**INTRODUCTION TO ENGINEERING DESIGN (605151HW)**

Semester Course (1 unit), Grade Level(s): 9-10  
**Prerequisite:** Algebra 1 (success in honors math is strongly suggested)

This course is recommended for students with a strong math and science background and an interest in engineering. This is an introductory course designed to develop the student’s problem solving skills with emphasis placed upon the concept of developing a 3-D model or solid rendering of an object. Students focus on the application of visualization processes and tools provided by modern, state-of-the-art computer hardware and software. The course will emphasize the design development process of a product and how a model of that product is produced, analyzed and evaluated, using a Computer Aided Design System. Various design applications will be explored with discussion of possible career opportunities.  

Students will pay a $20.00 materials fee.  
**NOTE:** First priority will be given to rising ninth and tenth grade students.

**PRINCIPLES OF ENGINEERING (605050HW)**

Semester Course (1 unit), Grade Level: 9-10  
**Prerequisite:** Successful completion of Introduction to Engineering Design

This course is designed to help students understand the field of engineering and engineering technology and its career possibilities. Students will develop engineering problem solving skills used in engineering careers by applying math and science skills learned in their high school classes. They will explore various engineering systems and manufacturing processes. They will also learn how engineers address concerns about the social and political consequences of technological change. The main purpose of this course is to experience, through theory and hands-on problem solving activities, what engineering is all about and to answer the question, “Is a career in engineering or engineering technology for me?”  

Students will pay a $20.00 materials fee.

**PRINCIPLES BIOMEDICAL SCIENCES (558050HW)**

Semester Course (1 unit), Grade Level(s): 9, 10, and 11  
**Prerequisite:** Completed or enrolled in Honors Physical Science/ Honors Algebra 1/Honors Biology

This course provides an introduction to the biomedical sciences through exciting “hands-on” projects and problems. Student work involves the study of human medicine, research processes and an introduction to bioinformatics. Students investigate the human body systems and various health conditions including heart disease, diabetes, sickle-cell disease, hypercholesterolemia, and infectious diseases. A theme through the course is to determine the factors that led to the death of a fictional person. After determining the factors responsible for the death, the students investigate lifestyle choices and medical treatments that might have prolonged the person’s life. Key biological concepts including: homeostasis, metabolism, inheritance of traits, feedback systems, and defense against disease are embedded in the curriculum. Engineering principles including: the design process, feedback loops, fluid dynamics, and the relationship of structure to function are incorporated in the curriculum where appropriate. The course is designed to provide an overview of all the courses in the Biomedical Sciences program and to lay the scientific foundation necessary for student success in the subsequent courses. To be eligible for college credit a student will have to have at least a B average in the course and will also have to obtain a stanine score of 8 or 9 on the EOC. College credit will have a cost depending on the college the student decides to use for transfer credit.  

There is a $35.00 lab fee (includes a lab coat) for this course.  
**NOTE:** Priority will be given to rising freshmen and sophomores.

**HUMAN BODY SYSTEMS (558150HW)**

Semester course (1 unit), Grade Level(s): 9,10, 11  
**Prerequisite:** Successful completion of Principles of Biomedical Sciences with a ‘B’ average. Must have completed Honors Physical Science and Algebra 1 with a ‘B’ average in each.

Using real-world cases, students take the role of biomedical professionals and work together to solve medical mysteries. Hands-on projects include designing experiments, investigating the structures and functions of body systems, and using data acquisition software to monitor body functions such as muscle movement, reflex and voluntary actions, and respiratory operation. Students examine the processes, structures, and interactions of the human body systems to learn how they work together to maintain homeostasis (internal balance) and good health. To be eligible for college credit a student will have to have at least a B average in the course and will also have to obtain a stanine score of 8 or 9 on the EOC. College credit will have a cost depending on the college the student decides to use for transfer credit.  

There is a $35.00 lab fee for this course (plus $12 for a lab coat if needed).
HEALTH SCIENCE 1 (555051CW)
Semester Course (1 unit), Grade Level(s): 9 (if completed Alg. 1) and 10
Health Science 1 is the first of four courses offered to students interested in pursuing a career in the healthcare field. During this first course students are introduced to healthcare history, careers, law and ethics, cultural diversity, healthcare language and math, infection control, professionalism, communication, basics of the organization of healthcare facilities, and types of healthcare insurance. Students get a good grasp of where healthcare has been, where it’s going and how professionalism and personal characteristics impact their success. Students will be introduced to “Standard Precautions” and learn about confidentiality through HIPPA. As students are guided through healthcare career exploration, they will discuss education levels, and requirements needed to be successful. Students will participate in a career project, and will hear from guest speakers in the healthcare field. Students will learn first-aid procedures. The skills and knowledge that students learn in Health Science 1 serve to prepare them for future clinical experiences such as job shadowing or internships as they advance in the Health Science courses.

General Requirements – This course is recommended for students in grades 9 and 10. Biology is recommended as a pre or co-requisite. Students should have an interest in learning about all facets of healthcare. To advance to Health Science 2, it is recommended that students should have an 80% score or higher in Health Science 1, or teacher recommendation. Students may earn certification in the American Heart Association’s Heartsaver First Aid Course, including CPR and the use of an AED.

COST: Supply Fee - $25.00 plus $5.00 for CPR certification.
Optional Cost: HOSA - $25.00

SPORTS MEDICINE 1 (555550CW)
Semester Course (1 unit), Grade Level(s): 9, 10, 11
This course is designed as an introduction for those students interested in basic athletic training and includes health care skills useful in a variety of careers. Emphasis is placed on preventing injuries as well as recognizing immediate first aid for common sports injuries. Students may earn Adult/Child/Infant CPR, First Aid and Adult AED certification through the American Heart Association. Cost for materials and processing certification is $30.00. A certified athletic trainer conducts taping labs. Students may work as student trainers at their high schools during and after taking Sports Medicine.

SPORTS MEDICINE 2
Semester Course (1 unit), Grade Level(s): 9, 10, 11, 12
Prerequisite Successful completion of Sports Medicine 1
Sports Medicine 2 emphasizes the assessment and rehabilitation of athletic injuries. Subject matter will include discussion of specific conditions and injuries that may be experienced by individuals participating in athletic activities. In addition, the use of appropriate therapeutic modalities and exercise in the care and rehabilitation of injuries will be examined. A review of the body systems will be included with this course. Advanced concepts related to the administrative aspects of the sports medicine program will also be covered in this course. Other career roles in Sports Medicine will be discussed as the athletic trainer takes the injured athlete through the pathway of recovery.

INTRODUCTION to AGRICULTURAL MECHANICS 9, 10, 11
Semester Course (1 unit)
Grade Level(s): 9-12
Be a part of the nation’s largest and most vital industry of agriculture, accounting for 20% of the nation’s workforce and offering an exciting variety of career opportunities. This course is a semester long introductory course in wildlife, plant science, animal science and basic agricultural mechanics skills. Learning activities are varied with classroom, laboratory, and field experiences will be emphasized in all areas of study. Hands on applications will be emphasized in all areas of study. Students taking agriculture classes will have the opportunity to participate in the FFA organization, a student agriculture leadership association. A $25.00 agricultural activity fee is utilized which covers FFA activities and awards, a tee shirt, and some class equipment.

ENVIRONMENTAL AND NATURAL RESOURCES MANAGEMENT
Semester Course (1 unit)
Grade Level(s): 9, 10, 11, (12 Only if completed 3 Agriculture units)
Prerequisite None
Environmental and Natural Resource Management is the introductory course for the Environmental and Natural Resources Career Pathway. It is a combination of subject matter and planned learning experiences on the principles involved in the
conservation and/or improvement of natural resources such as air, soil, water, land, forest, and wildlife for economic and recreational purposes. Instruction also emphasizes such factors as the establishment, management, and operation of land for recreational purposes. Typical learning activities include constructing a model watershed; identifying and/or measuring the levels of air, water, noise, and solid waste pollution in a selected site; participating in hands-on experiences with site analysis; evaluating competing interests; and analyzing biological and physical aspects of the environment and environment-related issues including methods of abating and controlling pollution. Students participate in personal and community leadership development activities, plan and implement a relevant school-to-work transition experience, and participate in FFA activities. A $25.00 agricultural activity fee is utilized which covers FFA activities and awards, a tee shirt, and some class equipment.

**EQUINE SCIENCE (567950CW)**
Semester Course (1 unit), Grade Level(s): 9, 10
This course is designed to help students learn specific concepts and principles about the science of horses and how these concepts and principles relate to horse management. This course will help the students to learn about careers related to horse management and help them determine their interest in such careers. Emphasis is on horse management, care, and career opportunities in equine science. Topics of study include the selection of foundation stock, anatomy, nutrition, exercise physiology, diseases, reproduction, and genetics of horses. Supervised agricultural experience programs and the FFA leadership activities are integral components of the course and provide many opportunities for practical application of instructional competencies. **This is not a riding class.** Students are encouraged to join and participate in FFA. A $25.00 agricultural activity fee is utilized which covers FFA activities and awards, a tee shirt and some class equipment.

**SMALL ANIMAL CARE (561250CW)**
Semester course (1 unit), Grade Level(s): 9, 10
A semester long course aimed at those who wish to care for dogs, cats and small animals in a professional capacity with an emphasis on anatomy, nutrition requirements, classifications, breed characteristics, handling/training, grooming, and reproduction. Classroom and laboratory activities are supplemented through supervised agricultural experiences (SAE) and FFA leadership programs and activities. Students are encouraged to join and participate in FFA. Upon completion of requirements, students may receive an industry-based certification with the Continental Kennel Club Canine Care and Training Program (CCTP) Level One. Cost for certification materials is $20.00. A $25.00 agricultural activity fee is utilized which covers FFA activities and awards, a tee shirt and some class equipment.

**FARM ANIMAL PRODUCTION**
Semester course (1 unit), Grade Level(s): 9, 10
The Farm Animal Production course is designed to teach technical knowledge and skills for entry-level positions in an animal production enterprise by developing competencies concerning the selection, breeding, physiology, nutrition, health, housing, feeding, and marketing of farm animals.

Typical instructional activities include hands-on experiences with the principles and practices essential in the production and management of farm animals and farm animal products for economic, recreational, and therapeutic uses; participating in personal and community leadership development activities; planning and implementing a relevant school-to-work transition experience; and participating in FFA activities.

A $25.00 agricultural activity fee is utilized which covers FFA activities and awards, a tee shirt and some class equipment.

**EQUIPMENT OPERATION AND MAINTENANCE (562150CW)**
Semester Course (1 unit), Grade Level(s): 9, 10
Today's modern agriculture needs power equipment to function efficiently. This course is designed to teach students how to safely operate and maintain equipment commonly used in the agricultural and turf industries: such as farm and utility tractors, all-terrain vehicles and utility vehicles; lawn and turf equipment; skid loaders and earth moving equipment; hay and forage equipment; tillage and plowing equipment. Other equipment that will be studied will include small 2-cycle power equipment such as chainsaws and string trimmers. Hands on activities maintaining gasoline, diesel and electrical power units will be utilized.

Typical instructional activities include hands-on experiences with agricultural power units; participating in personal and community leadership development activities; planning and implementing a relevant agricultural school-to-work experience program; and participating in FFA activities. A $25.00 agricultural activity fee is utilized which covers FFA activities and awards, a tee shirt and some class equipment.

**INTRODUCTION TO AGRICULTURAL ENGINEERING AND MECHANICS (569250CW)**
Semester Course (1 unit), Grade Level(s): 9, 10
All of agriculture is dependent on mechanization and technology. The Mechanics and Engineering course is designed to teach basic physical science skills in relation to agricultural engineering. In addition it provides for the development of general mechanical skills that are required in all areas of agricultural industry. Typical instructional development of general mechanical skills that are required in all areas of the agricultural industry. Typical instructional activities include hands-on experiences in developing research projects to examine ways to utilize agricultural crops in unique ways, to include, the development of biofuels and other alternative energy sources and to discover new uses for agricultural products. Students will be involved in design and fabrication projects involving wood, metal and plastics. Energy and environmental projects will also be implemented that will utilize real life situations relevant to agricultural industries. In addition, students will participate in personal and community leadership development activities, plan and implement a relevant school-to-work transition experience, and participate in FFA activities. A $25 agricultural activity fee covers FFA activities and awards, a T-shirt, and some class equipment.

NURSERY, GREENHOUSE, AND GARDEN CENTER TECHNOLOGY (567250CW)
Semester Course (1 unit), Grade Level(s): 9, 10
The course in Nursery, Greenhouse and Garden Center Technology includes organized subject matter and practical experiences related to the operation and management of a nursery, greenhouse or garden center. Instruction emphasizes knowledge and understanding of the importance of establishing, maintaining, and managing “green industry” enterprises. Typical instructional activities include hands-on experiences with propagating, growing, establishing, and maintaining nursery plants and greenhouse crops; tissue culture techniques; designing landscapes; preparing designs; sales analysis and management; participating in personal and community leadership development activities; planning and implementing a relevant school-to-work transition experience. Students are expected to join and participate in FFA. A $25.00 agricultural activity fee is utilized which covers FFA activities and awards, a tee shirt, and some class equipment.

WILDLIFE MANAGEMENT
Semester Course (1 unit)
Grade Level(s): 9, 10, 11, (12 Only if completed 3 Agriculture units)
Prerequisite Environmental and Natural Resources Management
The Wildlife Management course is designed to be introductory course for the Environmental and Natural Resources pathway. The course is a combination of subject matter and planned learning experiences on the principles involved in the conservation and/or improvement of natural resources such as air, soil, water, land, forest, and wildlife for economic and recreational purposes. Instruction also emphasizes such factors as the establishment, management, and operation of land for recreational purposes. A $25.00 agricultural activity fee is utilized which covers FFA activities and awards, a tee shirt, and some class equipment.

AUTOMOTIVE TECHNOLOGY 1
Semester Course (1 unit), Grade Level(s): 9, 10
This course is designed to train students to function and work safely in an automotive shop. This course will develop basic skills that will assist students in becoming productive automotive technicians or assist them as they enter a related field as a skilled worker. The course will include both theory and actual repair projects to develop these skills. Approximately 40% of the time will be shop or lab work and 60% will be theory in the classroom. Hands-on activities in the shop will be used to simulate the work environment in compliance with government regulations of the handling and disposal of hazardous chemicals. Strong emphasis will be on the use of service manuals (both hard copy and computer programmed) for proper procedures as well as shop safety and participation. The Automotive Technology program is NATEF certified and has an articulation agreement with Nashville Auto Diesel College in all automotive areas. Students will purchase safety glasses ($5) and a shirt ($20) plus pay a $10.00 materials fee.

MACHINE TECHNOLOGY 1
Semester Course (1 unit), Grade Level(s): 9, 10
Students taking this course will be introduced to the operation of machines such as lathes, milling machines, and drill presses through an exciting selection of hands-on projects. They will learn to use precision measuring instruments, layout tools, and interpret blueprints. This course also includes an emphasis on industrial safety and the many career opportunities available to the high tech machinist. Note: There is a $55.00 materials fee for this class.

MECHATRONICS 1
Semester Course (1 unit), Grade Level(s): 9 (if completed Alg. 1) and 10
This course is designed to introduce students to the many different skills needed by business and industry in the area of industrial maintenance. Students will work with shop drawings, industrial machine mechanisms, hydraulic, pneumatic, and electrical systems as well as power and hand tools. Students interested in learning about many different industrial specialty areas will want to enroll in this course.

NOTE: There is a $15.00 materials fee for this class.

WELDING 1
Semester Course (1 unit), Grade Level(s): 9, 10
This course is designed to show students techniques and operations learned in the welding field. Students get hands-on experience in welding while exploring career opportunities. Students will also have the opportunity to learn how to cut metal with an oxyacetylene hand-cutting torch. Students will purchase safety glasses and welding gloves for $15.00 and will pay a materials fee of $5.00.

SPORTS AND ENTERTAINMENT MARKETING 1
Semester Course (1 unit)
Grade Level: 9
Prerequisite None
This course is for students who wish to pursue careers in the various areas of the sports and entertainment industry. It includes careers in box office management and sales, group sales, public sales, marketing, development, advertising, and promotions.

BUILDING CONSTRUCTION 1
Semester Course (1 unit), Grade Level(s): 9, 10
Prerequisite None
Construction technology provides students with an understanding of how construction impacts their lives, both socially and professionally. Students will explore and demonstrate an understanding of five elements of construction: Career Opportunities, Design, Measurements, Tools, and Materials. **Students will pay a $10 materials fee.**

ELECTRICITY 1
Semester Course (1 unit), Grade Level(s): 9 (if completed Alg. 1) and 10
This course introduces students to basic residential electricity and safety practices. The students will learn to install switch and outlet boxes and become familiar with basic terms used in the National Electrical Code. Students will learn about new and emerging technology that is basic to the study of electricity. They will also demonstrate the knowledge and skill required to work safely on electrical circuits, apply the National Electrical Code to basic practical problems, and reference and use the codebook. Students will experience this through actually wiring circuits, outlets, switch boxes, and other areas in electricity. Students will pay a $5.00 materials fee.

CULINARY ARTS 1 (572250CW)
Semester Course (1 unit), Grade Level(s): 9
This course provides students with an overview of interest, aptitude, and technical skills needed to advance to Level One Culinary Arts and/or the food service industry. It includes: Food production lab overview, organization, equipment, tools identification, use & care, storage & nutrition. Integration of the Family and Consumer Sciences co-curricular student organization, Family Careers, and Community Leaders of America (FCCLA), greatly enhances this curriculum. Entrepreneurship projects: PCCTC Bistro Restaurant, Canning, Preserving, Catering and much more. Everything is aimed at teaching students the skills and knowledge necessary to become employable in an entry level restaurant position. Black Polo Shirt, Chef Pants, Chef Hat and black skid resistant shoes are required. Estimated Program Fees are $60.00 and include uniform. FCCLA dues are additional and optional.

GRAPHIC COMMUNICATION 1 (520550CW)
Semester Course (1 unit), Grade Level(s): 9
This course is designed to introduce students to the area of layout and design on Macintosh computers. A student will learn the use of computers, scanners, and various software to generate documents such as newspapers, business forms, brochures, stationery incorporating photographs, artwork, and text.-Screen printing is also introduced in this class. Students will pay a $10.00 materials fee.

NOTE: Successful completion of this course fulfills the computer science requirement for graduation.
INTRODUCTION TO FIREFIGHTING
Semester 2 - (1 unit B day mornings) Grade level 9-11
Prerequisite – English 1
This course is for students interested in going into fire and emergency medical services. Students will be introduced to basic fire chemistry, use of fire extinguishers, firefighting protective gear, the use of self-contained breathing apparatus, search and rescue, fire appliances and hoses, ladders, and knots. This is a physically active and demanding course. Students will be climbing ladders, carrying hoses, doing building searches, lifting victims and doing maintenance on the equipment and the fire truck. Students will be certified in Red Cross CPR/First Aid.
This course is offered on B-day mornings second semester.
This course is available to sophomores and juniors
Class Fee - $35 for CPR/First Aid certification – will be waived if student has taken Emergency Medical Responder the previous semester only.