Academic Notes

November 23, 2009 **AN 2009-2010**

** SPECIAL NOTICES**

FALL 2009 COMMENCEMENT

Commencement is a most important celebration for a campus. The participation of faculty in the celebration demonstrates to our graduates, their family members, and even to prospective students, how important they are to us. Your participation is requested in the Commencement ceremonies that will be held on December 19, 2009. The Commencement Attendance Form and Faculty Academic Apparel Rental Order Form are available online at http://www.indstate.edu/academicaffairs/commencement-faculty.htm Apparel rental deadline has been extended to no later than **November 23, 2009**. Together we can make this celebration an event that all of our graduates will never forget. We want and need for them to leave here with nothing but fond memories of a University that provided both a quality education and a caring environment.

ARTICULATION AGREEMENTS

Program articulation agreements between Indiana State University and our two-year partner institutions allow students to complete a specific associate degree program at another institution and receive credit toward a specific bachelor's degree program at Indiana State University. Each agreement details the transfer courses accepted for credit at ISU, the courses needed to complete the bachelor's degree, and any other requirements or guidelines that apply. The following agreements have recently been approved and are available on the Transfer Central web site http://www.indstate.edu/transfer/articulations.htm :

Ivy Tech
AS Education to BS in Elementary Education with optional Special Education Licensure
11/20/2009

AS Education to BS in Elementary Education with optional Special Education Licensure
11/20/2009

Vincennes University
AS Drafting and Design/CAD to BS Mechanical Engineering Technology
11/20/2009

AAS Drafting and Design/CAD to BS Mechanical Engineering Technology
11/20/2009

ACADEMIC NOTES PUBLICATION SCHEDULE FOR FALL 2009

Below is the circulation schedule for the electronic copy of *Academic Notes* through December 14, 2009. All submissions for inclusion in Academic Notes are due in the Office of Academic Affairs no later than 10:00 a.m. on the Wednesday prior to the distribution of Academic Notes on the following Monday. Submissions must be in hard copy along with an e-mail, disk, or CD with the same information. The electronic version must be formatted either in Word with pages with signatures scanned and inserted as a picture OR PDF saved as text and image. (Do NOT send PDF just saved as an image.) Information submitted to Academic Notes that is not accompanied by an electronic version or that is incomplete or unusable will be returned to the appropriate office. Academic Notes is available using Acrobat Reader at http://www.indstate.edu/academicaffairs/academic_notes.htm

ACADEMIC NOTES PUBLICATION SCHEDULE FOR FALL 2009

Deadline for Items	Issue Date
November 25	November 30
December 2	December 7
December 9	December 14

ACALOG NOTE

The format for curriculum proposals has changed to correspond with the structure of Acalog, the new version of the electronic catalogs. Some proposals will be published under the old structure and some under the new structure during this transition period.

Improved Electronic Catalog
The new electronic version of the undergraduate catalog is posted at http://www.indstate.edu/academics/catalogs.htm Some advantages of the new format are:

- It is easily searchable and searchable from the internet
- It is easier for students and advisors to find and choose the courses students need
- Students create a personal portfolio of courses in which they are interested
- Links to information such as department web sites, advising information, and video clips can easily be added
- Every page can easily be printed.

If you have questions, please contact Academic Affairs, extension 3662.

CURRICULUM

INDEX

UNDERGRADUATE PROPOSALS

COURSE REVISIONS

COLLEGE OF ARTS AND SCIENCES: Earth and Environmental Systems

ENVI 242 - Introduction to Geographic Information Systems
3 credits
An overview of basic principles of geographic information systems and practical experience in employing these systems.

Change title, and add Foundational Studies to:

ENVI 242 - Introduction to Geographic Information Systems (GIS)
3 credits
An overview of basic principles of geographic information systems and practical experience in employing these systems.
Foundational Studies: FS 2010 Quantitative Literacy
A-F Grading
Preferred effective term: Fall 2010

PROGRAM REVISIONS

COLLEGE OF TECHNOLOGY: Electronics, Computer, and Mechanical Engineering Technology

Automotive Technology Management

CIP Code 150803 Major Code: D734

Brief Summary:

The change to Automotive Engineering Technology more accurately reflects the current program content. The Accreditation Board of Engineering and Technology (ABET) provides a competency structure and the Society of Automotive Engineers (SAE) guides automotive engineering technology programs. The competencies set forth in the current ATM program match very well with these criteria. Surveys of graduates indicate they are taking positions such as engineering tech, quality engineer, repair logistic engineer, just to name a few.

The Automotive Technology Management program was created in the early 1970's to fulfill a need to educate teachers in a specific area of industrial arts. From that beginning, the students graduating from the program have expressed an increased need to incorporate more technical content beyond the level normally required of a high school automotive educator. The program's name was changed in the early 1980's to Industrial Automotive Technology reflecting the change in the program focus. Graduate surveys indicated an industry-wide lack of understanding of the Industrial Automotive Technology name. In 2003, the name was changed to Automotive Technology Management in an effort to better reflect the positions graduates were taking.

More than 15 significant changes to the ATM curriculum have been incorporated since 2004. These changes have reinforced the technical content and streamlined the management specific courses. The Automotive Technology Management Advisory Committee (ATMAC) has discussed the issue of a name change at more than three meetings spanning three years. While the ATMAC is supportive of the name change to Automotive Engineering Technology, they find no need to change program content, indicating that the Automotive Engineering Technology name accurately reflects the current program content.

The ATM program has been accredited by the National Association of Industrial Technology for more than 20 years. NAIT has recently reorganized and changed its name to the Association of Technology, Management, and Applied Engineering (ATMAE). NAIT did not allow the word engineering to be in the title of a program. ATMAE has lifted that restriction and made engineering part of its framework. At this time, the AET program will continue to seek reaccreditation from ATMAE.

Student Learning:

Program Objectives: (what a student is expected to have accomplished a few years following graduation)
Graduates of the program will:

1. be competent in the application of computer technologies commonly used in industry
2. have a working knowledge of the design, manufacture, and maintenance of automotive major subsystems and technologies
3. demonstrate the ability to apply modern and effective management skills in identification and investigation of problems, analysis of data, synthesis and implementation of solutions, and operations of facilities
4. have technical and managerial skills necessary to enter careers in manufacturing,

marketing, operation, and maintenance in the field of automotive technology
Changing the name is expected to have a positive effect on program objectives by better name recognition to the appropriate human resource personnel. The name will have a positive effect on accreditation review.
It is anticipated that student learning will be positively impacted as the name will help to instill higher expectations and aspirations, and ultimately improve the students' ability to find desirable employment.

Proposed Catalog Copy:

Automotive Engineering Technology (69 credits)
(Includes 14 credits of General Education)
CIP Code 150803 Major Code: _____

Program Vision

The Automotive Engineering Technology Program will be a leader in integrating teaching, research, and creative activity in an engaging, challenging, and supportive learning environment preparing productive citizens for Indiana and the world while creating and maintaining a credible presence within the confines of the automotive sector of education and industry.

Program Mission

The mission of the Automotive Engineering Technology program is to prepare application oriented graduates with the technical and managerial skills necessary to enter globally competitive automotive careers. Current automotive technology and design considerations are explored with emphasis on experiential learning opportunities engaging students in engine research, testing, design, and analysis. Students also develop essential managerial knowledge, skills and abilities assuring a comprehensive understanding of automotive operations ranging from retail to industrial applications.

Program Guiding Principles (we will)
- Inculcate high standards for learning, teaching, and inquiry
- Provide a well-rounded education that integrates professional preparation and study in the arts and sciences with co-curricular involvement
- Demonstrate integrity through honesty, civility, and fairness
- Embrace the diversity of individuals, ideas, and expressions
- Foster personal growth within an environment in which every individual matters
- Uphold the responsibility of University citizenship
- Exercise stewardship of our global community

Program Educational Objectives: (what a student is expected to have accomplished a few years following graduation)

Graduates of the program will:
1. be competent in the application of computer technologies commonly used in industry
2. have a working knowledge of the design, manufacture, and maintenance of automotive major subsystems and technologies

3. demonstrate the ability to apply modern and effective management skills in identification and investigation of problems, analysis of data, synthesis and implementation of solutions, and operations of facilities
4. have technical and managerial skills necessary to enter careers in manufacturing, marketing, operation, and maintenance in the field of automotive technology

Program Outcomes: (what a student is expected to be able to know or do by graduation)

Students will demonstrate an appropriate mastery of the knowledge, techniques, skills, and modern tools of automotive engineering technology.

Specifically, students will demonstrate:
1. an ability to read, interpret, and edit technical drawings
2. knowledge of the principles of industrial health and safety
3. and apply theory through practical experience in industrial settings
4. knowledge of automotive engine systems and design considerations
5. an understanding of service facilities management and organization
6. an ability to apply current knowledge and adapt to emerging applications of mathematics, science, engineering, and technology
7. an ability to conduct, analyze and interpret experiments, and apply experimental results to improve processes
8. an ability to apply creativity in the design of automotive systems, components, or processes
9. an ability to function effectively on teams
10. an ability to identify, analyze and solve technical automotive related problems
11. an ability to communicate effectively
12. the ability to plan, organize, prepare, and deliver effective automotive technical reports in written, oral, and other formats
13. a recognition of the need for, and an ability to engage in lifelong learning
14. an ability to utilize appropriate automotive literature and use it as a principal means of staying current in the automotive industry
15. an ability to understand professional, ethical and social responsibilities
16. a respect for diversity and a knowledge of contemporary professional, societal and global issues
17. a commitment to quality, timeliness, and continuous improvement

Required Courses:

Automotive Engineering Technology:

- AET 132 - Theory of I.C. Engines 3 credits
- AET 233 - Engine Systems and Controls 3 credits
- AET 239 - Automotive Chassis 3 credits
- AET 335 - Body Control Systems 3 credits
- AET 336 - Engine Fuels and Lubricants 3 credits
- AET 432 - Parts Distribution and Marketing 3 credits
- AET 433 - Service Facility Organization and Management 3 credits
- AET 435 - Engine Thermodynamics 3 credits

- AET 436 - Diesel Engines 3 credits
- AET 440 - Fixed Operations Management 3 credits

Electronics and Computer Technology:

- ECT 160 - Electronic Fundamentals 3 credits

Health, Safety, and Environmental Health Sciences:

- HLTH 212 - Introduction to Industrial Health and Safety 3 credits

Management:

Choose one of the following:
- MGT 301 - Survey of Management 3 credits
- TMGT 492 - Industrial Supervision 3 credits

Manufacturing:

Choose one from the following:
- MFG 370 - Fundamentals of Manufacturing Processes 3 credits
- MFG 371 - Manufacturing Processes and Materials 3 credits
- MFG 372 - Plastics Technology 3 credits

Mechanical Engineering Technology:

- MET 103 - Introduction to Technical Graphics with CAD 3 credits
- MET 215 - Graphic Analysis 3 credits
- MET 329 - Fluid Power Technology 3 credits
- MET 333 - Power Systems 3 credits
- MET 351 - Cooperative Industrial Practice 3 credits
- MET 430 - Senior Seminar 1 credits

Mathematics:

Choose one from the following:
- MATH 111 - Intermediate Algebra 3 credits
- MATH 115 - College Algebra and Trigonometry 3 credits

Directed Liberal Studies:

- CHEM 100 - Chemistry: Reactions and Reason 3 credits
- CHEM 100L - Chemistry: Reactions and Reason Laboratory 1 credits

Choose one pair from the following:
- PHYS 101 - Introduction to the Physical Sciences 3 credits
- PHYS 101L - Introduction to the Physical Sciences Laboratory 1 credits

or
- PHYS 105 - General Physics I 3 credits
- PHYS 105L - General Physics I Laboratory 1 credits

or

Degree completion with an Associate of Science (A.S.) from a regionally accredited institution in an Automotive program accredited by the National Automotive Technicians Education Foundation (NATEF).

Bachelor of Science in Automotive Technology Management , A.S. Transfer option (64 semester hours) **

** This option is designed as a degree completion articulation for NATEF accredited automotive service programs from regionally accredited institutions. This degree completion option includes all coursework for satisfying graduation requirements at Indiana State University.

Required courses:

Automotive Engineering Technology:

- AET 336 - Engine Fuels and Lubricants 3 credits
- AET 432 - Parts Distribution and Marketing 3 credits
- AET 433 - Service Facility Organization and Management 3 credits
- AET 435 - Engine Thermodynamics 3 credits
- AET 436 - Diesel Engines 3 credits
- AET 440 - Fixed Operations Management 3 credits

Mechanical Engineering Technology:

- MET 103 - Introduction to Technical Graphics with CAD 3 credits
- MET 215 - Graphic Analysis 3 credits
- MET 329 - Fluid Power Technology 3 credits
- MET 333 - Power Systems 3 credits
- MET 351 - Cooperative Industrial Practice 3 credits
- MET 430 - Senior Seminar 1 credits

Management:

- MGT 301 - Survey of Management 3 credits

  or
- TMGT 492 - Industrial Supervision 3 credits

Basic Studies:

3 hours of upper division English course.

Liberal Studies:

LAPS:E3 3 credis
SBS:E3 3 credits

MCS:IC 3 credits
GECAP 3 credits

Electives:

12 credits of upper division approved electives.

or

Degree completion with an Associate of Applied Science (A.A.S.) from a regionally accredited institution in an Automotive program accredited by the National Automotive Technicians Education Foundation (NATEF).

Bachelor of Science in Automotive Technology Management, Associate of Applied Science Transfer option (minimum 64 semester hours) ***

*** This option is designed as a degree completion articulation for NATEF accredited automotive service programs from regionally accredited institutions. Any Indiana State University required major or general education course work not completed in the associate of applied science degree must be completed in addition to the requirements listed below before graduation from this program.

Required courses:

Automotive Engineering Technology:

- AET 336 - Engine Fuels and Lubricants 3 credits
- AET 432 - Parts Distribution and Marketing 3 credits
- AET 433 - Service Facility Organization and Management 3 credits
- AET 435 - Engine Thermodynamics 3 credits
- AET 436 - Diesel Engines 3 credits
- AET 440 - Fixed Operations Management 3 credits

Mechanical Engineering Technology:

- MET 103 - Introduction to Technical Graphics with CAD 3 credits
- MET 215 - Graphic Analysis 3 credits
- MET 329 - Fluid Power Technology 3 credits
- MET 333 - Power Systems 3 credits
- MET 351 - Cooperative Industrial Practice 3 credits
- MET 430 - Senior Seminar 1 credits

Management:

- MGT 301 - Survey of Management 3 credits

or

- TMGT 492 - Industrial Supervision 3 credits

Basic Studies:

3 credits upper division English course.

Liberal Studies:

LAPS:E 3 credits
SBS:E 3 credits
MCS:IC 3 credits
GECAP 3 hours.

Electives:

12 credits of upper division approved electives or deficiencies in basic and liberal studies.
Preferred effective term: Fall 2010

GRADUATE PROPOSALS

COURSE REACTIVATION

COLLEGE OF EDUCATION: Curriculum, Instruction, and Media Technology

CIMT 568 – Reading Strategies for Content Area Teachers
3 credits
Diagnostic and instructional strategies for improving reading in content area classrooms. Techniques for helping teachers.
A-F Grading
Preferred effective term: Fall 2010

PROGRAM REVISIONS

COLLEGE OF EDUCATION: Curriculum, Instruction, and Media Technology

Master of Education Curriculum and Instruction
CIP Code: 130301 Major Code: 8372

Brief Summary:

Working with the Elementary, Early and Special Education Department, the Department of CIMT wishes to add an area of concentration in Gifted and Talented to our Masters in Education program.

In our initial program modification proposal, we indicated that our primary purpose was to better prepare teachers and key stakeholders to take leadership roles in promoting and managing effective learning environments in schools. Beyond its importance to individual public school student's success, this leadership was deemed critical as schools increasingly rely upon teachers and other key stakeholders as primary functionaries in envisioning and realizing school

improvement. Moreover, accrediting bodies, such as the North Central Association, rely on this model for school improvement. Furthermore, school improvement is vital to individual school's success in demonstrating adequate yearly progress under the federal regulations of the No Child Left Behind legislation. As such, the program aimed to support teachers and other key stakeholders in understanding and becoming effective in assuming their roles as leaders in schools.

A secondary purpose was to take advantage of the newly established concentrations in Banner to provide a more inclusive M. Ed. in Curriculum and Instruction. The now approved program modification allows students for whom a master's degree is no longer feasible given program prioritization to earn an M.Ed. with a concentration in the desired content. Moreover, the program allows students to obtain the desired content while also allowing those with an existing teaching license the opportunity to professionalize that license. When the program modification went forward, we indicated that concentrations would be added as disciplines so sought. Thus, this further modification of the program is requested.

Student Learning:

The State of Indiana mandates that k-12 pupils of high ability be identified for intervention, leaving a dearth of appropriately qualified teachers. Adding the concentration in Gifted and Talented to the M.Ed. program best prepares the candidate in that not only is the matriculating individual identified as a master teacher, the individual is licensed to meet the specific learning needs of the identified population of k-12 public school pupils.

The assessment plan for accreditation, already on file for the M.Ed. program, will fulfill the needs associated with adding this area of concentration.

Proposed Catalog Copy:

Master of Education Curriculum and Instruction
CIP Code: 130301 Major Code: _____

Degree Requirements:

Core Area Studies in Professional Education: (15 credits). The student must always include studies in the following core areas of professional education:

Research: Curriculum, Instruction, and Media Technology 610—3 credits or approved research course in major field or primary area as approved by advisor.

Curriculum: Curriculum, Instruction, and Media Technology 660—3 credits

Social Foundations: 3 credits from Curriculum, Instruction, and Media Technology 658, or Special Education 607, or social foundations course as approved by advisor.

Psychological Foundations: 3 credits from Educational Psychology 621.

Instruction-Supervision: 3 credits. Students not choosing a concentration outside curriculum

and instruction may choose CIMT 689 or an approved course. Students choosing a concentration outside curriculum and instruction concentration may choose from CIMT 675 or CIMT 690.

Area of Concentration: (15 credits). An academic area of concentration outside of curriculum and instruction may be chosen in the M.Ed. program. Those choosing an academic concentration must complete a minimum of 15 credits in the academic area.

Area of Concentration: Curriculum and Instruction (15 credits)

In consultation with advisor, select 15 credits from:

CIMT 568 – Reading in the Content Areas (3)
CIMT 611 – Measurement and Evaluation in Education (3)
CIMT 625 – Multimedia Design for Interactive Learning (3)
CIMT 665 – Instructional Innovation (3)
CIMT 675 – Supervision of Instruction (3)
CIMT 650 - Classroom Management (3)
CIMT 690 – Mentor Teacher Preparation (3)
Other as approved by advisor.

Area of Concentration: Gifted and Talented (15 credits)

The Gifted and Talented area may be added to an existing, current, Rules 2002 Indiana teaching license at the school level of the current license. For holders of a Rules 46/47 license, a new 2002 GT license will be issued at the developmental level of the existing license. The addition of this license may be completed only at the graduate level.

SPED 578 (3 credits)
SPED 590 (3 credits)
SPED 591 (3 credits)

Electives (6 credits) Courses are to be chosen in consultation with the academic advisor.

Professionalizing a License: Professionalizing a Rules 2002 license may be accomplished by completion of the M.Ed. in Curriculum and Instruction, regardless of the selection of an academic concentration or not. For those choosing to professionalize a Rules 46 & 47 license, a major must complete a minimum of 6 credits in the major; those choosing to professionalize a minor must take a minimum of 12 credits in the minor. Those choosing to professionalize both a major and minor subject will take a minimum of 6 credits in the major and a minimum of 12 credits in the minor—thus increasing their overall program hours to 36 rather than 33 credits. Addition of subject license to existing teaching license: Individuals who wish to add an additional subject license to the developmental/school setting license at which they are already licensed must contact the academic department.

Culminating Experience Requirement: (3 credits). The student must satisfactorily complete in the last 12 credits of the degree program Curriculum, Instruction, and Media Technology 775 - 3 credits. The Core Area Studies in Professional Education requirements of this degree are prerequisite to the culminating experience requirement.

Preferred effective term: Fall 2010

UNDERGRADUATE APPROVALS

COURSE REVISIONS

COLLEGE OF EDUCATION: Elementary, Early, and Special Education

ELED 394 - The Teaching of Elementary School Mathematics
3 credits
An overview of the mathematics curriculum of the elementary school with emphasis on activities, materials, devices, and teaching-learning techniques appropriate for children. Required laboratory work involves experiences with elementary pupils.
Prerequisites: Admission to BCP-I; successful completion of Phases I and II; and MATH 205 and 305.

Change prerequisites to:

ELED 394 - The Teaching of Elementary School Mathematics
3 credits
An overview of the mathematics curriculum of the elementary school with emphasis on activities, materials, devices, and teaching-learning techniques appropriate for children. Required laboratory work involves experiences with elementary pupils.
Prerequisites: Admission to BCP-I; successful completion of Phases I and II.
A-F Grading
Preferred effective term: Spring 2010

GRADUATE APPROVALS

COURSE REACTIVATION

COLLEGE OF ARTS AND SCIENCES: Political Science

PA 631 - Seminar in National Public Policy Analysis
3 credits
Analysis of selected federal policies and programs, emphasizing program formulation, implementation, and evaluation phases. A major research paper will be required.

Reactivation and change of title and description to:

PA 631 - Seminar in Public Policy Analysis
3 credits
Analysis of selected policies and programs, emphasizing program formulation, implementation, and evaluation phases.
A-F Grading
Preferred effective term: Spring 2010

OTHER APPROVALS

INDIANA COMMISSION FOR HIGHER EDUCATION

The Indiana Commission for Higher Education approved at its November 13, 2009 meeting the MA/MS in Recreation and Sport Management to be delivered at a distance.

MA/MS Recreation and Sport Management
CIP Code: 310504 Major Code: A960
Preferred effective term: Fall 2010

CORRECTIONS

UNDERGRADUATE APPROVALS

PROGRAM REVISIONS

COLLEGE OF TECHNOLOGY: Technology Management

Construction Management Major (86 credits)
CIP Code: 150101 Major Code: E530

Brief Summary:

When the program proposal for Construction Management was submitted and published in Academic Notes in January 2007, the catalog copy contained a typographical error in the 'Directed General Education' section (see attached). A comma was used rather than a semi-colon, which indicated that students had the choice of taking Physics 105/L, Phys 106/L, or Chem 105/L. The program actually requires students to take Physics 105/L, plus a choice of either Phys 106/L or Chem 105/L. The Acalog was correct as published, but this paperwork is being submitted so DARS programming can be changed to reflect the requirement as it was intended. The 'Proposed Catalog Copy' below was copied from the current Acalog and does not need to be changed.

Proposed Catalog Copy:

Construction Management Major (86 credits)
CIP Code: 150101 Major Code:

Required Courses:

Construction Management:

- CNST 101 - Introduction to Construction Management 2 credits
- CNST 106 - Architectural Graphics 3 credits
- CNST 111 - Construction Materials, Methods, and Equipment 3 credits
- CNST 201 - Construction Contract Documents and Project Delivery 3 credits

- CNST 213 - Environmental and Mechanical Systems for Buildings 3 credits
- CNST 214 - Plan Interpretation and Quantity Take-Off 3 credits
- CNST 304 - Construction Scheduling 3 credits
- CNST 306 - Commercial Design and Construction 3 credits
- CNST 310 - Construction Safety 3 credits
- CNST 314 - Estimating and Bid Preparation 3 credits
- CNST 318 - Strength of Building Materials 3 credits
- CNST 320 - Soil Analysis and Testing 3 credits
- CNST 414 - Construction Quality Control and Assurance– 3 credits
- CNST 418 - Design of Temporary Structures 3 credits
- CNST 420 - Plane Surveying 3 credits
- CNST 450 - Construction Management 3 credits

Choose one from the following:

- CNST 218 - Statics 3 credits
- MET 302 - Applied Statics 3 credits

Electronics and Computer Technology:

- ECT 369 - Electrical Construction 3 credits

Technology Management:

- TMGT 351 - Professional Internship 3 credits
- TMGT 430 - Senior Seminar 1 credits

Choose one from the following:

- BUS 263 - Legal Environment and Business 3 credits
- TMGT 429 - Workplace Law for the Technical Manager 3 credits

Choose one from the following:

- MGT 301 - Survey of Management 3 credits
- TMGT 492 - Industrial Supervision 3 credits

Accounting:

- ACCT 200 - Survey of Accounting 3 credits

Mathematics:

Choose one from the following:

- MATH 115 - College Algebra and Trigonometry 3 credits
- MET 215 - Graphic Analysis 3 credits

Directed Liberal Studies (17 hours)

- ECON 100 - Basic Economics 3 credits
- ECON 351 - Survey of Labor Economics and Labor Institutions 3 credits
- MGT 140 - Introduction to Business 3 credits
- PHYS 105 - General Physics I 3 credits
- PHYS 105L - General Physics I Laboratory 1 credits

Choose one pair from the following:

- CHEM 105 - General Chemistry I 3 credits
- CHEM 105L - General Chemistry I Laboratory 1 credits
-
- PHYS 106 - General Physics II 3 credits
- PHYS 106L - General Physics II Laboratory 1 credits

Directed Basic Studies (9 hours):

- ENG 305T - Technical Writing 3 credits
- MATH 241 - Principles of Statistics 3 credits
- TMGT 195 - Introduction to Computer Applications 3 credits

Effective immediately