

**2007-08**  
**Curriculum Guide**

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# CAREER PROGRAMS

The importance of a quality education cannot be over-emphasized. In today's competitive job market, graduates must be equipped to adjust to rapid technological changes. Even more, state-of-the-art technical skills and knowledge must be enriched and complemented by a solid foundation of academic skills in communication, math, and science. McKenzie Career Center, furnished with the most current equipment, provided an opportunity for both an excellent technical and academic education.

The following courses require an application through McKenzie Career Center prior to enrollment.

\*Weighted Course

## A+/COMPUTER SERVICES

**2 Sem. 4 Cr. Grades 9-10-11-12**

One Block daily

Course Code 5952Cw (Weighted Grade)

RECOMMENDED PREPARATION: Complete an application and an interview

COURSE DESCRIPTION: This course is designed to prepare students to become computer service technicians by passing two nationally recognized exams. A+ certification means you can have the knowledge, ability, and skills demanded by the computer industry. As an A+ certified computer service technician better paying jobs are available. There is a tremendous shortage of such technicians so the demand for workers is great as over 220,000 jobs are created and left unfilled. **CORE 40 directed elective**

## AUTO MECHANICS (Auto Service Technology)

**2 Sem. 6 Cr. Grades 10-11-12**

3 Blocks each semester

Course Code: 5510C (first year)

Course Code: 5508C (second year)

Physics of Technology \*AST (Core 40)

Course Code: 3088AM

RECOMMENDED PREPARATION: Transportation systems, completion of an application and successful interview by instructor, or permission of the director.

COURSE DESCRIPTION: Students will develop skills in the repair and maintenance of automobiles. Six of the ASE eight areas will be covered, brakes, steering-suspension, engines, drivelines, electrical and engine performance. There is an AYES paid internship available for students who can qualify for it. Successful completion of the program can lead to entry-level positions in the industry. Students may qualify for dual credits at some colleges. First year student are enrolled in the Physics of Technology class during the first year of AST. ASE and AYES nationally certify the auto program for more information visit the AST web site. <http://www.msdl.t.k12.in.us/msdl/mckenzie/AST/index.htm>

## BODY FENDER REPAIR

(Collision Repair)

**2 Sem. 6 Cr. Grades 10-11-12**

3 Blocks each semester

Course Code 5514C (first year)

Course Code 5516C (second year)

RECOMMENDED PREPARATION: Algebra I. Successful completion of application. The student must pass the first year in order to enroll in the second year program.

REQUIREMENTS: Coveralls and safety shoes for lab work.

COURSE DESCRIPTION: First semester: safety, metal repair power tools, and fillers. Second semester: mig welding, estimating, paint surface prep, and single stage topcoats. Fourth semester: pulling measuring, and senior projects. Students who have shown themselves to be proficient and employable will be considered for an apprenticeship program (which includes a job), postsecondary education or entry level position in a collision repair facility. Tour of the program or student shadowing is available upon request. Skilled collision repair technicians are highly paid and in demand. This experience can lead to shop ownership, management of an independent shop or a new car dealership. **CORE 40 directed elective**

## BUILDING TRADES I-4

**2 sem. 4 cr. Grades 10-11-12**

2 blocks each semester

Course Code: 5530C (first year)

Course Code: 5578C (second year)

RECOMMENDED PREPARATION: Construction systems, completion of an application or permission of career director. Enrollment in Algebra I (Tenth grade students will be considered if space is available.)

COURSE DESCRIPTION: Building trades is a 2-year program designed to prepare a student for employment in the construction trades. Students will learn how to use hand tools common to the residential building trades. While actually building a residential home, students will study and have experiences in excavation, concrete, brick, block and stone laying, carpentry, plumbing, electrical, drywall, roofing, heating and air conditioning, painting, and landscaping. In addition to these areas, selecting a building site, purchasing a home, mortgages, and other phases necessary to familiarize the student in all phases of the construction trades may be studied. **CORE 40 directed elective**

## BUSINESS TECHNOLOGY LAB I (IC3)

**2 Sem. 2 Cr. Grades 9-10**

2 credits per year

Course Code 5244C

RECOMMENDED PREPARATION: None

COURSE DESCRIPTION: This two semester course will provide the knowledge and skills required for students to become functional users of computer hardware, software applications, networks and the internet. After successfully passing the certification test, which serves as a universal measure of basic computer knowledge

and internet skills, students will be well prepared for the next phase of life; continued enrollment in information technology classes, further education, or gainful employment. **CORE 40 directed elective**

## COMPUTER APPLICATIONS / STRATEGIES FOR SUCCESS

**2 Sem. 2 Cr. Grade 9**

Course Code: 5252C

RECOMMENDED PREPARATION: None.

COURSE DESCRIPTION: This full year class combines strategies for success and computer applications. This is the first class in the Academy of Information Technology and is designed for students choosing to pursue a career in technology. The real-life lessons of the Strategies course offer students concrete methods of readying themselves for life after high school by developing their strengths interpersonal relationships, personal organization, and precursor skills for job success. The computer application lessons offer students hands-on activities in e-mail, internet, presentations, spreadsheets, word processing database, and desktop publishing. **CORE 40 directed elective**

## INTRODUCTION TO COSMETOLOGY

**2 Sem. 2 Cr. Grade 10**

Course Code: 5806C

RECOMMENDED PREPARATION: Complete an application.

COURSE DESCRIPTION: For the student who wants to explore cosmetology, this course will cover some of the basic state required theory along with some of the basic skills necessary for all licensed cosmetologists. There is a \$50.00 to cover materials. **CORE 40 directed elective**

## COSMETOLOGY I-4

**4 Sem. 4 Cr. Grades 11-12**

Course Code: 5802C (first year)

Course Code: 5804C (second year)

RECOMMENDED PREPARATION: Pass Introduction to Cosmetology. Successful completion of 1-2 for acceptance into 3-4.

COURSE DESCRIPTION: A two-year course designed to complete 1,500 hours of combines theory and hands-on skills needed to complete requirement for licensure of a cosmetologist. First year students learn basic skills, sanitation rules, and are provided realistic hands-on experiences in a laboratory environment along with oral communication skills needed for job placement. When students successfully follow the prescribed curriculum and laboratory hours, they will be able to take the state board exam for cosmetology and obtain a license to work in a salon. The cost of the required student fee is \$465. **CORE 40 directed elective**

## **ENTREPRENEURSHIP**

**2 Sem. 2 Cr. Grades 10-11-12**

*Course Code: 4566C*

RECOMMENDED PREPARATION: None

COURSE DESCRIPTION: Entrepreneurship is the process of starting and managing your own business. This class is specifically for student who hope to open their own business in the future. Each student will complete a business plan—an actual proposal that describes every part of a new business. This plan is used to obtain financing as well as guide the opening and management of a business. The development of the plan includes self-directed research. Topics will include free enterprise, insurance, marketing, buying, selling, pricing, advertising, financing, accounting, and tax laws. **CORE 40 directed elective**

## **FINANCIAL SERVICES MARKETING**

**2 Sem. 2 Cr. Grade 11**

*Course Code: 5972C*

RECOMMENDED PREPARATION: Accounting and/or marketing plus a completed application.

COURSE DESCRIPTION: Do you want to be a bank manager, stockbroker, or financial planner? This is a one or two-year program featuring 12 weeks of banking, 12 weeks of financial planning and 12 weeks of securities, such as stocks, bonds, and mutual funds. This is a specialized marketing course, which provides instruction in marketing and business fundamentals as they relate to banks, credit unions, stockbrokers, insurance companies, credit unions, stockbrokers, insurance companies, and corporate credit departments. Successful completion of the program allows you the opportunity to work in a financial business in a paid internship for the summer or in a paid internship during your senior year through the Marketing Education co-op program. **CORE 40 directed elective**

## **FOOD INDUSTRIAL OCCUPATION I & II**

**2 Sem. 6 Cr. Grades 10-11-12**

3 Blocks each semester

*Course Code: 5440C (first year)*

*Course code: 5442C (second year)*

RECOMMENDED PREPARATION: Suggest Nutrition and Wellness

COURSE DESCRIPTION: The student will participate in the management and the operation of Bernie's Place restaurant. Through this experience, students will develop skills in table service, cashiering, baking, salad preparation, quantity food production, breakfast and fast food, cleaning and sanitation, menu planning and more. Practical experience will be gained in the use of commercial restaurant equipment and dealing with the public. Program completion can lead to opportunities for entry into food service area in positions found in cafeterias, schools, hotels, fast food service plants, factories, clubs and restaurants. By maintaining a "B" in the ProStart curriculum, receiving a SERVSAFE certification, and receiving a "B" in an food industry internship, students may earn 9 hours of college credit. **CORE 40 directed elective**

## **INTRODUCTION TO HEALTH CARE SYSTEMS/ MEDICAL TERMINOLOGY**

**2 Semesters/2 Credits**

*Course Code: 5182C Grades 11-12*

RECOMMENDED PREPARATION: Biology I-2 and Algebra I or permission of the teacher and complete an application. Concurrent enrollment with Medical Terminology is required.

COURSE DESCRIPTION: This course is designed to help the student gain an understanding of the health field, career options, and also wellness concepts. This course is highly recommended for any student who thinks he/she is interested in a Health Career. The curriculum includes career research, study of diseases, CPR-First Aid, and job shadowing experiences. **CORE 40 directed elective**

## **MEDICAL TERMINOLOGY**

**2 Semesters/2 Credits**

*Course Code: 5180C Grades 11-12*

RECOMMENDED PREPARATION: Concurrent enrollment with Introduction to Health Care Systems is a requirement and complete an application.

COURSE DESCRIPTION: This course prepares students with language skills necessary for effective, independent use of health and medical reference materials. It includes the study of health and medical abbreviations, symbols, and Greek and Latin word part meanings taught within the context of body systems. The course builds skills in pronouncing, spelling, and defining new words encountered in verbal or written information. Dual credit with post-secondary education is available. **CORE 40 directed elective**

## **INTERACTIVE MEDIA (Digital Media)**

**2 Blocks/Sem. (2 sem. course) Grades 11-12**

*Course Code: 5986C*

RECOMMENDED PREPARATION: Any Art Class or audio/Video Experience.

COURSE DESCRIPTION: This course introduces students to the basics of computer graphics, 3D animation, audio, and video. Beginning with the fundamentals of computers and the computer as a design tool, students will progress to master these four areas. The graphics curriculum includes graphic design fundamentals, scanning, digital photography, and mastery of Adobe Photoshop. Digital Media's audio component includes basic physics of audio, hands-on mixing experience, mastery of looping and editing software, direct-to-disk recording, and audio for video. In our video component students will learn to shoot, edit, and manipulate high quality DV video footage using Final Cut Pro. Film, Lighting, and DVD authoring are also studied. 3D animation is a growing field for the digital multimedia specialist, and we explore and create using Cinema 4D. In all four areas we strive for excellence, professionalism and fun. IM students win many state media awards. One of the only programs of its type in the state, first year students earn 3 credits at IUPUI and

9 Credits at Ivy Tech Community College of Indiana. **CORE 40 directed elective**

## **INTERACTIVE MEDIA II (Video Game Creation)**

(Advanced Interactive Media)

**2 Sem. 4 Cr Grades 11-12**

Two blocks/full year course

*Course Code: 5988C*

RECOMMENDED PREPARATION: Interactive Media with instructor's approval

COURSE DESCRIPTION: This course allows students to further pursue the areas of 3D, graphics, audio, and video. While continuing to work in all these areas of media, we will focus on learning 3D video games, 2D interactive experiences, and video game concepts and environments. Interactive environments will be created using Cinema 4D and manipulated using Macromedia Director. Students compete in state and local competitions, create video projects, learn software as a class, and go on field trips together. In all four areas we strive for professionalism and fun. Students earn 3 more credits at Ivy Tech Community College of Indiana, for a total of 12. **CORE 40 directed elective**

## **MARKETING FOUNDATIONS I**

**2 Sem. 2 Cr. Grades 10-11-12**

*Course Code: 5914C*

RECOMMENDED PREPARATION: None.

COURSE DESCRIPTION: Why are there so many different styles of jeans, cars, and athletic shoes? How does a manufacturer determine the needs of the consumer and how to reach a targeted audience? How does a company successfully sell a product? These questions are answered in Marketing I and begin your journey into the world of marketing. From baby boomers to generation Y -- from e-commerce to fluctuating gas prices and salesmanship -- this class will help you to succeed in school and the workplace. How do you learn about new products? Commercials on TV, magazines, radio, newspapers, displays, publicity, give-a-ways, junk mail. How much does a 30-second commercial cost on the Super Bowl—the world's most watched TV program? Where do new product ideas come from? Real world marketing techniques include: Virtual Business computer simulation, case studies, and projects. **CORE 40 directed elective**

## **HEALTH CAREERS I & II**

**2 Sem. 6 Cr. Grade 12**

3 Blocks each semester

*Course Code: 5184C*

RECOMMENDED PREPARATION: Successful completion of an interview, positive teacher recommendations and successful completion of Intro. To Health Care Systems, Medical Terminology, and Anatomy and Physiology (concurrent enrollment of Anatomy and Physiology possible. (Anatomy and Physiology requirement excludes current IHOC/MT students.)

**COURSE DESCRIPTION:** The student will continue to explore the changing face of the health care field, available careers, medical language, and postsecondary programs. Students will learn skills in basic patient care, including vital signs, universal precautions and infection control, body mechanics and assisting with activities of daily living (grooming, bathing, ambulation, and nutrition). Students will also learn skills such as teamwork, accountability and confidentiality communication and interviewing. Learning will be enhanced by health care speakers, hands-on in-class labs and second semester clinical experiences. Allied health options in radiology and physical therapy or state certification as a nursing assistant are options depending on facility availability. **CORE 40 directed elective**

### **NETWORK + CERTIFICATION**

**1 Sem. 2 Cr. Grades 10-11-12**

One Block Daily

*Course Code: 5405 Cw (Weighted Grade)*

**RECOMMENDED PREPARATION:** Complete A+

**COURSE DESCRIPTION:** This class is designed to prepare students to achieve Network+ Certification and is the perfect follow-up to the A+ Certification course. This comprehensive skills-based course includes both textbook study and hands-on exercises to help students learn to specifically install and maintain local area networks. Students learn the basics and protocols of TCP/IP and the internet. This course is designed for those interested in gaining the skills that provide industry credentials in the field of networking. **CORE 40 directed elective**

### **NETWORK TOPOLOGIES & CABLING**

**1 Sem. 2Cr Grades 10-11-12**

One Block Daily

*Spring 5406Cw (Weighted Grade)*

**RECOMMENDED PREPARATION:** Complete Network +

**COURSE DESCRIPTION:** In Network Topologies and Cabling, students will learn grounding, preparing cable ends, testing cables, using patch panels, and installing copper cables. Beyond copper cabling, students will dissect plastic and glass fiber optic cables, prepare cables for pulling, install connectors and splices, test constructed cables, and troubleshoot incorrectly installed cables. Students will have hands-on experience with real-world copper and fiber optic cabling in a workplace setting. **CORE 40 directed elective**

### **IT: INFORMATION SUPPORT & SERVICES (Oracle)**

**2 Sem. 2 Cr. Grades 11-12**

*Course Code: 5230C*

**RECOMMENDED PREPARATION:** Completion of Computer Applications

**COURSE DESCRIPTION:** The Oracle course provides students with the knowledge and skills to design and develop databases. Whether students pursue careers in business, marketing, accounting, database management, or the myriad

fields of information technology, data modeling forms the basis for identifying the information needs of business. Students will be provided with the skills necessary to pursue academic and professional opportunities. This course seeks to engage students in activities that help them develop as citizens in a culturally diverse world. Students who excel in technology and possess professional skills will succeed in the 21st century. **CORE 40 directed elective**

### **ADVANCED COMPUTER APPLICATIONS**

**1 Sem. 1 Cr Grades 10-11-12**

*Course Code: Fall 4527C*

*Course Code: Spring 4528C*

**RECOMMENDED PREPARATION:** Computer Applications

**COURSE DESCRIPTION:** Advanced Computer Applications is a one semester follow-up course to Computer Applications. It builds upon previously learned keyboarding and computer application skills to develop personal and occupational competencies. Using Microsoft Office, the students will enhance their understanding of Access (database) and integrate MS Word, Excel and Power Point to create document presentations. **Core 40 directed elective**

### **WELDING I-4**

**3 blocks each semester**

*Course Code: 5776C (first year)*

*Course Code: 5778C (second year)*

**RECOMMENDED PREPARATION:** Drafting, successful interview or permission of the career director. (Tenth grade students will be considered if space is available.)

**COURSE DESCRIPTION:** Welding will prepared students to be employed at the entry level with opportunities to advance to more technical aspects of the industry. Upon completion of this course, the student will have knowledge of safety issues in welding shops, print reading, reading welding symbols, welding and cutting process, math for welders, shielded metal arc welding, gas tungsten and gas arc welding, special welding processes, and metallurgy for the non metallurgist. Successful completion of this program can lead to job opportunities in industrial welding. **CORE 40 directed elective**

### **EARLY CHILDHOOD EDUCATION**

**2-3 Cr./Sem**

*Course Code: 5412C (Related 1 and 2)*

*Course Code: 5414C (Lab)*

*Course Code: 5418C (Related 3 and 4)*

*Course Code: 5414C (Lab)*

**RECOMMENDED PREPARATION:** Parenting and/or Child Development and complete an application. (10th grade students will be considered if space is available, and they have taken the prerequisite.

**COURSE DESCRIPTION:** This course is for the student who wishes a career working with children. The student participates in the Lawrence Township employees' day care center which is located at McKenzie Career Center. The related class focuses on day care management,

pre-school development, and teaching skills. During the 1 1/2 hours laboratory experience, the student assists the day care teacher, reads stories, leads circle time, and guides the children in art, language, math, science, motor, and music activities. The student plans and implements age appropriate lessons. Special assignments include planning and implementing activities with the children and helping chaperone field trips. Child Care 4 students will observe and intern in the community. Students who complete the program have the opportunity to earn up to 6 Ivy Tech Community College of Indiana credits. **CORE 40 directed elective**

## **COOPERATIVE (CO-OP) PROGRAMS**

The following programs are designed to give the student on-the-job training as part of his/her total learning experience. Each student will be enrolled in a morning related in which specific jobs skills and responsibilities will be studied. The student will then be released early from school to a job which will be secured via coordinated efforts of the program coordinator, student, and employer. Students enrolled in the program will receive credit from school: 1) credit for the related class, and 2) for the job and pay from the employer for the work experience. **The student must provide his/her own transportation to and from job situations and be willing to work a minimum of fifteen hours per week.** Each student applying for a co-op program must be interviewed by a coordinator prior to being accepted.

### **BUSINESS CO-OP**

**2 Sem. 6 Cr. Grade 12**

One year program (6 credits per year)

*Course Code: 5260C*

(Business Co-op Related Class)

5264C (1 Block Co-op) 5262C (2 Block Co-op)

**RECOMMENDED PREPARATION:** Students must have successfully completed Keyboarding and complete an application. Computer Applications, Business Tech Lab I and/or II and Accounting are highly recommended. These classes may be taken before or concurrently.

**COURSE DESCRIPTION:** This program combines related classroom instruction with on-the-job training and prepares the student who is interested in any type of office occupation. In the related class, students will have the opportunity to study: job seeking skills, ethics safety, career exploration, and labor laws. Other related areas include banking budgeting, credit, insurance, and taxes.

## **INDUSTRIAL COOPERATIVE TRAINING (ICT) I-4**

**2 Sem. 6 Cr. Grade 12**

Course Code: 5892C (ICT Related) 5894C (1 block co-op) 5890C (2 blocks co-op)

RECOMMENDED PREPARATION: Complete an application

COURSE DESCRIPTION: This program combines related classroom instruction with on-the-job training and prepares the student who is interested in industrial, service to technical career fields. In the related class, students will have the opportunity to study: job seeking skills, ethics, safety, career exploration and labor laws. Other related areas include banking, budgeting, credit, insurance, and taxes.

## **MARKETING FOUNDATIONS II**

**2 Sem. 2 Cr. Grades 12**

Course Code: 5918C

RECOMMENDED PREPARATION: One of the following – Marketing Foundations, Entrepreneurship, International Business, or Financial Services. Complete an application.

COURSE DESCRIPTION: the Advanced Marketing class is open to seniors only. Students will continue to learn more about marketing career choices, pricing, distribution, retailing, wholesaling, personal budgeting, marketing management, and international marketing. Real world marketing techniques include Virtual Business simulations, Kamans' Fashion Buying and a senior research project.

## **MARKETING FIELD EXPERIENCE**

**2 Sem. 6 Cr. Grade 12**

Course Code: 5922C (1 Block co-op)

5920C (2 Blocks co-op)

RECOMMENDED PREPARATION: Two of the following must be taken prior to or concurrently with Co-op: Marketing I, Marketing II, or Entrepreneurship plus complete an application.

COURSE DESCRIPTION: Work in a department store, specialty store, bank, stockbroker, computer training, real estate, insurance, restaurant, supermarket or wholesales. Lean and earn at a paid internship through Marketing Co-op. Students must take Marketing 3-4 concurrently and may take other classes concurrently. You'll need to: provide transportation, and work a minimum of 15 hours per week.

# **PRE-ENGINEERING**

## **INTRODUCTION TO ENGINEERING DESIGN**

**2 Sem. 2 Cr. Grades 9-10-11-12**

Course Code: 5950C

RECOMMENDED PREPARATION: Enrollment in Algebra I.

COURSE DESCRIPTION: This is an introductory course that develops student problem solving skills with emphasis placed on the development of three-dimensional solid models. Students will work from sketching simple geometric shapes to applying a solid modeling computer software

package. They will learn a problem-solving design process and how it is used in industry to manufacture a product. The Computer Aided Design system (CAD) will also be used to analyze and evaluate the product design. The equipment used and the techniques learning is state-of-the art, and is currently being used by engineers throughout the United States. This is the first of five pre-engineering courses. **CORE 40 directed elective**

## **DIGITAL ELECTRONICS**

**2 Sem. 2 Cr. Grades 10-11-12**

Course Code: 5402C

RECOMMENDED PREPARATION: Either complete Introduction to Engineering or Principles of Technology.

COURSE DESCRIPTION: Digital Electronics is a course of study in applied digital logic. This course is patterned after the first semester course in Digital Electronics taught in two and four year colleges. Students will study the application of Boolean logic to the solution of problems. Such circuits are found in watches, calculators, video games, computers, and thousands of other devices. The use of smart circuits is present in virtually all aspects of our lives, and its use is increasing rapidly, making digital electronics an important course of study for a student exploring a career in engineering/engineering technology. Using Circuit Maker, the industry standard, students will test and analyze simple and complex digital circuitry. Students will design circuits using Circuit Maker, export their designs to a printed circuit auto-routing program that generates printed circuit boards, and construct the design using chips and other components. **CORE 40 directed elective**

## **PRINCIPLES OF ENGINEERING**

**2 Sem. 2 Cr.**

Course Code: 5954C Grades 9, 10, 11, 12

RECOMMENDED PREPARATION: Complete Algebra or concurrent enrollment in Algebra I.

COURSE DESCRIPTION: This course provides an overview of engineering and engineering technology. Students develop problem-solving skills by tackling real-world engineering problems. Through theory and practical hands-on experiences students address the emerging social and political consequences of technical change. Students also learn about mechanical, electrical, fluid, pneumatics and control systems. **CORE 40 directed elective**

## **CIVIL ENGINEERING AND ARCHITECTURE**

**2 Sem. 2 Cr. Grades 11, 12**

Course Code: 5956C

RECOMMENDED PREPARATION: Concurrent enrollment in Principles of Engineering is suggested as well as Algebra II.

COURSE DESCRIPTION: This course places its emphasis on civil and architectural engineering. Students will take part in project based learning and solving real-world problems as they relate to civil and architectural engineering. Units will

include project and site planning, and building design. Students will work in teams, and learn the skills required for jobs and post secondary education. **CORE 40 directed elective**

## **BIOTECHNICAL ENGINEERING**

**2 Sem. 2 Cr. Grade 11-12**

Course Code: 4818C

RECOMMENDED PREPARATION:

Successful past enrollment/ in Algebra II concurrent enrollment in Biology II or Algebra II.

COURSE DESCRIPTION: Biotechnical Engineering introduces students to the fundamental aspects of biotechnology and engineering technologies related to this emerging field. Instruction will emphasize the fusing of engineering and technology with life sciences to create new products. Application and design principles will be used in conjunction with scientific knowledge to explore and investigate such areas as; development of biomedical devices; pharmaceutical and medical therapies; and agricultural research and development. Ethical, social and regulatory issues of biotechnology applications will be addressed through out the course. **CORE 40 directed elective**

## **ENGINEERING DESIGN AND DEVELOPMENT**

**2 Sem. 2 Cr. Grades 11-12**

Course code: 5644C

PREREQUISITES: Students must have completed at least two years of the pre-engineering course or who have been actively involved with the FIRST Robotics team for two or more years. An application must be submitted

COURSE DESCRIPTION: This course helps student apply what they have learned in academic and pre-engineering courses as they complete challenging, self-directed projects. Students work in teams to design and build solutions to authentic engineering problems. Students keep journals of notes, sketches, mathematical calculations, and scientific research. Student teams make progress reports to their peers, mentor and instructor, and exchange constructive criticism and consultation. At the end of the course, teams present their research paper and defend their projects to a panel of engineers, business leaders and engineering college educators for professional review and feedback. This course equips students with the independent study skills they will need in postsecondary education. **CORE 40 directed elective**

## **PRINCIPLES OF THE BIOMEDICAL SCIENCES**

**2 Sem. 2 Cr. Grade 9 – 10**

RECOMMENDED PREPARATION: Successful completion or concurrent enrollment in Algebra I and completed application

COURSE DESCRIPTION: 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 bio-informatics. 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 lead 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. **CORE 40 directed elective**

## ACADEMIC CLASSES

### **CAREER EXPLORATION 1-2** **2 Sem. 2 Cr. Grades 9-10**

*Fall 0521C Spring 0522C*

RECOMMENDED PREPARATION: None (Successful completion of first semester is required to continue on to semester two.)

COURSE DESCRIPTION: The purpose of Career Exploration is to introduce students to a variety of careers within different career clusters and to identify and develop essential skills for success in the workplace. Students will explore careers in a variety of ways by studying job market trends, listening to guest speakers, occasional opportunities to shadow, technical and virtual experiences, and through research with a major culminating research project. Students will partake in different activities using verbal and written expression, and public speaking to help develop their communication and people skills. Students will demonstrate and apply practical skills related to seeking, gaining, and retaining employment.

### **ENGLISH 10** **2 Sem. 2 Cr. Grade 10**

*Spring 1004C*

RECOMMENDED PREPARATION: None

COURSE DESCRIPTION: The purpose of this course is to strengthen students' overall reading comprehension, organizational skills, and workplace communication skills, as they are showcased in speech, literature, and composition. Students will learn self- and time management skills, critical thinking, and interpersonal strategies needed for the workplace, postsecondary institutions, and the community. Current and classic literature, essays and compositions, speech, vocabulary and spelling, integrated special projects, and

community service comprise the course's units.

### **CORE 40 & AHD course**

### **ENGLISH 11** **2 Sem. 2 Cr. Grade 11**

*Course Code 1006C*

RECOMMENDED PREPARATION: None

COURSE DESCRIPTION: English 11 offers students the necessary foundation for sound reading comprehension, organizational, oral and written skills inherent to success. With American literature and its influence on our society as a focus, students will use formal research, written communication, and self-exploration to discover potential career paths.

### **CORE 40 & AHD course**

### **ENG 12** **2 Sem., 2 Cr. Grade 12**

*Course Code: 1008C*

RECOMMENDED PREPARATION: None

COURSE DESCRIPTION: The purpose of this course is three-fold: to examine and utilize a process for technical and expository writing, focus on and use personal communication skills for job marketability and postsecondary education, and to explore interpersonal and intrapersonal skills for team effectively. Students will read, analyze, and interpret contemporary and classic literature, and they will write essays and compositions for a variety of audiences and purposes. Vocabulary, spelling, consumer education, and job acquisition skills are also studies. Additionally, they will master organizational, research, and technology skills which will assist them in completing a senior research project. **CORE 40 & AHD course**

### **COMPOSITION 101** **1 Sem. 1 Cr. Grade 12**

*Course Code: Fall 1053C Spring 1054C*

PREREQUISITES: Counselor recommendation, parent permission, 42 Verbal Score on PSAT, 410 Verbal Score on SAT, or 18 Composite on ACT. As required by Vincennes University )

COURSE DESCRIPTION: English Composition 101, under the partnership of McKenzie Career Center and Vincennes University, offers the college-bound senior three hours of college credit towards the college freshman requirement in English, as well as one hour of high school credit. Costs include tuition - \$75.00 and textbook/fees - \$45.00. Students learn how to develop their ability to think, organize, and express themselves clearly and effectively through diverse writing assignments for a variety of audiences and purposes. Short lecture, assigned readings, miscellaneous (computer) lab exercises, informal and formal essays and compositions, and grammar comprise units of study. Seven formal essays (minimum) are completed, and students must maintain a "c" average to receive college credit. Except for Notre Dame, Purdue University, and Rose Hulman, most credit transfers to state and private colleges and universities. **CORE 40 & AHD course**

### **ALGEBRA I** **2 Sem. 2 Cr. Grades 10-11-12**

*Course Code: 2520C*

RECOMMENDED PREPARATION: None

COURSE DESCRIPTION: This course is designed for the student who grasps mathematical concepts through a contextual hands-on format. Through an emphasis on labs, team learning, and project-based learning, students see the relevance of algebra to its' applications in the workplace. All regular topics are covered including solving linear equations and linear equalities, factoring, and other related material. In addition, related concepts such as statistics and probability are also included. **CORE 40 & AHD course**

### **GEOMETRY** **2 Sem. 2 Cr. Grades 10-11-12**

*Course Code: 2532C*

PREREQUISITES: Successful completion of Algebra or teacher recommendation.

COURSE DESCRIPTION: This course is designed for the student who grasps mathematical concepts through a contextual, hands-on format. Through an emphasis on project-based learning, students will see the relevance of geometry to its application in the workplace/workforce. All regular topics of geometry, including area, volume, special triangles, and other related material will be covered in the two-semester course. **CORE 40 & AHD course**

### **ALGEBRA II** **2 Sem. 2 Cr. Grades 10-11-12**

*Course Code: 2522C*

RECOMMENDED PREPARATION: Successful completion of both semesters of Algebra I.

COURSE DESCRIPTION: This course will expand on the topics of Algebra I and provide further development of the concept of a function. Through the emphasis on technology, especially a graphing calculator, student will apply the topics learned. The expanded topics include the theorems and algorithms of algebra; polynomials, and polynomial functions; rational exponents; complex numbers, sequences and series; properties of conic sections; permutations and combinations; matrices; and exponential and logarithmic functions. **CORE 40 & AHD course**

### **PRE-CALCULUS** **2 Sem. 2 Cr. Grades 11-12**

*Course code: 2552C*

Prerequisites: Completion of Algebra II and Geometry.

COURSE DESCRIPTION: This course will blend together all of the concepts and skills that must be mastered prior to enrollment in a college-level calculus course. A functional approach will provide for the integration of the following topics: development of the trigonometric relationships from an understanding of the circular functions and their properties and their graphs; inverse trig functions; trig equations and identities; vectors; Law of Sines and the Law

of Cosines; applications of the trig functions; polar coordinates; relationships of equations and graphs of linear, quadratic, and parametric equations; translations of axes; locus and vectors; theory of equations; exponential and logarithmic functions; matrices; and determinants. Note: A graphing calculator is recommended for this course. **CORE 40 & AHD course**

### **UNITED STATES HISTORY**

**2 Sem. 2 Cr. Grade 11**

*Course Code: 1542C*

RECOMMENDED PREPARATION: None

COURSE DESCRIPTION: United States History 1-2 is a chronological survey of American history from the era of the Bill of rights to the present period. The course blends the major political, economic, diplomatic, and social developments of our history into a "How does it affect me today?" approach.

**CORE 40 & AHD course**

### **UNITED STATES GOVERNMENT**

**1 Sem. 1 Cr. Grade 12**

*Course Code: Fall 1539C Spring 1540C*

RECOMMENDED PREPARATION: None

COURSE DESCRIPTION: United States government is a survey course of national states, and local governments. Relationships between governments and branches, and the struggle for power between and within governments will be stressed. The course will begin with the Bill of Rights and its effects on us, and end with the analysis of Civil Rights.

**CORE 40 & AHD course**

### **GEOGRAPHY & HISTORY OF THE WORLD**

**2 Sem. 2 Cr. Grades 9-10**

*Course Code: 1528C*

Prerequisites: None

COURSE DESCRIPTION: Students develop and use the six elements of geography to better understand current events and issues facing the world today. These elements are: The world in Spatial Terms, Place and Regions, Physical Systems, Human Systems, Environment, and Society, and Uses of Geography. Students will demonstrate an understanding of these elements of geography in context of world history, primarily from 1450 to the present.

### **ECONOMICS**

**1 Sem. 1 Cr. Grade 12**

*Fall 1513C*

*Spring 1514C*

RECOMMENDED PREPARATION: None

COURSE DESCRIPTION: The course of study provides a survey of economic principles and issues providing both a theoretical and practical approach to economics. The Stock Market game will take place throughout the semester. Additional programs will provide an interactive approach to learning about how money works.

### **PHYSICS OF TECHNOLOGY IP**

**2 Sem. 2 Cr. Grades 10-11-12**

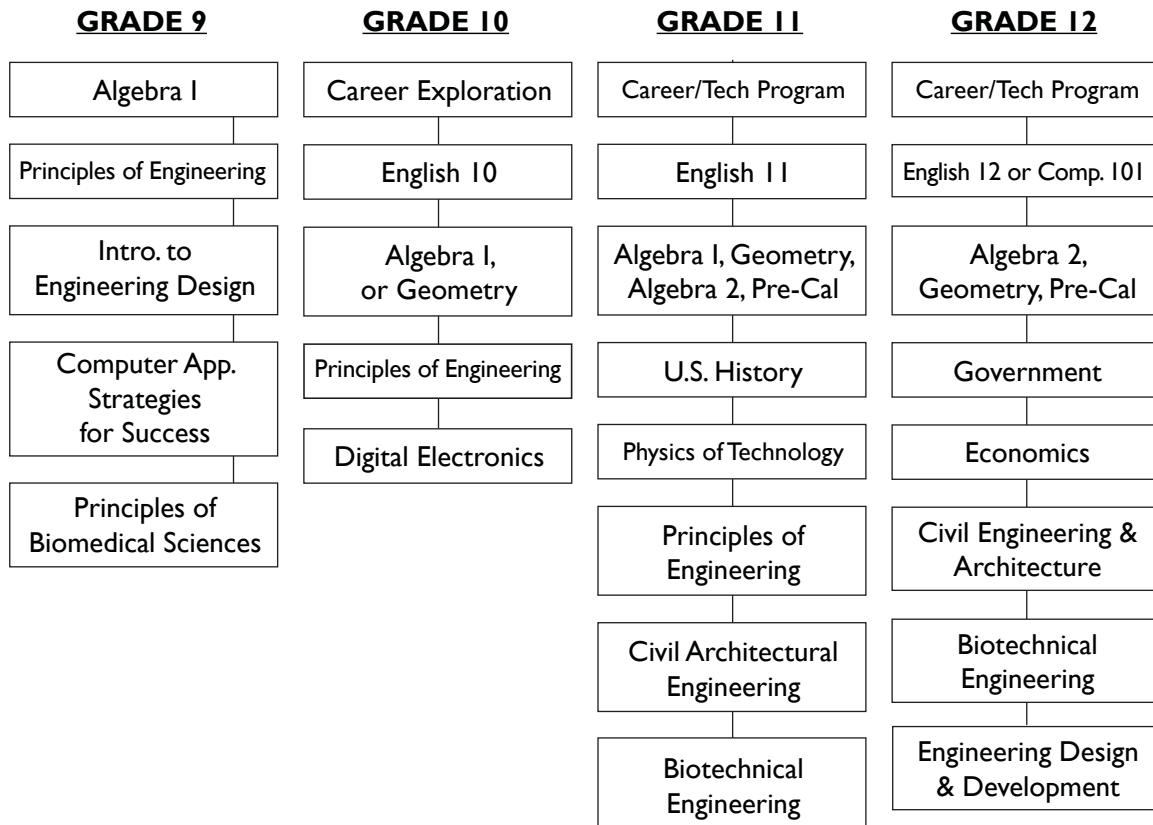
*Course Code: 3088C*

RECOMMENDED PREPARATION: Successful completion of algebra 1-2

COURSE DESCRIPTION: Physics of Technology is a course that investigates mechanical, thermal, electrical, hydraulic, and fluid concepts that are frequently found in technical systems. Frequent hands-on activities and applications are stressed with the automobile frequently used as an example. A passing grade must be earned in Physics of Technology I in order to proceed to the second semester of Physics of Technology. **CORE 40 & AHD course**

*High Schools That Work (Tech Prep) is a rigorous, focused program of study designed to prepare students for the demands of an additional two years of post-secondary education or entrance into the workforce. Students are provided with essential academic and technical foundations, along with problem-solving, group process, and lifelong learning skills.*

# CAREER PATHWAYS



## CAREER/TECHNICAL PROGRAMS INCLUDE:

- A+ Computer Services
- Auto Service Technology
- Biotechnical Engineering
- Business Coop
- Business Technology Lab
- Building Trades
- Civil Engineering & Architecture
- Collision Repair
- Computer Applications/ Strategies
- Intro. to Cosmetology
- Cosmetology
- Digital Electronics
- Digital Media
- Early Childhood Education
- Financial Services Marketing
- Food Industry
- Health Careers
- Introduction to Engineering Design
- Marketing
- Network + / Cabling
- Principles of Engineering
- Welding
- Oracle

# FOUR-YEAR PLAN SHEET

This four-year plan sheet is included as a blueprint for your high school success. Freshmen should complete this as a preliminary draft for their four-year planner which they will complete during their scheduling appointment. We encourage you to enlist the aid of your parents in selecting courses which will meet your educational career plans. The plan sheet can be re-worked or changed at any time, but it will provide an overall view of your academic goals.

## 9TH GRADE

### FALL

1. English 9
2. Math
3. Science
4. Geog/History of the World
5. \_\_\_\_\_
6. \_\_\_\_\_
7. Health/P.E.

### SPRING

1. English 9
2. Math
3. Science
4. Geog/History of the World
5. \_\_\_\_\_
6. \_\_\_\_\_
7. Health/P.E.

## 10TH GRADE

### FALL

1. English 10 or Speech
2. Math
3. Science
4. \_\_\_\_\_
5. \_\_\_\_\_
6. \_\_\_\_\_
7. P.E./Technology

### SPRING

1. English 10 or Speech
2. Math
3. Science
4. \_\_\_\_\_
5. \_\_\_\_\_
6. \_\_\_\_\_
7. P.E./Technology

## 11TH GRADE

### FALL

1. English 11
2. U.S. History
3. Math
4. Science
5. \_\_\_\_\_
6. \_\_\_\_\_
7. \_\_\_\_\_

### SPRING

1. English 11
2. U.S. History
3. Math
4. Science
5. \_\_\_\_\_
6. \_\_\_\_\_
7. \_\_\_\_\_

## 12TH GRADE

### FALL

1. Economics or Gov.
2. English
3. (Math)
4. \_\_\_\_\_
5. \_\_\_\_\_
6. \_\_\_\_\_
7. \_\_\_\_\_

### SPRING

1. Gov. or Economics
2. English
3. (Math)
4. \_\_\_\_\_
5. \_\_\_\_\_
6. \_\_\_\_\_
7. \_\_\_\_\_