

## AGRICULTURAL EDUCATION DEPARTMENT

### **AFNR (Ag, Food & Natural Resources) (0104, 0104b) Elective**

Length: 2 terms 2 credits

Grades: 9<sup>th</sup>-12<sup>th</sup>

Introduction to Agriculture introduces students to the range of agricultural opportunities and the pathways of study they may pursue. The pathways of study addressed in the course include, but are not limited to, animal systems, plant systems, natural resources, food processing and products, and agricultural mechanics. Students participating in the course will experience hands-on activities, projects, and problems in an agriculture related pathway. An additional area of study includes FFA (the agricultural leadership organization) and communication skills. Students will have the opportunity to participate in FFA activities as well as Supervised Agricultural Experiences (work-based learning) while in this course.

### **Plant Science (0105, 0105b) Elective**

Length: 2 terms 2 credits

Grades: 10<sup>th</sup>-12<sup>th</sup>

Prerequisite: AFNR

Plant Science is a foundation-level course teaching students the importance of plant systems. Student experiences include the study of plant anatomy and physiology, classification, and the fundamentals of plant production and harvesting. Students learn how to apply scientific knowledge and skills to use plants effectively for agricultural and horticultural production, and experience various plant science concepts through laboratory and practical experience. Activities include, growing hydroponic vegetables, dissecting flowers, plant propagation, etc.

### **Ag 3 (Intro to Ag Business) (0107, 0107b) Elective**

Length: 2 terms 2 credits

Grades: 11<sup>th</sup>-12<sup>th</sup>

Agricultural Business introduces students to business management in agriculture. Throughout the course are practical and engaging activities, projects, and problems to develop and improve business and employability skills. Additionally, students investigate and develop viable business plans in order to solve local problems. Topics of study include recordkeeping, analyzing consumer needs/wants, the supply chain of food and other agricultural resources/products, managing the finances and successes of a business, and agriculture sales and marketing.

### **Animal Science (0108, 0108b) Elective**

Length: 2 terms 2 credits

Grades: 9<sup>th</sup>-12<sup>th</sup>

Prerequisite: AFNR

Animal Science is the biological science and management of domestic livestock, including beef cattle, horses, sheep, swine and companion animals. This course is designed to prepare students for careers related to the care and handling of production animals including, but not limited to, chickens, pigs, cattle, and sheep/goats. Topics of study include, animal genetics and

reproduction, housing and equipment, groups and breeds, anatomy and physiology, animal behavior, feeding and nutrition, care and management, and career opportunities.

## ART DEPARTMENT

### **Art I (1161, 1161b)** Elective

Length: 2 terms 2 credits

Grade: 9<sup>th</sup>

Art 1: This is a freshman course designed for students to explore a wide range of art media. The elements and principles of art are applied to basic drawing, beginning painting, ceramics and sculpture, graphic design, digital art, printmaking, and multicultural handcrafts. Art history and art critique are also studied in conjunction with various assignments.

### **Art 2 (1161c, 1161d)** Elective

Length: 2 terms 2 credits

Grade: 10<sup>th</sup>

Prerequisite: Art I

Art 2: In this class students build on information and skills covered in Art 1, with a greater emphasis placed on studio work. Students investigate and work with a variety of art and design projects and study basic art history and art critique. This class is two terms and has a prerequisite of Art 1.

### **Art 3 (1161e, 1161f)** Elective

Length: 2 terms - 2 credits

Grades: 11<sup>th</sup>-12<sup>th</sup>

Prerequisite: Art 1 and Art 2

Art 3: In this class students build on information and skills covered in Art 1 and Art 2. Assignments become more open-ended as students work to refine their abilities in various drawing, painting, ceramics, printmaking, digital and design media and art history. This class is two terms and has a prerequisite of Art 1 and Art 2.

### **Art 4 (1161g, 1161h)** Elective

Length: 2 terms 2 credits

Grades: 11<sup>th</sup>-12<sup>th</sup>

Prerequisite: Art 1, Art 2, Art 3

Art 4: In this class students build on information and skills covered in Art 1, 2 and 3. Personal student vision is expected as students continue to refine and enhance their abilities in drawing, painting, ceramics, printmaking, digital and design media and art history. This class is two terms and has a prerequisite of Art 1, Art 2 and Art 3.

**Art Portfolio 1 (1181, 1181b)** Elective

Length: 1 term 1 credit (may be taken twice) Grade: 12<sup>th</sup>

Prerequisites: Art 1, Art 2, Art 3, Art 4

Art Portfolio: This class is designed for advanced students to continue to develop their self-expressive and technical skills. Due to the individualized nature of this class, students must be self-motivated and willing to work independently. Prerequisites for this class include Art 1, Art 2, Art 3 and Art 4.

**Art Portfolio 2 (1191a, 1191b)** Elective with permission of instructor

Length: 1 term 1 credit

Grade: 12<sup>th</sup>

Prerequisites: Art 1-4 and Art Portfolio

Art Portfolio 2: This class is a continuation of the artistic development process started in Art Portfolio. As stated before, students must be self-motivated and willing to work independently.

Prerequisites include Art 1-4 and Art Portfolio

**BUSINESS DEPARTMENT**

**General Business/Careers (0221)** Elective

Length: 1 term 1 credit

Grade: 9<sup>th</sup>-12<sup>th</sup>

This is a comprehensive program for introduction to business courses at the high school level. The goal is to describe for students how the American business economy operates and to help them prepare to make decisions as consumers, wage earners, and citizens within that economy. This course combines explanations of business and economic vocabulary and concepts with practical application to the real world of the American business economy, as well as those around the world. Emphasis is placed on technology- aided research and interpreting statistics.

**Business Management /Entrepreneurship (0223)** Elective

Length: 1 term 1 credit

Grade: 9<sup>th</sup>-12<sup>th</sup>

This class will be a follow-up to the General Business class. Students will have an opportunity to study international business and the challenges of competing in a global economy. Students will be acquainted with skills necessary to own and operate their own business. Students will learn about economics, marketing principles, business, financial planning, finance, accounting, and communication. Students will also gain insight into the relationship between industry, government, and the global economy. A business plan project will also be completed throughout the semester.

**Accounting I (0207, 0207b)** Elective

Length: 2 terms 2 credits

Grade: 11<sup>th</sup>

After completing the accounting cycle for a proprietorship in chapters 1-7 the students will be

able to complete a similar accounting cycle using automated accounting. The same automated accounting procedure will be used after chapters 10, 13, 15 and 18, so the students will have a thorough working knowledge of accounting using the computer. With the use of computers, accounting will take on a more exciting and useful approach for the students. This class is part of an articulation agreement with several colleges which include DMACC, Iowa Central College, Ellsworth Community College, AIB, Iowa Western, North Iowa Central Community College and Iowa Lakes Community College. This agreement means that the student can take this course in high school for college credit from the above colleges upon certification that you completed the course and met their minimum competencies for the course. This is a great way to get college credits while still in high school.

### **Business Communications (2763, 2763b) Elective**

Length: 2 terms 2 credits

Grade: 11<sup>th</sup>-12<sup>th</sup>

To meet the minimum requirements for a successful completion of this course, the student will have a working knowledge of the legal terminology that is introduced in this course. The student will know the elements of a contract and the effect of the following on contracts: fraud, duress, undue influence, forbearance, damages and bankruptcy. The students will know the different legal bearings between bailments and contracts. The students will know their rights and duties as the following: a buyer, a seller, an employee, an employer, an operator of a motor vehicle, as a landlord, and as a tenant. The student will know the requisites of valid wills and the legal bearing of: a tester, an executor, an administrator, and a probate court. The student will recognize situations that are beyond his realm of completion and in which professional legal assistance is needed.

### **21st Century Skills (0224) Required**

Length: 1 term 1 credit

Grade: 12<sup>th</sup>

Students will learn about personal finances and using financial planning for their lifetime experiences. Topics covered include - Budgeting, Goals, Career Planning, Decision- Making, Banking (Checking/Savings accounts/Loans), Credit, Insurance, Taxes, Investing, Buying/Leasing A Vehicle, Buying A Home, Renting A House or Apartment, Being An Informed Consumer, and Identity Fraud.

## **ENGLISH DEPARTMENT**

### **English 1 (1001, 1001b) Required**

Length: 2 terms 2 credits

Grade: 9<sup>th</sup>

English/Language Arts 1 is a required course for 9th Grade students. This course focuses on a variety of core skills surrounding reading, writing, speaking/listening, and language use. Skills that are assessed are: personal narrative writing, analyzing literary fiction (Shakespeare), analyzing non-fiction texts, informative writing and speaking, socratic questioning, persuasive writing and researching. In addition to this, students will complete a current event study as well as a short story study.

**English 2 (1002, 1002b) Required**

Length: 2 terms 2 credits

Grade: 10<sup>th</sup>

English/Language Arts 2 is a required course for 10th Grade students. This course focuses on a variety of core skills. This course focuses on a variety of core skills surrounding reading, writing, speaking/listening, and language use. Skills that are assessed are: analyzing literary fiction (Greek Mythology), analyzing arguments and rhetorical devices, competing in a classroom debate, participating in discussions over a literary text (Night) , and writing informatively. Students will also complete a poetry analysis/portfolio and a visual media presentation.

**English 3 (1003,1003b) Required**

Length: 2 terms 2 credits

Grade 11<sup>th</sup>

English/Language Arts 3 is a required course for 11th Grade students. This course focuses on a variety of core skills. This course focuses on a variety of core skills surrounding reading, writing, speaking/listening, and language use. Skills that are assessed are: analyzing literary fiction in a variety of mediums (Shakespeare), analyzing US Seminal/Historical documents, writing an argumentative essay, speaking to persuade, speaking to inform, speaking to entertain, and informative writing. Students will also complete a nonfiction study as well as a “Real World” study which will include resume writing, cover-letter writing, and interviewing.

**English 4 (1004,1004b) Elective**

Length: 2 terms 2 credits

Grade: 12<sup>th</sup>

English/Language Arts 4 is an elective course. This course focuses on a variety of core skills. This course focuses on a variety of core skills surrounding reading, writing, speaking/listening, and language use. Skills that are assessed are: analyzing literary fiction (poetry), writing persuasively and presenting on it, collaborating in a range of discussions (literature circles), researching, and analyzing nonfiction. Students will also complete a business plan and presentation as well as a creative writing unit and a final presentation over a topic of choice.

**Composition 1 (1101) Elective**

Length: 1 term 1 credit

Grade: 10<sup>th</sup>-12<sup>th</sup>

Composition 1 is an elective course that provides students with writing foundations that prepare them for the demands of academic and professional writing. In this course, students will learn and practice the strategies and processes that successful writers employ as they work to accomplish specific purposes. In college, these purposes include comprehension, instruction, entertainment, persuasion, investigation, problem-resolution, evaluation, explanation, and refutation. In addition to preparing students for academic communication, this core-curriculum course prepares students to use writing to realize professional and personal goals. Accordingly, class discussion and readings will address the function of rhetoric and of composing processes in a variety of contexts, with attention to various audiences. Students will complete the following

tasks: narrative (flash fiction), editing text of choice, persuasive essay and opinion editorial, short story analysis, and a final portfolio.

### **Composition 2 (1102) Elective**

Length: 1 term 1 credit

Grade: 10<sup>th</sup>-12<sup>th</sup>

Composition 2 is an elective course. This course is a “writing workshop”. There will be a strong emphasis on writing structured and well-supported essays, along with students being immersed in a wide variety of writing genres. They will be expected to create works of their own, and to analyze, respond to, and edit the work of others. Both formal and informal writing will occur, and students will be exposed to a number of pre-writing and post-writing strategies. Students will complete the following tasks: informative research project, poetry analysis/writing, real-world problem solving, literary analysis, personal interview/profile writing, rhetorical analysis, and a final portfolio.

### **American Literature (1054) Elective**

Length: 1 term (1 credit)

Grade: 10<sup>th</sup>-12<sup>th</sup>

American Literature is an elective course. This course is a survey of American literature and literary history, from the early pre-colonial period to present day. Our goal will be to acquire a grasp of the canon of American literature as it is typically conceived and the various logics behind its construction. This course will involve analyzing a variety of literary pieces through class discussions as well as individual and group writing exercises.

### **British Literature (1056) Elective**

Length: 1 Term (1 credit)

Grade: 10<sup>th</sup>-12<sup>th</sup>

British Literature is an elective course. This course is a survey of British literature, from the early years to present day. Our goal will be to acquire a grasp of the canon of British literature as it is typically conceived and the various logics behind its construction. This course will involve analyzing a variety of literary pieces through class discussions as well as individual and group writing exercises. The course is designed around six thematic units. Each unit will consist of a variety of reading and writing activities and will result in a final examination.

## **FAMILY AND CONSUMER SCIENCE DEPARTMENT**

### **Foods I (22202-1 ) Elective**

Length: 1 term 1 credit

Grade: 9<sup>th</sup>-12<sup>th</sup>

Foods I is a hands-on course designed to build your cooking skills. The course is designed to provide the student with the opportunity to take food principles and techniques and apply them in a hands-on environment. This course provides a level foundation of knowledge and skills, regardless of previous experience already gained. Students will participate in the daily selection, planning and preparation of a variety of recipes and cooking labs.

**Foods II (22202-2 ) Elective**

Length: 1 term 1 credit

Grade: 9<sup>th</sup>-12<sup>th</sup>

Foods II is a hands-on course designed to build your cooking skills. The course is designed to provide the student with the opportunity to take food principles and techniques and apply them in a hands-on environment. This course provides a level foundation of knowledge and skills, regardless of previous experience already gained. Students will participate in the daily selection, planning and preparation of a variety of recipes and cooking labs.

**Foods III (22202-3) Elective**

Length: 1 term 1 credit

Grade: 9<sup>th</sup>-12<sup>th</sup>

Foods III is a hands-on course designed to introduce the student to international cuisine, regional cooking, advanced food preparation techniques, and careers available in the food industry. Students will participate in the daily selection, planning and preparation of a variety of recipes and cooking labs. Emphasis will be placed on etiquette and current topics in the food industry.

**Foods IV (22202-4) Elective**

Length: 1 term 1 credit

Grade: 9<sup>th</sup>-12<sup>th</sup>

Foods IV is a hands-on course designed to develop skills in food preparation techniques, meal planning, food presentation and consumer skills. Students will participate in the daily selection, planning and preparation of a variety of recipes and cooking labs. Students will become skilled in recipe reading, managing time and resources in food preparation, and making informed food choices.

**Adult Living Skills (22206) Elective**

Length: 1 term 1 credit

Grade: 11<sup>th</sup>-12<sup>th</sup>

Adult Living Skills is designed to help prepare students for living on their own after high school. Students develop decision-making skills as they relate to food selection and preparation, clothing selection and care, housing alternatives, and personal financial planning. The intent is to help students understand both the immediate and long-range consequences of the decisions they will be making.

**Child Growth and Development (22204) Elective**

Length: 1 term 1 credit

Grade: 9<sup>th</sup>-12<sup>th</sup>

Child Growth and Development is the study of human development from conception through adolescence. Students identify social, physical, intellectual, and emotional developmental milestones for each age level while focusing on the responsibilities of parents, families, and caregivers to nurture the development of children.

### **Computer Science A (19155) Elective**

Length: 1 term 1 credit

Grade: 9<sup>th</sup>-12<sup>th</sup>

CS Principles 1 introduces high school students to the foundations of modern computing. The course covers a broad range of foundational topics such as programming, algorithms, the Internet, big data, digital privacy and security, and the societal impacts of computing. Students learn how the multi-layered systems of the Internet function as they collaboratively solve problems and puzzles about encoding and transmitting data, both 'unplugged' and using an Internet Simulator. Students learn how complex information like text and images is stored in a computer and the way compression helps reduce the size of those files. In this unit, students learn the JavaScript language with turtle programming in an App Lab. Students are introduced the general principles of algorithms and program design that are applicable to any programming language.

It seeks to provide students with a “future proof” foundation in computing principles so that they are adequately prepared with both the knowledge and skills to live and meaningfully participate in our increasingly digital society, economy, and culture.

### **Computer Science B (19155b) Elective**

Length: 1 term 1 credit

Grade: 9<sup>th</sup>-12<sup>th</sup>

CS Principles 1 introduces high school students to the foundations of modern computing. The course covers a broad range of foundational topics such as programming, algorithms, the Internet, big data, digital privacy and security, and the societal impacts of computing. Students research current events around the complex questions related to public policy, law, ethics, and societal impact. Students are also introduced to the basics of how and why modern encryption works. Students continue learning how to program in the JavaScript language. Using an App Lab environment, students create a series of applications that live on the web. Each app highlights a core concept of programming.

It seeks to provide students with a “future proof” foundation in computing principles so that they are adequately prepared with both the knowledge and skills to live and meaningfully participate in our increasingly digital society, economy, and culture.

## **FOREIGN LANGUAGE DEPARTMENT**

### **Spanish I (1201, 1201b) Elective**

Length: 2 terms 2 credits

Grades: 9<sup>th</sup>-12<sup>th</sup>

This class is designed to acquaint students with the basics of the Spanish language. Students will learn to speak, as well as comprehend, read, and write the language. Students will build a basic working vocabulary that will include such items as greetings, conversational openings, telling time and idiomatic expressions, commonly used in everyday life. Students will learn how to conjugate and use regular, irregular and stem changing verbs in the present tense and the present progressive tense. Formation of Spanish sentences and questions will be studied. Also



included in Spanish I will be songs, games, skits and short reading selections related to culture and life in Spanish speaking countries. By the end of Spanish I, students will have a basic beginning knowledge of Spanish.

**Spanish II (1201-2, 1201-2b) Elective**

Length: 2 terms 2 credits

Grades: 10<sup>th</sup>-12<sup>th</sup>

Prerequisite: Spanish I

This class is designed to further develop the student's knowledge of the Spanish language. Students will enrich their Spanish vocabulary and use of idiomatic expressions. They will become more proficient in reading and writing the language. Students will learn to conjugate and use regular, irregular and stem changing verbs in the present progressive and preterit verb tenses. Direct and indirect object pronouns will be studied. Also included in Spanish II will be songs, games, skits and reading selections related to Spanish speaking countries.

**Spanish III (1201-3, 1201-3b) Elective**

Length: 2 terms 2 credits

Grades: 11<sup>th</sup>-12<sup>th</sup>

Prerequisite: Spanish I & II

This class is designed to more fully develop the student's knowledge of the Spanish language. Students will review and enrich their Spanish vocabulary and use of idiomatic expressions. They will become more proficient in speaking and writing the Spanish language. Students will learn to conjugate and use regular, irregular and stem changing verbs in the imperfect, future, conditional, and present perfect verb tenses. Formal and informal commands will be learned. Also included in Spanish 3 will be Spanish gestures and Spanish signs, reading and writing personal letters in Spanish, music, art, as well as other cultural units related to the Spanish speaking world.

**Spanish IV (1201-4, 1201-4b) Elective**

Length: 2 terms 2 credits

Grades: 12<sup>th</sup>

Prerequisite: Spanish I, II and III

This class is designed to further enhance the student's knowledge of the Spanish language. Students will review and enrich their Spanish vocabulary and use of idiomatic expressions. The students will learn the future, conditional, and subjunctive verb tenses, as well as review all other tenses previously taught. They will also become even more proficient in reading, understanding, and discussing current magazine and news topics of the Hispanic world. A brief grammar review and some special language techniques will be studied, enabling students to express themselves more freely in conversation and in writing.

## INDUSTRIAL ARTS DEPARTMENT

### **General Industrial Arts (1611, 1611c) Elective**

Length: 2 terms 2 credits

Grades: 9<sup>th</sup>-10<sup>th</sup>

The course will cover beginning woodworking techniques. The areas of study include safety, tool and machine operation, designing, and background of the woodworking industry. The minimum requirements are: complete all classroom work, build a small woods project, and create a set of directions for that project.

### **Woodworking (0417, 0417b) Elective**

Length: 2 terms 2 credits

Grades: 10<sup>th</sup>-11<sup>th</sup>

Prerequisite: General Industrial Arts

Woodworking is a continuation of General Industrial Arts with more emphasis on the use of power tools, planning of larger projects, and problem-solving activities related to the world of work. Students are expected to be self-directed through their planning process and as they complete their projects. The minimum requirements are: draw and plan a project that meets requirements of the class while being self-directed.

### **Advanced Woodworking (0417c, 0417d) Elective**

Length: 2 terms 2 credits

Grades: 11<sup>th</sup>-12<sup>th</sup>

Prerequisite: General Industrial Arts & Woodworking.

Same as woodworking but create a more complex project, self-directed.

### **CAD (Computer Aided Drafting) (0413, 0413b) Elective**

Length: 2 terms 2 credits

Grades: 9<sup>th</sup>-12<sup>th</sup>

CAD Design and software courses introduce students to the computer-aided drafting systems available in the industry. Students will explore 2 and 3-dimensional drawing. The minimum requirements are projects include 3-dimensional drawing of houses, drawings of wood working projects and other 2-dimensional projects drawing projects.

### **Metals I (0418, 0418b) Elective**

Length: 2 terms 2 credits

Grades: 10<sup>th</sup>-12<sup>th</sup>

This class deals with introduction to metallurgy and metal working. We begin with the history of welding, welding and cutting processes, and metal working safety. After the small portion of in classroom learning, we do a large portion of laboratory in the shop.

**Ag Metals (0418c, 0418d) Elective**

Length: 2 terms 2 credits

Grade: 10<sup>th</sup>-12<sup>th</sup> Prerequisite: Metals I

This class is a continuation of Metals I. This class works more on advanced welding and cutting techniques and more student projects.

**Small Gas Engines (0419, 0419b) Elective**

Length: 2 terms 2 credits

Grades: 9<sup>th</sup>-12<sup>th</sup>

This class goes over the function and operation of 2 and 4 cycle engines. There are many labs that involve tearing an engine apart and putting it back together and fixing a project from home.

**Small Engines II/Agricultural Mechanics (0419c, 0419d) Elective**

Length: 2 terms 2 credits

Grades: 10<sup>th</sup>-12<sup>th</sup>

Prerequisite: Small Engines helpful

This class goes over engine operation, electricity, hydraulics, and building Ag structures. This is the class who is in charge of rebuilding an antique tractor.

**General Construction (0420, 0421) Elective**

Length: 2 terms 2 credits

Grades: 11<sup>th</sup>-12<sup>th</sup>

Prerequisites: Gen Industrial Arts & Woodworking

The course provides practical experience in many areas of construction, including framing, drywall, basic electrical and blueprint reading. Classroom activities focus on current building practices, safety, building terminology, estimating materials, use of construction tools, and related mathematics. Labs will include basic use and care of tools, safety, framing, roofing, basic residential wiring, and many more.

**MATHEMATICS DEPARTMENT**

**Algebra 1 (2031, 2031b) Required**

Length: 2 terms 2 credits

Grade: 9<sup>th</sup>

Algebra 1 advances understanding of numbers, functions, and problem solving. Students in Algebra 1 will solve one-variable equations and inequalities and two-variable equations with a significant proportion of the class devoted to linear functions and problems that can be modeled with linear functions. Students will advance their ability to represent mathematical relationships with equations, graphs, tables, charts, and words. Students will learn to write basic algebraic statement-reason proofs. Special attention will be devoted to algebraic thinking, especially substitution as a strategy for problem solving. Students will advance their ability to deconstruct mathematical expressions by factoring. Advanced students may be introduced to quadratic functions.

**Geometry (2034, 2034b)** Required

Length: 2 terms 2 credits

Grades: 10<sup>th</sup>-11<sup>th</sup>

Prerequisites: Algebra I

Geometry advances understanding of mathematics as an axiomatic system in which proofs are developed logically and systematically from a small number of simple presumptions (axioms). Geometry also advances understanding of numbers, functions, and problem solving with a focus on problems that are geometric in nature or that can be modeled by geometric objects. Students will be introduced to geometric theorems and guided through the reading, completion, construction, and editing of geometric statement-reason proofs. Most geometric proofs will require algebra and substitution. Advanced students may be introduced to trigonometry.

**Algebra 2 (2041, 2041b)** Required for admittance into secondary school

Length: 2 terms 2 credits

Grades: 10<sup>th</sup>-11<sup>th</sup>

Prerequisites: Algebra I

Algebra 2 advances understanding of numbers, functions, proofs, and problem solving. Students will develop understanding and facility with quadratic functions, absolute value functions, rational functions, and basic exponential functions. Students will solve linear systems, including two-variable inequalities as constraints. Students will learn to transform parent functions systematically and learn to interpret functions as transformations of parent functions. Students will be introduced to imaginary numbers and complex numbers. Students will write algebraic proofs and geometric proofs requiring algebra. Students will advance their understanding of geometry and probability. Students will represent problems graphically, algebraically, and in words. Advanced students may be introduced to logarithms and/or trigonometry.

**Pre-Calculus (2053, 2053b)** Elective

Length: 2 terms 2 credits

Grades: 11<sup>th</sup>-12<sup>th</sup>

Prerequisites: Geometry and Algebra II

Pre-Calculus advances understanding of functions, proofs, and problem solving and introduces students to concepts that are fundamental to learning Calculus, especially the concept of a limit. Students will develop understanding and facility with exponential and logarithmic functions, inverse functions, and trigonometric functions. Students will construct proofs requiring algebra (including exponential and logarithmic functions), geometry, and trigonometry. Advanced students may be introduced to conic sections, and/or matrices.

**Calculus (2054, 2054b)** Elective

Length: 2 terms 2 credits

Grades: 12<sup>th</sup>

Prerequisite: Pre-Calculus

Calculus advances understanding of functions, proofs, and problem solving. Students will learn to answer three basic questions: (1) What is the limit?, (2) What is the rate of change at a certain moment?, and (3) How much has accumulated? The first question is used to answer the other

two questions. In previous classes, students were asked about rate of change for linear functions and about average rates of change for any function. Derivative Calculus allows problem solvers to answer the second question by constructing and applying derivative functions. In previous classes, students were asked to find areas of shapes that could be composed of simple shapes like triangles, rectangles, and parts of circles. Integral Calculus allows problem solvers to answer the third question by constructing and applying integral functions. Students will use these integral functions to prove formulas related to geometric objects such as circles, cones, pyramids, and spheres and of more complex solids such as rotational solids like toroids or solids produced by other functions. Students will learn to solve problems that require applications of derivative and integral calculus. Students will learn to analyze the curvature of functions using derivative calculus and so solve problems that can be modeled with functions. For example, such problems include business applications like maximizing profits or minimizing costs.

### **Financial Math (2055, 2055b) Elective**

Length: 2 term 2 credits

Grades: 11<sup>th</sup>-12<sup>th</sup>

Connecting practical mathematical concepts to personal and business settings, this course offers informative and highly useful lessons that challenge students to gain a deeper understanding of financial math. Relevant, project-based learning activities cover stimulating topics such as personal financial planning, budgeting and wise spending, banking, paying taxes, the importance of insurance, long-term investing, buying a house, consumer loans, economic principles, traveling abroad, starting a business, and analyzing business data. This course meets for two terms, this course encourages mastery of math skill sets, including percentages, proportions, data analysis, linear systems, and exponential functions.

## **MUSIC DEPARTMENT**

### **High School Chorus (1130, 1130b, 1130c, 1130d) Elective**

Length: 4 terms 2 credits

Grades: 9<sup>th</sup>-12<sup>th</sup>

Prerequisite: Jr. High Chorus

This course may be repeated for credit until 8 credits have been earned.

Members of the High School Chorus learn a variety of music ranging from popular to classical.

They learn teamwork skills and theoretical concepts that help them improve their performance.

They perform concerts and other events that occur outside the school day. Most Senior

members and some underclassmen earn the chance to travel as a part of the course. The course is graded and the grade counts toward the students' GPA.

### **Band (1121, 1121b, 1121c, 1121d) Elective**

Length: 4 terms 2 credits

Grades: 9<sup>th</sup>-12<sup>th</sup> Prerequisite: Jr. High Band

This course may be repeated for credit until 8 credits have been earned. Members of the High School Band learn a variety of music ranging from popular to classical. They learn teamwork skills and theoretical concepts that help them improve their performance. They perform concerts and

other events that occur outside the school day. Most Senior members and some underclassmen earn the chance to travel as a part of the course. The course is graded and the grade counts toward the students' GPA. Students will be required to rent or own an instrument and to purchase some materials.

## PHYSICAL EDUCATION/ HEALTH

### **Physical Education (2302) Required**

Length: 1 term 1 credit

Grades: 9<sup>th</sup>-12<sup>th</sup>

Physical Education class will include physical fitness activities that increase cardiovascular endurance, muscular strength and flexibility. The activities will include leisure and lifetime activities. Activities covered will be volleyball, scooter games, basketball, softball, slow pitch, whiffleball, flag football, golf, tennis, badminton, pickleball, table tennis, shuffleboard, cross country skiing, trust games, soccer, obstacle courses and repelling. If a student misses physical education, that student has to make up the time missed by writing an acceptable report. This report will be written on whatever the class was participating in at the time or an acceptable topic agreed upon by the instructor and student. If a student has over two unexcused absences a quarter, that student will fail that quarter.

### **Health (1401, 1401b) Elective**

Length: 2 terms 2 credits

Grades: 11<sup>th</sup>-12<sup>th</sup>

The main focus of this course deals with the student's ability to make responsible decisions in regards to their health. Areas covered in health include the following state- required areas: (a) self-esteem, responsible decision-making, personal goal setting; (b) interpersonal relationships; (c) premarital sexual relationships; (d) family life and parenting skills; (e) human sexuality, reproduction, contraception and family planning, prenatal development including awareness of mental retardation and its prevention, child birth, adoption, available prenatal and postnatal support and male and female responsibility; (f) sex stereotypes; (g) behaviors to prevent sexual abuse and sexual harassment; (h) sexually transmitted diseases, including AIDS and their causes and prevention; (i) substance abuse, treatment and prevention; (j) suicide prevention; (k) stress management; (l) first aid and CPR. A student shall not be required to take certain units within the health course if the pupil's parent or guardian files with the principal a written request that the pupil be excused from the instruction for religious or other reasons.

## SCIENCE DEPARTMENT

### **Physical Science (1703, 1703b) Required**

Length: 2 terms 2 credits

Grade: 9<sup>th</sup>

Physical Science is designed to serve as a foundation for the understanding of energy and motion. The student will learn and apply Newton's 3 laws of motion, forces, work and power,

momentum, conservation and conversions of energy, relationships between electricity and magnetism, and wave phenomena and behavior especially found with electromagnetic and sound waves. The student will also have an introduction to matter by learning atomic structure, the periodic table (this includes chemical symbols, patterns, trends and isotopes), chemical bonding, and chemical reactions. Because experimentation is the basis of science, laboratory demonstrations and investigations are an integral part of this course. Instruction centers around inquiry-based learning that is incorporated into class activities.

**Biology (1711, 1711b) Required**

Length: 2 terms 2 credits

Grade: 10<sup>th</sup>

Biology includes laboratory work, study of specimens, projects, and a thorough understanding of scientific inquiry. Course content includes the relationships between living things as well as the intracellular and extracellular interactions of macromolecules to enable life. Levels of biological organization are explored as well as cellular biology. Biochemistry is interwoven. DNA is explored in depth in order to understand genetics and heredity. Survival of species through adaptation, diversification, and mutation are explored. Ecology is the final unit of study in order to understand and apply how living organisms interact with and affect each other greatly.

**Environmental Science (1751, 1751b) Elective**

Length: 2 terms 2 credits

Grades: 11<sup>th</sup>-12<sup>th</sup>

This class is built around the CASE model for Natural Resources and Ecology.

Are many labs for students to do to find out about how nature works and how human interaction affects nature. This class is very inquiry based and hands on.

**Anatomy (1713, 1713b) Elective**

Length: 2 terms 2 credits

Grade: 11<sup>th</sup>- 12<sup>th</sup>

Anatomy and Physiology explores the structural organization of the human body from the cell to tissue to the organ to organ system. The student will learn the organs of the body and be able to state the structure, location, and function of each. The student shall be able to describe relationships that exist between the various systems of the body. The students shall be able to discuss several of the diseases or defects that can affect the human body along with being familiar with the structure and function of the human body systems.

**Forensics (1717, 1717b) Elective**

Length: 2 terms 2 credits

Grade: 10<sup>th</sup>-12<sup>th</sup>

Forensic Science is the application of chemistry, physics, and biology to the criminal and civil laws that are enforced by police agencies in a criminal justice system. It includes the investigation of fingerprinting, fiber analysis, ballistics, arson, trace evidence analysis, poisons, drugs, blood spatters, and blood samples. Students are taught the proper collection, preservation, and laboratory analysis of various samples.

**Chemistry (1721, 1721b) Elective**

Length: 2 terms 2 credits

Grades: 11<sup>th</sup>-12<sup>th</sup>

Chemistry explores and applies the properties of matter in terms of molecular motion of solids, liquids or gases. Students will learn the names and describe the parts of an atom, describe the two types of chemical bonding to form compounds, and predict chemical reactions between elements by studying the periodic chart. The student shall have conquered the gas laws and be able to do the problems correctly. The student will have a working knowledge of basic organic chemistry. He/she should be able to name and properly use the laboratory equipment. He/she should have a working knowledge of the metric system and possess necessary mathematical skills for chemical operations.

**Physics (1212, 1212b) Elective**

Length: 2 terms 2 credits

Grades: 11th -12th

Students will be able to perform basic operations with scientific notation, metric units, conversion factors, vectors and graphs. Students will be familiar with force and motion problems, problems dealing with work, power and energy, and machines, the structure of matter, light, heat and electricity. Strong algebra and geometry skills recommended.

**SOCIAL STUDIES DEPARTMENT****Modern U.S. History (2724,2724b) Required**

Length: 2 Terms 2 Credits

Grade: 9th

1st Term in this course we pick up in history just after Reconstruction and move into the Industrial Revolution, the Progressive Era, and the lead up to World War I. Then we head into the Roaring 20's before focusing on the Great Depression and not only what caused it to happen, but what was done to combat it.

2nd Term in this course begins with the leadup to World War II and America's entry into the conflict. We then move into the postwar years and the beginning of the Cold War. Topics we focus on throughout the rest of the term include the Civil Rights Movement, the Vietnam War, and the Space Race. We end the class with Watergate.

**Current Issues (2751) Elective**

Length: 1 term 1 credit

Grades: 9<sup>th</sup>-12<sup>th</sup>

The special emphasis of this class will center on news of the day. Using news item from the Internet, students will be expected to lead the class in a discussion on a current news item.



**Topics in U.S. History (2725) Elective**

Length: 1 Term 1 Credit

Grade: 10<sup>th</sup>-12<sup>th</sup>

This class picks up after the Vietnam War has ended and in the aftermath of Watergate. It then moves into the 1980's focusing on technology, and the 1990's as the U.S. involvement in the Middle East increases leading up to the Gulf War while the Cold War with the Soviet Union comes to an end. We then study the effects of Globalization on the United States, the Global War on Terror that began after 9/11, and the class ends with the Financial Crisis of 2008.

**World History (2704, 2704b) Required**

Length: 2 terms 2 credits

Grade: 11<sup>th</sup>

Patterns such as development of ancient civilizations in river valleys and periods such as the Age of Exploration will be studied. How systems of power and authority and government develop and change (the origins of Feudalism and the Rise of Absolute Monarchy). Understand the role of culture and cultural diffusion on the development and maintenance of societies ie understand the origins, central ideas and global influence of world religions. How systems of trade have developed and changed from Ancient Ur to the Roman Empire to the British Empire. Understand the effects of geographic factors on historical events (ie the Fall of Constantinople). Understand the role of innovation on the development and interaction of societies (ie the Engineering the Royal Road of the Ancient Persians). Understanding cause and effect relationships (ie the French Revolution creating the conditions for the rise of Napoleon). Understand the role of individuals (ie Prince Henry the Navigator) and groups (I e East India Company) within a society as promoters of change and status quo.

**U.S. Government (2730) Required**

Length: 1 term 1 credit

Grade: 12

This course is designed to prepare the student for his future interaction in political affairs with an emphasis on preparation for his/her role as a decision-making citizen in the U.S. The course of study involves units on the foundations of American Democracy, which includes the Constitution and its historical basis, elections and voting, how to participate in government, legislative process, court systems and international affairs.

**Behavior Science and Humanities (2772) Elective**

Length: 1 term 1 credit

Grade: 11<sup>th</sup>-12<sup>th</sup>

This course of study takes a look at the workings of our society. Students are expected to lead or participate in class discussions. Upon the completion of the course, students are expected to have knowledge of culture, individual and group behavior, society as a whole and the number of problem areas of our society.

**Economics (2741) Elective**

Length: 1 term 1 credit

Grade: 11<sup>th</sup>-12<sup>th</sup>

This course of study is to give the student information on the makeup of our economy. Some of the topics to be studied are, characteristics of a "Free Market" economy, types of economic systems, supply and demand, circular flow of economic activity, fiscal and monetary policies, and international trade. This course would be recommended if you are planning on going to college and majoring in business.

**World Geography (2701) Elective**

Length: 1 term 1 credit

Grade: 9<sup>th</sup>-11<sup>th</sup>

This geography course places heavy emphasis on the Eastern Hemispheric areas of the world. Particular world areas to be included would be the "New" Europe, the Middle East, Asia, The commonwealth of Independent States and Africa. Individual projects will be offered to students with various interests during the semester. In addition, students will be doing projects with the computer.

**DMACC ACADEMIC CLASSES**

\*\* Please see Mrs. Bach to enroll in DMACC courses.