

Descriptions for Proposed New NCE Courses

The courses listed with NA (not available) in the Program of Study document are proposed courses to be added to the 2008-2009 Appendix D of the NDE Curriculum Report. Following is a description of these courses.

Business, Marketing, and Management Career Field
<p>COLLEGE PRINCIPLES OF ACCOUNTING</p> <p>This college-level course is designed to provide introductory knowledge of financial accounting principles, concepts, and practices. Included topics are the balance sheet, the income statement, the statement of owner's equity, the statement of cash flows, journals, ledgers, accruals, adjusting and closing entries, internal controls, assets, liabilities, equity, and financial statement analysis. This course provides a foundation for more advanced work in the fields of accounting and business. This course is available for dual credit at a postsecondary school for an additional fee.</p> <p>Target Level: Grades 11-12</p>
<p>BUSINESS FINANCE</p> <p>This course introduces principles of business and management. Topics include basic business principles, personal finance, management, systems thinking, and the current environment for business in a multinational marketplace. Students will interpret data to develop short- and long-term budgetary plans, produce accurate financial reports, and make business decisions. Students will develop product knowledge related to financial and investment planning and insurance and annuity products. Students will develop a financial plan that includes savings, investing, borrowing, risk management and retirement.</p> <p>Target Level: Grades 11-12</p>
<p>BANKING AND CREDIT</p> <p>This course presents a survey of the principles and practices of banking and credit in the United States. The students learn the major functions of banks and other depository institutions, their in-house operations and procedures, central banking through the Federal Reserve System and modern trends in the banking industry. The credit component provides an overview of credit functions and operations including credit risk evaluation, loan creation and debt collection.</p> <p>Target Level: Grades 9-12</p>
<p>COLLEGE INTRODUCTION TO BUSINESS</p> <p>This college-level course provides a survey of the structure and functions of business. Included in the course is an overview of business organization, economics, management, marketing, and finance. This course is available for dual credit at a postsecondary school for an additional fee.</p> <p>Target Level: Grades 11-12</p>
<p>DESKTOP PUBLISHING</p> <p>Students will develop skill in the electronic procedures of producing and editing publications. Students will create, format, illustrate, design, edit/revise and print publications including electronically produced newsletters, flyers, brochures, reports, advertising materials and other publications. Students will demonstrate document composition and communication competencies.</p>

Business, Marketing, and Management Career Field

Target Level: Grades 10-12

COLLEGE PERSONAL FINANCIAL MANAGEMENT

This college-level course is designed to provide knowledge of personal financial management. Students learn to manage their resources and to make sound personal financial decisions, interpret data to develop short- and long-term budgetary plans and develop product knowledge related to financial and investment planning and insurance and annuity products. Students will develop a financial plan that includes savings, investing, borrowing, risk management, and retirement. This course is available for dual credit at a postsecondary school for an additional fee.

Target Level: Grades 11-12

SECURITIES AND INSURANCE

This is a one-semester course that provides an in-depth look at two sectors of the financial services industry from the perspectives of the consumer and the industry specialist. Students will analyze the front and back office operations in both the securities and insurance sectors, examine career paths in both areas, and gain insight into the current issues faced by the industry. An emphasis is placed on examining the impact of technology on these finance sectors and on evaluating career paths available in each area.

Target Level: Grades 10-12

INTRODUCTION TO RISK MANAGEMENT AND INSURANCE

This course is designed as an introduction to the basic principles and terminology of insurance. The course includes key definitions, organizational, and regulatory views of the insurance industry; the purpose and features of homeowners, automobile, commercial property, workers' compensation and casualty insurance policies; financial and professional liability coverages; the value of loss control and claims management to managing insurance costs; life and health insurance fundamentals; and the role of government in providing insurance such as Social Security.

Target Level: Grades 10-12

FOOD SERVICE MANAGEMENT I

Preparation for employment in commercial, institutional or other food industry service and management careers. Included may be a study of the nutritive value of foods, quantity food preparation, safety and sanitary and customer relations.

Target Level: Grades 10-12

FOOD SERVICE MANAGEMENT II

A continuation of quantity food preparation, nutrition and safety with emphasis on purchasing and inventory control, controlling foodservice costs, menu planning, marketing and legal issues. It is recommended that students be eligible for ProStart certification by the end of the Food Service Management sequence.

Target Level: Grades 10-12

Communication and Information Systems Career Field

AUDIO/VIDEO PRODUCTION

Students will explore career opportunities in the audio-video industries. Students will demonstrate use of audio-video production equipment including microphones, lighting requirements and camera operations. Students will demonstrate script writing and computer-based development of audio-video production and editing.

Target Level: Grades 10-12

DIGITAL PHOTOGRAPHY

Students will learn photographic principles and techniques common to both digital and traditional photography with a career emphasis. Students will learn about features common on digital cameras and artistic considerations. Students will use image editing software to learn principles of altering images for both image improvement and artistic considerations, as well as for use in visual communications.

Target Level: Grades 10-12

PUBLICATION JOURNALISM

Students will explore career opportunities in journalism including media companies, radio and television stations, newspapers and news magazines, and other news outlets. Students will study the history of journalism and its role in society and develop an awareness of cultural, regional, and diversity issues. Specific content will include writing processes used for various journalism media, including how to obtain information for writing the story, developing the story for print, on-line and broadcast, learning how photographs support the story, and application of knowledge of the similarities and differences in editorial, feature, and news writing styles.

Target Level: Grades 10-12

BROADCASTING

Students will explore careers in the fields of radio and television. Students will develop and emphasize writing skills, define terminology associated with television broadcasting, learn digital video and audio editing, and use studio recording equipment. Students will develop a television project, a radio project, and an on-line project.

Target Level: Grades 10-12

DESKTOP PUBLISHING

Students will develop skill in the electronic procedures of producing and editing publications. Students will create, format, illustrate, design, layout, edit/revise, and print publications including electronically produced newsletters, flyers, brochures, reports, advertising materials, and other publications. Students will demonstrate document composition and communication competencies.

Target Level: Grades 10-12

GRAPHIC DESIGN

Students will apply artistic and computer techniques to communicate ideas and information to customer audiences through illustration and other forms of digital or printed media. Students will demonstrate concept design, layout, and color theory.

Target Level: Grades 10-12

Communication and Information Systems Career Field

PROGRAMMING III

Students will demonstrate advanced skills in the program development process through expanded use of programming language. Languages may include, but are not limited to C++, Visual Basic, Java, HTML, SQL, RPG, COBOL and Assembler. Students demonstrating advanced level programming knowledge and skills may be exposed to collaborative environments that simulate project environments.

Target Level: Grades 11-12

INFORMATION TECHNOLOGY APPLICATIONS III

Students will work with a variety of software to develop items, such as desktop-published documents, digital media, podcasts, and E-portfolios. Students will develop skills in storyboarding, digital video capturing and editing, beginning animation, photo editing and web design. A project-based approach is used through the integration of a variety of digital media.

Target Level: Grades 10-12

INFORMATION TECHNOLOGY FUNDAMENTALS

Students are introduced to information technology and voice, video, and data communications and will demonstrate knowledge and problem-solving skills in the area of operating systems and computer hardware and understand information technology's ethical issues. Units would include, but not be limited to storage and drives, system boards, processors, memory and peripherals. Students may have the opportunity to build a computer, install the operating systems, and add peripherals. Help-desk skills may be included in the course.

Target Level: Grades 10-12

WEB DESIGN AND DEVELOPMENT

Students will demonstrate knowledge of web design and languages, including HTML, and utilize web design software to develop web pages. Students will apply principles and elements of design using images, hyperlinks, tables, forms, and cascading style sheets. Students may also maintain a school web site.

Target Level: Grades 10-12

DATABASE DESIGN AND DEVELOPMENT

A course designed to provide an introduction to the concepts of relational databases, the application of databases to business situations, and the management of relational databases and the tools associated with them. Students will utilize basic SQL syntax.

Target Level: Grades 11-12

Environmental and Agricultural Systems Career Field

AGRIBUSINESS

This course covers skills necessary for entry into employment or furthering education in an agriculture business. The course includes the study of business organizations, business structures, job responsibilities, job applications and interviewing, human relations, marketing, selling, displaying, using business machines, management and entrepreneurship skills.

Target Level: Grades 9-12

Environmental and Agricultural Systems Career Field

ADVANCED AGRIBUSINESS

This course builds on the knowledge and skills covered in the Introduction to Ag Marketing, Business and Entrepreneurship. Content includes developing a mission statement to guide business activities, agribusiness leadership and management in the free enterprise system, economic principals, budgeting, finance, risk management, business law, marketing and careers in agribusiness.

Target Level: Grades 9-12

AGRICULTURAL SALES

This course covers the fundamentals and techniques of successful selling, developing sales personality and the selling cycle.

Target Level: Grades 9-12

EQUINE SCIENCE

A course focusing on the basic scientific principles and processes related to equine physiology, breeding, nutrition and care in preparation for a career in the equine industry. Skills in biology, chemistry and mathematics are reinforced in this course, with opportunities for students to gain hands-on experience through work-based learning and leadership experiences.

Target Level: Grades 9-12

VETERINARY SCIENCE

Introduces students to the basics of animal care. Topics covered include disease, parasites, feeding, shelter, grooming, and general animal care. This course provides entry-level skills for those students who want to enter an occupation right out of high school and also provides the background necessary for students interested in pursuing a professional degree. Laboratory activities provide students with the hands-on experience and skills needed to participate in Supervised Agricultural Experience Programs and FFA Career Development Events.

Target Level: Grades 9-12

BIOTECHNOLOGY IN ANIMAL SCIENCE

This course provides instruction in the technologically advanced world of animal systems and life sciences, with exposure to the latest techniques and advances in animal biotechnology with a strong emphasis on hands-on and work-based activities.

Target Level: Grades 9-12

PROFESSIONAL TURF MANAGEMENT

Introduces procedures to establish, manage, and maintain ornamental or recreational turf, to prepare and maintain athletic fields and playing surfaces and to produce and market turf. Classroom and laboratory activities are supplemented through supervised agricultural experiences and leadership programs and activities.

Target Level: Grades 9-12

BIOTECHNOLOGY IN PLANT SCIENCE

Introduces the scientific theories and principles used in the production and management of plants for food, feed, fiber, soil conservation, and aesthetic value. Classroom and laboratory activities are supplemented through supervised agricultural experiences and leadership

Environmental and Agricultural Systems Career Field
<p>programs and activities. Target Level: Grades 9-12</p>
<p>ADVANCED FOOD SCIENCE Students will apply food science principles to enhance product development with particular emphasis on USDA/FDA standards, and nutritional analysis and evaluation of food groups. Students will analyze product preparation options to prepare products for distribution and utilize preservation methods to develop food preservation programs. Target Level: Grades 9-12</p>
<p>BIOTECHNICAL ENGINEERING Relevant projects from the diverse fields of bio-technology, bio-engineering, bio-medical engineering, and bio-molecular engineering enable students to apply and concurrently develop secondary-level knowledge and skills in biology, physics, technology, and mathematics. Target Level: Grades 11-12</p>
<p>ADVANCED ANIMAL SCIENCE This course includes advanced scientific principles and communication skills that build on the knowledge and skills learned in Introduction to Animal Systems. Topics include animal waste management, animal science economics, decision making, global concerns in the industry, genetics, and breeding. Work-based learning strategies are used to reinforce content, including but not limited to internships, agriscience projects, apprenticeships and supervised agricultural experience. Target Level: Grades 9-12</p>
<p>ADVANCED PLANT SCIENCE This course includes advanced scientific principles and communication skills that build on knowledge and skills learned in Introduction to Plant Systems. Topics include plant science economics, decision making, global concerns in the industry, genetics, and breeding. Work-based learning strategies are used to reinforce content, including but not limited to internships, agriscience projects, apprenticeships and supervised agriculture experiences. Target Level: Grades 9-12</p>
<p>ECOLOGY OF AGRICULTURE <i>Under development</i></p>
<p>SCIENCE OF EARTH SYSTEMS <i>Under development</i></p>
<p>ENVIRONMENTAL SCIENCE <i>Under development</i></p>
<p>BIOTECHNOLOGY IN FOOD PRODUCTS AND PROCESSING <i>Under development</i></p>
<p>WATER SCIENCE <i>Under development</i></p>
<p>POWER, STRUCTURAL AND TECHNICAL SYSTEMS This course introduces selected major areas of agricultural mechanics technology including small engine operation and repair, metal fabrication, woodworking, and electrical wiring,. Learning activities</p>

Environmental and Agricultural Systems Career Field

include basic understanding, skill development and problem-solving. Classroom and laboratory activities are supplemented through supervised agricultural experiences and leadership programs and activities.

Target Level: Grades 9-12

ADVANCED POWER, STRUCTURAL AND TECHNICAL SYSTEMS

Under development

AGRICULTURAL MECHANICS AND TECHNOLOGY

This course is designed to provide students with a more in-depth study of agricultural power and machinery. This course also provides students interested in agricultural mechanics the opportunity to explore the many career possibilities in the field of agricultural power and machinery. Additionally, hands-on-laboratory activities enhance the classroom learning experience and provide students with the skills needed to participate in Supervised Agricultural Experience Programs and FFA Career Development Events.

Target Level: Grades 9-12

METAL FABRICATION

This course is designed to provide students with a more in-depth study of metals and fabrication with metal products. This course also provides students interested in agricultural mechanics the opportunity to explore the many career possibilities in the field of agricultural metal fabrication. Additionally, hands-on-laboratory activities enhance the classroom learning experience and provide students with the skills needed to participate in Supervised Agricultural Experience Programs and FFA Career Development Events.

Target Level: Grades 9-12

STRUCTURAL FABRICATION

This course is designed to provide students with a more in-depth study of agricultural construction. This course also provides students interested in agricultural mechanics the opportunity to explore the many career possibilities in the field of agricultural construction. Additionally, hands-on-laboratory activities enhance the classroom learning experience and provide students with the skills needed to participate in Supervised Agricultural Experience Programs and FFA Career Development Events.

Target Level: Grades 9-12

Health Science Career Field

All courses are in 2007-2008 Appendix D

Human Services and Resources Career Field

INTRODUCTION TO HUMAN SERVICES AND RESOURCES

Students will experience how the concepts of communication, ethics, leadership and teamwork relate to the Human Services and Resources Career Field. Students will consider these concepts as applied to their multiple roles of family member, wage earner and citizens. Clusters to be explored in this career field are: (1) Human Services, (2) Government & Public Administration, (3) Law, Public Safety & Security and (4) Education & Training.

Target Level: Grades 10-12

LIFE AND CAREER ESSENTIALS-RELATIONSHIP LITERACY

Application of critical thinking, decision-making and problem solving skills to issues impacting adult relationships. Includes self-understanding, establishing and maintaining positive relationships in the family and workplace, crisis management and building family strengths. Life/work literacy concepts such as wellness across the lifespan and stress management are examined.

Target Level: Grade 12

LIFE AND CAREER ESSENTIALS – FINANCIAL LITERARY

A financial literacy course that provides students with the tools to take charge of their personal financial well-being and to make sound personal financial decision. Units of study include budgeting, credit, insurance, savings and investments, home ownership, banking and taxes. Life/work literacy concepts such as workplace issues and community resources are examined.

Target Level: Grade 12

CAREERS IN EDUCATION

Introduces students to the principles underlying teaching and learning from preschool through adult education. Topics would include classroom management, leadership and human relations skills, teaching strategies, responsibilities of teachers, legal parameters and the structure of the educational system.

Target Level: Grades 10-12

EXPERIENCING TEACHING

Provides students with volunteer experience in fields related to education. Goals are cooperatively set by student and supervising teacher so that students increase their understanding about the roles and responsibilities of a teacher. May include experiencing teaching in a controlled setting by designing learning experiences and giving presentations. Classroom instruction could include questioning, developing objectives and assessments, safety practices, IEP development and technology applications.

Target Level: Grades 10-12

FASHION DESIGN

Addresses the history of fashion, fabric art and printing, use of creativity to illustrate fashion concepts, and the application of artistic principles and techniques to the design of apparel and accessories. May include computer assisted designing, labor and cost analysis, and appropriate construction techniques. Instruction requires students to demonstrate information and media literacy skills.

Target Level: Grades 10-12

Human Services and Resources Career Field

HOME FURNISHINGS PRODUCTION

Students plan, select and construct upholstery, slip covers, draperies and other window treatments, and other home accessories. Includes interior design principles, proper use of equipment, employability skills and exposure to careers related to home furnishings. May be taught from an entrepreneurial perspective.

Target Level: Grades 10-12

LAW, PUBLIC SAFETY AND SECURITY

An exploration of the five pathways of this career cluster: correction services, emergency and fire management services, law enforcement services, legal services and security and protective services, including exposure to careers within all pathways.

Target Level: Grades 10-12

INTRODUCTION TO CRIMINAL JUSTICE

An overview of the history, development and philosophies for crime control and the role of law enforcement within a democratic society. Topics would include an examination of the criminal justice system with an emphasis on the police, the courts (prosecution and defense) and the correctional agencies, and exposure to careers related to criminal justice.

Target Level: Grades 10-12

INTRODUCTION TO FIRE AND EMERGENCY SERVICES

An introduction to fire prevention and control including the chemistry of combustion, factors that influence fire and safety procedures. May also introduce students to the organization and regulations of fire departments, emergency medical procedures and fire investigation techniques.

Target Level: Grades 10-12

ELDER CARE

Study of the biological, physiological, social and psychological needs and concerns of the elderly, and dealing with the aging process, death and dying in a realistic manner. May also offer the opportunity to explore various careers.

Target Level: Grades 10-12

Industrial, Manufacturing, and Engineering Systems Career Field

PRINCIPLES OF CONSTRUCTION

This course provides an overview of the total construction process. Students will develop problem-solving and critical-thinking skills by identifying the relationship between available resources and requirements of a project/problem to accomplish realistic planning.

Target Level: Grades 9-12

Industrial, Manufacturing, and Engineering Systems Career Field

APPLICATIONS IN CONSTRUCTION

Students will develop skills that relate to the construction industry. Course content will include steps for managing project assignments in a timely manner and development of skills for working as individuals and as team members to accomplish assignments. Students will complete a capstone construction project as a part of the course that utilizes the knowledge and skills learned in the pathway.

Target Level: Grades 11-12

THE LANGUAGE OF ARCHITECTURE AND CONSTRUCTION

A core course that will build the skills necessary to understand what is being communicated through drawings and documents, and in turn, convey ideas, duties, and tasks to others in a form representing the industry. Students will use and follow industry specific verbal and visual skills to accomplish workplace/jobsite communications.

Target Level: Grades 9-12

DISTRIBUTION – COMPREHENSIVE

Distribution – Comprehensive courses provide students with knowledge and skills related to the safe and efficient delivery of commodities to various markets. Course content typically includes the comparative advantages of various forms of transportation, distribution networks, processes for tracking large shipments of material, transportation of goods in a safe and secure manner, and packaging.

Target Level: Grades 10-12

MOBILE EQUIPMENT MAINTENANCE AND REPAIR

This course focuses on maintaining and improving facilities, equipment and system performance. Students will develop and manage repair plans by identifying and describing facility and mobile equipment reliability/performance problems including those associated with electrical/electronic, fluid power, mechanical systems, and computer control systems. Students will determine repair procedures and equipment, materials, parts, supplies, and labor requirements to accomplish repairs. Students will also develop plans for improving facilities, equipment, and system performance.

Target Level: Grades 11-12

AUTOMOTIVE BODY REPAIR AND REFINISHING

A course that provides students with knowledge and skills regarding the repair and refinishing of damaged or used cars. Course content may include (but is not limited to) stretching and shrinking auto body sheet metal; welding skills; frame and metal straightening; repair of fiberglass and synthetic materials; removing, repairing, and installing auto body parts.

Target Level: Grades 11-12

PRINCIPLES OF ENGINEERING

A course that helps students understand the field of engineering/engineering technology. Exploring various technology systems and manufacturing processes help students learn how

Industrial, Manufacturing, and Engineering Systems Career Field

engineers and technicians use math, science and technology in an engineering problem solving process to benefit people. The course also includes concerns about social and political consequences of technological change.

Target Level: Grades 9-12

INTRODUCTION TO ENGINEERING DESIGN

This course encourages students to use a problem-solving model to improve existing products and invent new ones. They learn how to apply this model to solve any problems, even outside of the classroom. Students use sophisticated three-dimension modeling software to communicate the details of these products. Emphasis is placed on analyzing potential solutions and communicating ideas to others.

Target Level: Grades 9-12

COMPUTER INTEGRATED MANUFACTURING

Students will learn concepts of robotics and automated manufacturing by creating three-dimensional designs with modeling software and producing models of their designs.

Target Level: Grades 10-12

CIVIL ENGINEERING AND ARCHITECTURE

This course utilizes teams of students to collaborate on the development of community-based building projects and conceptual design for project presentations.

Target Level: Grades 10-12

ENGINEERING DESIGN AND DEVELOPMENT

An engineering research course in which students work in teams to research, design and construct a solution to an open-ended engineering problem.

Target Level: Grades 10-12

AEROSPACE ENGINEERING

Through hands-on engineering projects, students learn about aerodynamics, astronautics, space-life sciences, and systems engineering.

Target Level: Grades 10-12

BIOTECHNICAL ENGINEERING

Relevant projects from the diverse fields of bio-technology, bio-engineering, bio-medical engineering, and bio-molecular engineering enable students to apply and concurrently develop secondary-level knowledge and skills in biology, physics, technology, and mathematics.

Target Level: Grades 10-12

INTRODUCTION TO MANUFACTURING/MECHANTRONICS

This course prepares students for careers in manufacturing. The main focus is a core structure study in hydraulics, pneumatics, electrical, material testing, sensors, electric and pneumatic robot operations and an introduction to programmable logic controllers.

Target Level: Grades 9-12