p.m.  AT 149

Locations

AC = Bee Lab
AF = Apple Creek Farm
AT = Halterman Hall
AG = Greenhouse Classroom
EQ = Equine Center
GC = Golf Course
LD = Land Lab
SAC = Student Activities Center
SK = Skou Hall

Key

Course requires use of a computer/Internet access
Night class
Online, on your own time

Spring 2016 Calendar

Registration deadline: December 19, 2016
Payment deadline: January 3, 2017
Classes begin: January 9, 2017
Classes are from January 9 - April 24, 2017. No classes will be held January 16.
Spring break will be March 13-17.
Final exams are scheduled April 25 - May 2.
Course days and times are subject to change; please contact us for schedule details.

All campuses of The Ohio State University are tobacco-free. Tobacco use of any kind, including e-cigarettes, is not permitted on any Ohio State University property.

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