

MMCRU Royals

A Guide to Course Selection & Program Planning (9-12)

2019-2020



MMCRU High School

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MMCRU High School

Please note: This course guide is subject to change without notification. Some courses may be offered and others may not be. This will be determined on enrollment and availability.

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Graduation Information

Diplomas

Each student who attends MMCRU will follow the following diploma plan.

MMCRU Diploma: (54 credits) Required: Math 6 credits (8th grade Algebra will count for high school credit but will not count towards the six required Math credits), English 8 credits, Science 6 credits, Social Studies 6 credits, PE 4 credits, Health 2 credits, Guidance 1 credit, Workplace Readiness 1 credit, Personal Finance 1 credit

Required: 35 credits

Elective: 19 credits

Math:

Required Courses: Algebra I, Geometry

Electives: Algebra II, Pre-Calculus, Advanced Math, Calculus, Statistics, Business Math, Math in the Trades

English:

Required Courses: English 9, English 10, English 11

Electives: Composition I/II, Communications I/II, Introduction to Literature, Modern Literature, Shakespeare, Creative Writing, Society in Literature, Public Speaking

Science:

Required Courses: General Science, Biology

Electives: Chemistry, Physics, Environmental Science, Anatomy, Forensic Science

Social Studies:

Required Courses: World History, U.S. History or AP U.S. History, Government

Electives: Economics, World Geography I/II, People and History I/II, U.S. Issues I/II, World Issues I/II, Civics, World Wars

Guidance:

Required: Careers 1 credit (1/4 credit per year enrolled)

Business:

Required: Workplace Readiness 1 credit, Personal Finance 1 credit

Physical Education

Required: PE (4 credits), Health (2 credits)

Must be enrolled each semester in school (unless given an academic waiver & participate in a sport)

College Admission Requirements

Iowa State Universities
South Dakota's State Universities
University of Nebraska

	University of Iowa	Iowa State University	University of Northern Iowa	South Dakota Universities	University of Nebraska
English	4 years	4 years	4 years	4 years	4 years
Mathematics	3 years (c)	3 years (c)	3 years	3 years	4 years (d)
Laboratory Sciences	3 years	3 years	3 years	3 years	3 years
Social Studies	3 years	3 years	3 years	3 years	3 years
Foreign Language	4 years	3 years	3 years	2 years	2 years
Computer Science				1/2 year	1/2 year
Fine Arts	1 year (a)			1 year	1/2 year
Electives			2 years (b)		

- a) Not required, but recommended
- b) Could be Foreign Language or other course requirements
- c) 4 years of math for College of Engineering
- d) Must include Algebra 1, Geometry, Algebra 2, and Pre-Calculus

Besides the above requirements of high school study, each university may have other stipulations such as upper 1/2 of graduating class or a minimum ACT score. To be sure of what all requirements for admission are, you should refer to the college catalog (s) or visit with a representative from a college.

What's Your RAI Score?

If you wish to enter any of the Iowa Regent universities as a freshman, you must meet the new Regent Admission Index (RAI) requirement. If you meet the high school requirement and earn an RAI score of at least 245, you will automatically qualify for admission to any of the Iowa Regent universities. If you meet the minimum high school course requirements and you earn an RAI score below 245, you may still be considered for admission to any of the Regent universities on an individual basis. **The most effective way to increase your RAI score is to take additional core classes.**

RAI Score

(2 x ACT Composite Score)
+ (1 x Percentile H.S. Rank)
+ (20 x Cumulative GPA)
+ (5 x Number of H.S. Core Courses)

RAI Score (for all students entering summer 2020 or beyond)

(3 x ACT Composite Score)
+ (30 x Cumulative GPA)
+ (5 x Number of H.S. Core Courses)

MMCRU High School
Engineering Program of Study
Career Cluster: Engineering & Manufacturing Technology

Subject	High School				WITCC
	Freshman Year	Sophomore Year	Junior Year	Senior Year	Mechanical Engineering Technology-AAS Degree
Math	Algebra I (8 th Grade) Geometry	Algebra II	Pre-Calculus	Calculus	SDV 108 The College Experience 1 DRF 113 Fund of Tech Drafting 3 DRF 121 Fund of Tech Drafting II 3 CAD 267 Two-Dimensional (2D) I 3 CAD 269 Two-Dimensional (2D) II 3 MAT 772 Applied Math 3
English	English 9	English 10	English 11	English 12 OR Comp I/Comp II	CAD 277 3-D Modeling I 3 CAD 279 3-D Modeling II 3 CAD 285 Computer Aided Drafting for Industry 4 MFG141 Geometric Dimensioning & Tolerancing 2 CSC110 Intro to Computers or BCA 206 3 COM 753 Technical Comm. Or Gen. Ed elective 3 PSY 102 Human & Work Relations or Gen. Ed 3 MAT 777 Applied Algebra/Trig 3
Science	General Science	Biology	Chemistry	Physics	MFG 206 Manufacturing Process I 3 MFG 322 Intro to CAD/CAM 3
Humanities Social Sciences	World History	History Elective	US History or AP US History	Government	EGT 410 PLTW Principles of Engineering 3 MFG 125 Intro to Automation 4 MFG 542 Machine Design 4
Foreign Language	Spanish I	Spanish II	Optional but strongly encouraged.		
Electives	Careers, Health, and Physical Education Fine Arts: Band, Choir, Art, Journalism				
Foundational	Google Apps		Workplace Readiness/ Personal Finance		EGT 151 Virtual Reality of Manufacturing 3 EGT 159 Statics & Structural Design 4 EGT 169 Mechanisms & Motion 4
Career Specialty		Drafting I	Drafting II	Advanced Drafting/Other	MFG 148 Manufacturing Design 4
Career Specialty				Internship	Program Total 72

MMCRU Community School District
 Manufacturing Program of Study: Production Welding
Career Cluster: Manufacturing / Pathway: Production Welding

Subject	High School					NWICC
	Freshman Year	Sophomore Year	Junior Year		Senior Year	Production Welding
Math	Algebra I Algebra I part I	Geometry Algebra I part II	Algebra II Informal Geometry		Advanced Math Vocational Math	Elective Math* 3 MFG185-E OSHA/Shop Safety 2 MFG122-E Machine Trade Print Reading I 3 WEL152-C Shielded Metal-Arc Welding 3 WEL186-E GMAW 4 WEL120-E Oxy Fuel Welding & Cutting 2 WEL240-E Welding Fabrication/Certification 3 MFG507-C Lean Quality Manufacturing 2 WEL191-C Gas Tungsten Arc Welding 3 WEL187-C Advanced GMAW 4 Elective Communications* 3 WEL320-C Welding Fabrication 3 SDV135-C Job Seeking Skills 1 WEL200-C Metallurgy Fundamentals 2 WEL700-C Robotics Theory/Lab 4 WEL308-C Pipe Weld Theory/Lab 4 *You may select any math or communications course with A, E, or C suffix. NOTE: Satisfactory assessment scores and/or prerequisites are required for some courses *Certificate Option MFG185-E OSHA/Shop Safety 2 MFG122-E Machine Trade Print Reading I 3 Welding Credits 7
English	English 9	English II	American Literature	Advanced Composition	Language Arts Elective	
Science	Physical Science	Biology	Science Elective		Science Elective	
Humanities/ Social Sciences	Elective	World History	U.S. History		U.S. Government Economics	
Foreign Language	Spanish I	Spanish II	Spanish III		Spanish IV	
Electives	Health/P.E.		Fine Arts: Band, Choir, Art, Drama		Journalism	
Career Foundational					J.O.B.S J.O.B.S Internship	
Career Specialty	Introduction to Industrial Trades	Welding-Fabrication I	Welding-Fabrication III		NWICC WEL-265 Introduction to Welding	
Career Specialty	Drafting I/I	Welding-Fabrication II	Welding-Fabrication II		Independent Study Manufacturing	

WELDING WHAT DOES IT TAKE? WHAT DOES IT MAKE? (Via United States Dept. of Labor)

NATIONAL MEDIAN WAGES (EDUCATION) RELATED CAREER:

\$57,300.00 (ASSOCIATES) WELDER, CUTTERS,SOLDERERS

\$58,910.00 (ASSOCIATES) MACHINIST, TOOL & DIE MAKER

\$58,290.00 (APRRENTICE)SHIP SHEET METAL WORKER

\$73,140.00 (CERTIFICATION/ASSOCIATES) IRON & STEEL WORKER

\$76,560.00 (LICENSE/CERTIFICATION) BOILER MAKER

JOB OUTLOOK: 23% INCREASE

Chair Signature _____

Instructor Signature _____

MMCRU High School
Manufacturing Program of Study: Construction
Career Cluster: Architecture and Construction / Pathway: Construction

Subject	High School				NWICC
	Freshman Year	Sophomore Year	Junior Year	Senior Year	Construction Technology
Math	Algebra I	Geometry	Algebra II	Advanced Math	1 st Year—Certificate Program
English	English 9	English 10	English 11	English 12 or Composition I/II	<i>CON160-C Principles of Carpentry I 5</i> CON176-C Carpentry Lab I 10 Elective Math** 3 CON161-C Principles of Carpentry II 5 CON178-C Carpentry Lab II 10 CON164-C Design & Cost Estimating 4 Elective Communications/Drafting* 3 CON169-C Principles of Carpentry III 2 CON193-C Carpentry Lab III 5 CON180-C Cabinetmaking and Millwork
Science	General Science	Biology	Science Elective	Science Elective	
Humanities/ Social Sciences	World History	History Elective	U.S. History or AP US History	U.S. Government	
Foreign Language	Spanish I	Spanish II	Spanish III	Spanish IV	
Electives	Health/P.E. Fine Arts: Band, Choir, Art, Journalism				2 nd Year—Associate Degree
Career Foundational	Google Applications		Workplace Readiness/Personal Finance	J.O.B.S. Internship (Independent Study) (Construction III)	BUS102-A Introduction to Business 3 CSC110-A Introduction to Computers 3 FIN121-A Personal Finance 3 PSY102-E Human and Work Relations 3 Elective Math** 3
Career Specialty	Introduction to Industrial Trades	Cabinetmaking I	Cabinetmaking II (Construction I)	Construction I (Cabinetmaking I)	BUS265-A Risk Management 3 MGT101-A Principles of Management 3 MGT110-A Small Business Management 3 MGT130-A Principles of Supervision 3 Elective General Education*** 3
Career Specialty	Drafting I	Drafting II	Advanced Cabinetry (Construction II)	Construction II (Advanced Cabinetry)	

CONSTRUCTION WHAT DOES IT TAKE? WHAT DOES IT (Via United States Dept. of Labor)

NATIONAL MEDIAN. WAGES (EDUCATION) RELATED CAREER:

\$35,190.00 (APPRENTICESHIP) PAINTER	\$49,140.00 (LICENSE) PLUMBERS/ PIPEFITTERS
\$35,290.00 (APPRENTICESHIP) ROOFER	\$53,450.00 (BACHELORS) BUILDING INSPECTOR
\$37,040.00 (APPRENTICESHIP) TILE & MARBLE SETTER	\$58,860.00 (BACHELORS) MATERIAL ESTIMATOR
\$39,940.00 (APPRENTICESHIP) CARPENTER	\$67,090.00 (BACHELORS/ASSOCIATES) CABINETMAKER
\$40,980.00 (ASSOCIATES) EQUIPMENT OPERATOR	\$78,090.00 (BACHELORS) ARCHITECT/CAD DESIGNER
\$44,950.00 (APPRENTICESHIP) BRICK MASON	\$79,340.00 (BACHELORS) CIVIL ENGINEER
\$49,840.00 (LICENSE) ELECTRICIAN	\$82,790.00 (BACHELORS) CONSTRUCTION MANAGERS

MMCRU High School
Agriculture Program of Study
Career Cluster: Agriculture Sciences

Subject	High School					Iowa Lakes Community College – Agriculture (AAS)	
	Freshman Year	Sophomore Year	Junior Year		Senior Year		
			Fall	Spring	Fall	Spring	
Math	Algebra I	Geometry	Math Elective				
English	English I	English II	English III		Elective		
Science	Physical Science	Biology	Science Elective or Chemistry				
Humanities & Social Sciences	World History	World Geography	US History	Elective	American Government	Economics	
Foreign Language	Spanish I	Spanish II	Optional but encouraged.				
Electives	Health and Physical Education						
Career Specialty	Intro to Agriculture	Survey of Animal Industry (1 semester) Concurrent to NCC	Agriculture Marketing and Sales (1 semester) Concurrent to NCC		Agronomy (1 semester)		
	Horticulture	Animal Science	Natural Resources (1 Semester)		Ag Leadership (1 semester)		
AGA-154 - Fundamentals of Soil Science (3) AGA-103 - Agricultural Computers (3) AGC-111 - Basic First Aide and Life Support (1) AGC-936 - Occupational Experience (3) AGS-114 - Survey of the Animal Industry (2) BUS-161 - Human Relations (3) Elective Course (from list below) (2) AGA-284 - Pesticide Application Certification (3) AGA-114 - Principles of Agronomy (3) AGC-936 - Occupational Experience (3) AGS-319 - Animal Nutrition (3) MAT-772 - Applied Math (3) or MAT 110 - Math for Liberal Arts (3) COM-781 - Written Communications in the Workplace (3) ENG-105 - English Composition I (3) AGC-317 – Agriculture Field Studies (1) AGB-437 – Commodity Marketing (3) AGM-203 – Ag Welding (2) AGA-131 – Plant Physiology (2) AGA-374 – Pest Identification (1) Elective Course (from list below) (1) ACC-111 – Intro to Accounting (3) SPC-101 – Fundamentals of Oral Communication (3) AGB-327 – Principles of Farm Business Management (2) AGB-281 – Computerized Agriculture Accounting (1) AGM-102 – Farm Equipment Maintenance or AGP-242-Precision Ag Applications (1) AGC-936 – Occupational Experience (3) Elective Courses (see list below) (4) AGB-466 – Agriculture Finance (3) AGC-210 – Employment Seminar (1) Elective Courses (see list below) (10) Select Ag Elective courses from the approved list below for a total of 19 credits. At least 4 credits must be taken from the Enterprise Lab list. Ag Elective courses: AGB-218 – Grain Harvest Handling Drying Equipment (2) AGA-352 – Soil Science & Fertilizer (2) AGA-353 – Advanced Soil Fertility (2) AGB-194 – Beginning Sales (2) AGB-210 – Agricultural Law (2) AGB-436 – Grain Merchandising (3) AGC-936 – Occupational Experience (3) AGS-240 – Animal Health (2) AGS-400 – Swine Production I (2) AGS-510 – Swine Confinement Systems (2) AGS-511 – Adv. Swine Confine. Mgt. (2) AGS-522 – Swine Grower Finisher Mgmt(2) AGS-529 – Swine Reprod. & Mgt. (2) AGS-556 – Intro to Beef Cow Production (2) AGS-557 – Advanced Beef Cow Prod. (2) AGS-558 – Grazing Systems & Forage Mgmt (2) AGS559 – Beef Feedlot Production (2) AGS-561 – Advanced Beef Production (2) Enterprise Labs (4 credits required): AGA-840 – Agronomy AGS-562 – Farm Enterprise Beef Feedlot (1R) AGS-565 – Farm Enterprise Swine Tech (1R) AGS-350 – Artificial Insemin. of Cattle (1) AGS-563 – Farm Enterprise Exper/Cow-Calf (1) AGS-564 – Farm Enterprise Forage Mgmt (1) AGS-566 – Farm Enterprise Swine Mgmt (1)							

MMCRU High School
FCS/Human Services Program of Study
Career Cluster: Human Services

Subject	High School				Iowa Lakes Community College Human Services		
	Freshman Year	Sophomore Year	Junior Year	Senior Year			
Math	Algebra I	Geometry	Algebra II or Business Math	Math Elective	HSV 284 Case Management	3 cr.	
					DSV 125 Behavior Management	3 cr.	
					ENG 105 Composition I	3 cr.	
					SCS 101 Elective (Basic Sign Language)	2 cr.	
					SPC 101 Speech Fundamentals	3 cr.	
					PSY 111 Intro to Psychology	3 cr.	
					HSV 225 Counseling Techniques	3 cr.	
					PSY 121 Developmental Psychology	3 cr.	
					OR		
English	English 9	English 10	English 11	English 12 or Comp I/II	PSY 241 Abnormal Psychology		
					BIO 163 Science	4 cr.	
					(Essentials of Anatomy & Physiology)		
					HSV 162 Concentration Course (see below)	3 cr.	
					(Intro to Human Disabilities & Services)		
Science	General Science	Biology	Science Elective		Take a total of 6 credits from the following courses:		
					DSV 932 HS/HD Practicum	2 cr.; 3 cr.	
					OR		
					DSV 941 HS/HD Practicum	3 cr.; 4 cr.; 6 cr.	
					HSC 114 Medical Terminology	3 cr.	
Humanities Social Sciences	World History	History Elective	US History or AP US History	Government	CSC 110 Business/Computers (Intro to Computers)	3 cr.	
					MAT 110 Math (Math for Liberal Arts)	3 cr.	
					DSV 155 Services & Vocational Planning	4 cr.	
					FLS 141 Elective (Elementary Spanish)	4 cr.	
					SOC 115 Social Science (Social Problems)	3 cr.	
Other Required Courses	Health 9,10 Careers 9, 10, 11, 12	P.E. 9,10,11, 12	Spanish 1,2,3,4 (Recommended for College)	Workplace Readiness Personal Business			
Career Specialty	Family Relations	Parenting	Foods	Child Development	SOC 120 Concentration Course (Marriage & Family)	3 cr.	
					PSY 121 Concentration Course (Dev. Or Abnormal Psych)	3 cr.	
					HSV 140 Concentration Course (Social Work & Social Welfare)	3 cr.	
Career Specialty	Textiles	Interior Design	Foods II	Child Development II	SOC 200 Elective (Minority Group Relations)	3 cr.	
					FLS 142 Elective (Elementary Spanish II)	4 cr.	
					Concentration Courses listed on site...		

MMCRU High School
Business Management and Administration Program of Study – Business/Marketing

Subject	High School				WITCC Business Management (AAS)	
	Freshman Year	Sophomore Year	Junior Year	Senior Year		
Math	Algebra I or Geometry	Algebra II or Geometry	Algebra II or Pre-Calculus	Business Math Pre-Calculus Or Calculus	BUS 102 Introduction to Business	3
					MKT 110Principles of Marketing	3
English	English 9	English 10	English 11	English 12 or Comp I/II	MGT 170Human Resource Management	3
					MAT Math General Education Elective	3
Science	General Science	Biology	Science Elective		CSC 110 Introduction to Computers	3
					ADM 154 Business Communication	3
Humanities Social Sciences	World History	History Elective	US History or AP US History	Government	BUS 185 Business Law I	3
					ECN 120 Principles of Macroeconomics	3
Foreign Language	Spanish I	Spanish II	Optional but strongly encouraged if going to a four year college/university		ACC 131 Principles of Accounting I	4
					PSY 102 Human and Work Relations	3
Electives	Health and Physical Education Fine Arts: Band, Choir, Art				SPC 122 Interpersonal Communication	3
					PHI 105 Introduction to Ethics	3
Foundational	Google Apps		Workplace Readiness / Personal Finance		SDV 153 Pre-employment Strategies	2
					MGT 101Principles of Management	3
Career Specialty		Accounting I	Accounting II	Intro to Business	MGT 200Managing Diversity	3
					BUS 150 E-Commerce	3
					MGT 130Principles of Supervision	3
					ACC 132 Principles of Accounting II	4
					FIN 130 Principles of Finance	3
					BUS 930 Career Readiness	1
					BUS 124 Business Innovation	3
					BUS 934 Capstone Experience	1
					MGT 938On-the-Job Training	2
					BUS 130 Intro to Entrepreneurship	3
					Program Total	68

English

English 9 Credits: 2 Grade Level: 9 Term: Year Required

English 9 builds upon students' prior knowledge of grammar, vocabulary, word usage, spelling and the mechanics of writing. The course includes the four aspects of language use: reading, speaking, writing, and listening. The course also introduces and defines various genres of literature, with thematic writing exercises often linked to reading selections along with general journaling experiences.

English 10 Credits: 2 Grade Level: 10 Term: Year Required

Prerequisite: English 9

English 10 offers a focus on composition and literature. Students review grammar, vocabulary, word usage, spelling, and mechanics through various journaling and other writing assignments. Through the study of various genres of literature, students can improve their reading rate and comprehension and develop the skills to determine the author's intent and theme and to recognize the techniques used by the author to deliver his or her message. Students will also be exposed to research based writing projects and public speaking projects.

English 11 Credits: 2 Grade Level: 11 Term: Year Required

Prerequisite: English 10

Junior American Literature is a combination of writing, and literature. Throughout the year students will have the opportunity to study different forms of American writing; analyzing and connecting the story, theme, and literary elements to history. Students will also be writing extensively throughout the course of the year. Most assessments will be completed in written form, as well as project based.

College Composition I Credits: HS-1/NCC-3 Grade Level: 12 Term: Semester Elective

Prerequisite: English 11; ACT English Subscore of 17 or CPT Sentence Structure 86

This is a face-to-face course that focuses on developing written communication skills through various experiences including expository and persuasive writing, and research papers. Instruction will also include basic research and documentation skills.

College Composition II Credits: HS-1/NCC-3 Grade Level: 12 Term: Semester Elective

Prerequisite: Composition I

This is a face-to-face course that focuses on developing advanced writing skills in order to compose analytical and persuasive essays. You will use advanced research and critical thinking skills to respond to and compose essays based on current issues and enduring questions.

Communications I/II Credits: 1 per semester Grade Level: 10-12 Term: Semester Elective

Provides students with the knowledge and skills necessary to produce the school newspaper, which appears in the MCRU News. Students may gain experience in several components (writing, editing, photography, interviewing, etc.) or may focus on a single aspect while producing the publication.

Creative Writing Credits: 1 Grades: 9-12 Term: Semester Elective

Creative Writing is a class that focuses on different genres of writing and techniques of the writing process. Throughout the semester, students will have opportunities to write in their own ways, as well as learn how to write in different types of genres such as nonfiction, fiction, and poetry. Daily journals, class discussion, and personal writings will be a large part of the class.

Society in Literature Credits: 1 Grades: 9-12 Term: Semester Elective

Society in Literature is a class with a focus on dystopian themes and writing. Emphasis is placed on the aspects of a dystopia, the creation of a society, and the impact of dystopian themes on literature. During the semester, students will be engaged in discussions of utopian and dystopian societies. Students will also be introduced and work with dystopian and utopian literature to further understand the themes and creation of such societies. Class discussion, reaction writing, and reading comprehension will be a large part of this class.

College Introduction to Literature Credits: HS-1/NCC-3 Grades: 11-12 Term: Semester Elective
This is a face-to-face course. An introduction to the study of short fiction, poetry, and drama.

Public Speaking Credits: 1 Grades: 9-12 Term: Semester Elective

World Literature is a semester class focusing on different cultural and geographical authors and writing. Throughout the semester, students will learn how culture and personal issues make an impact on the writer's and readers' view of certain situations. Students will be reading, reacting, and analyzing different types of writing from all over the world. Daily journals, class discussion, and personal writings will be a large part of the class.

Shakespeare Credits: 1 Grades: 9-12 Term: Semester Elective

This semester course provides students with the opportunity to read and study different types of Shakespeare's writing. Over the course of the class students will examine the major plays of William Shakespeare while identifying the style of writing used. The class will introduce to student the different genres of Shakespeare (history, comedy, tragedy, romance) and interpret the impact of social context on his writing. Students will also have the opportunity to discover the different characters, plot lines, and themes that Shakespeare created and investigate how his works "live on" through film and social media today.

Math

Algebra I Credits: 2 Grade Level: 8-12 Term: Year Required

Algebra I covers topics that include the study of properties and operations of the real number system, solving linear equations and inequalities including translating word problems into equations and solving real world problems, operations with functions and patterns, graphing linear equations, solving systems of linear equations and inequalities, operations with and factoring of polynomials, and solving simple quadratic equations. A TI-83 or TI-84 graphing calculator is used.

Geometry Credits: 2 Grade Level: 9-12 Term: Year Required

Prerequisite: Algebra I

Geometry is for students who have completed Algebra I. Topics covered include properties of geometric shapes such as polygons and circles, construction, congruence, isometries, area, volume, Pythagorean Theorem, similarity, right triangle trigonometry, and geometric proof. A TI-83 or TI-84 graphing calculator is used.

Algebra II Credits: 2 Grade Level: 10-12 Term: Year Elective

Prerequisite: Geometry

Algebra II is for students who have successfully completed Algebra I. First-degree equations and inequalities, linear relations and functions, and solving systems of equations and inequalities are reviewed. In addition, topics covered include graphing of constant, linear, step, piecewise and quadratic functions; solving higher degree equations, linear programming, matrices, quadratic functions and inequalities, polynomial functions, solving radical equations and inequalities, rational and irrational expressions and equations, conic sections, and probability. A TI-83 or TI-84 graphing calculator is used.

Advanced Math Credits: 2 Grade Level: 11-12 Term: Year Elective

Prerequisite: Algebra II

Advanced Math is a problem-based fourth-year high school mathematics course designed to maximize student preparedness for college and careers. With an emphasis on modeling and inquiry-oriented mathematical practices, Advanced Math is appropriate for employment-bound students as well as for college-bound students whose programs of study do not require calculus.

Pre-Calculus Credits: 2 Grade Level: 11-12 Term: Year Elective

Prerequisite: Algebra II

Pre-Calculus is for students who have completed Algebra II. The student will learn the concepts and skills that are prerequisite for calculus. Topics covered include linear relations and functions, systems of equations and inequalities, matrices, polynomial and rational functions, circular functions, trigonometry, polar equations, exponential and logarithmic functions, probability, and vectors. A TI-83 or TI-84 graphing calculator is used.

Calculus Credits: 2 Grade Level: 12 Term: Year Elective
Prerequisite: Pre-Calculus

This course is strictly intended for college bound students and will better prepare students for college calculus courses. The study of calculus will involve the limit process, derivatives, integrals, exponential and logarithmic functions, along with vectors and a general algebra review. It is recommended that students have at least a B average in all other math courses before taking this course. A TI-83 or TI-84 graphing calculator is used.

Statistics Credits: 2 Grade Level: 11-12 Term: Year Elective
Prerequisite: Algebra II

An introduction to the theory and applications of statistics. Topics include measures of central tendency and variability, probability distributions, confidence intervals, hypothesis testing, linear regression, correlation, analysis of variance and nonparametric statistics. A TI-83 or TI-84 graphing calculator is used.

Business Math Credits: 2 Grade Level: 11-12 Term: Year Elective
Prerequisite: Geometry

Business Math is a course in which students will explore fundamental mathematical concepts such as basic order of operations, real numbers, percent, measurement, calculator usage, fractions, decimals, problem solving, ratios, and proportions. We will cover “real-life” topics such as taxes, personal finance, purchasing, finance, fitness, housing, insurance, transportation and investment. This course features examples in a problem-solving format that allows students to use mathematical skills in consumer situations.

Math in the Trades Credits: 2 Grade Level: 10-12 Term: Year Elective
Prerequisite: Intro to Trades and Teacher Approval

This course is designed to introduce students at MMCRU to the math skills needed to be successful in various skilled trades industries. Math and calculations are the foundation of working in any skilled trade career and are a necessity to working efficiently and effectively in the fields of design, manufacturing, construction, or any other industrial trades pathways. Basic mathematical calculations and measurement systems are often used in these fields, therefore, it is very important for students who have interests in these fields, to master the content in this course. This class is designed to apply basic math and algebra to real life scenarios that are relevant to the skilled trades.

Social Studies

World History Credits: 2 Grade Level: 9 Term: Year Required

World History is an overview course that provides students with an overview of the history of human society from early civilization to the contemporary period, examining political, economic, social, religious, military, scientific, and cultural developments. This course includes geographical studies, but often these components are not as explicitly taught as in cultures classes.

World Geography I Credits: 1 Grades 9-12 Term: Semester Elective

This course will cover the basic understanding about the concepts of the types of geography and an in-depth look of the physical, human, and historical geography of the western hemisphere.

World Geography II Credits: 1 Grades 9-12 Term: Semester Elective

This course will cover the basic understanding about the concepts of the types of geography and an in-depth look of the physical, human, and historical geography of the eastern hemisphere on the continents of Europe, Africa, Asia, and Antarctica.

People and History I Credits: 1 Grades: 9-12 Term: Semester Elective

This course will take an in-depth look at different American and World History topics each academic quarter. Topics will be discussed intensely through reading, writing, lecture, video, and/or speakers. A wide range of topics are included in this course, covering a variety of people from many different time periods.

People and History II Credits: 1 Grades: 9-12 Term: Semester Elective

This course will take an in-depth look at different American and World History topics each academic quarter. Topics will be discussed intensely through reading, writing, lecture, video, and/or speakers. A wide range of topics could be included in this course. Topics for discussion will include Ancient Greece, the Vikings, Tsarist Russia, the Renaissance, World War Two, Chinese Communism, the Vietnam War, and a variety of other people/time periods in history.

Civics Credits: 1 Grade Level: 9-12 Term: Semester Elective

Civics courses examine the general structure and functions of the American systems of government, the roles and responsibilities of citizens to participate in the political process, and the relationship of the individual to the law and legal system. These courses do not typically delve into the same degree of the detail on the constitutional principles or the roles of political parties and interest groups as do comprehensive courses in U.S. Government. These courses look at the role of government on a local level, as opposed to a national level.

U.S. History Credits: 2 Grade Level: 11 Term: Year Required

The major focus of the course is on the United States from the Reconstruction Period to the Obama Administration. Students will study the Reconstruction, the Titans of Industry in America, WWI, the Roaring '20's, the Great Depression, WWII, the Cold War, the Korean War, the Civil Rights Movement, the Women's Movement, Vietnam, the Gulf War, 9/11, and the 21st Century.

AP U.S. History Credits: 2 Grade Level: 11-12 Term: Year Elective

****Can be taken instead of U.S. History to fulfill requirement**

The AP U.S. History course focuses on developing students' understanding of American history from approximately 1491 to the present. The rigorous course has students investigate the content of U.S. history for significant events, individuals, developments, and processes in nine historical periods, and develop and use the same thinking skills and methods (analyzing primary and secondary sources, making historical comparisons, chronological reasoning, and argumentation) employed by historians when they study the past. The course also provides seven themes that students explore throughout the course in order to make connections among historical developments in different times and places.

U.S. Government Credits: 1 Grade Level: 12 Term: Semester Required

Prerequisite: U.S. History/AP U.S. History

This course provides an overview of the structure and functions of the U.S. government and political institutions and examines constitutional principles, the concepts of the rights and responsibilities, the role of political parties and interest groups, and the importance of civic participation in the democratic process. These courses may examine the structure and function of state and local governments and may cover certain economic and legal topics.

Economics Credits: 1 Grade Level: 11-12 Term: Semester Elective

Economics provides students with an overview of economics with primary emphasis on the principles of microeconomics and the U.S. economic system. These courses may also cover topics such as principles of macroeconomics, international economics, and comparative economics. Economic principles may be presented in formal theoretical contexts, applied contexts, or both.

World Wars Credits: 1 Grade Level: 10-12 Term: Semester Elective

World War I and II are among the most interesting topics of the 20th century. What brought Europe to the First World War? How did its ending lead to World War II? How did the Nazis rise up in Germany? What really happened during World War II? The Holocaust? These questions and more will be answered throughout the duration of this course. If you are ready to learn more about and participate in an in-depth analysis of the World Wars, this is the course for you!

Contemporary U.S. Issues I/II Credits: 1 per semester Grade Level: 9-12 Term: Semester Elective
U.S. Issues is a class that will examine many of the issues and events in the United States. The course will explore a variety of ways to express oneself in debate and writing assignments. Students will need to come prepared with an open mind and be willing to challenge and defend their viewpoints.

Contemporary World Issues I/II Credits: 1 per semester Grade Level: 9-12 Term: Semester Elective
World Issues is a class that will examine many of the issues and events around the world. The course will explore a variety of ways to express oneself in debate and writing assignments. Students will need to come prepared with an open mind and be willing to challenge and defend their viewpoints.

Science

General Science Credits: 2 Grade Level: 9 Term: Year Required
General Science courses involve the study of the structures and states of matter. This class is offered as an introductory survey course, and may include such topics as forms of energy, wave phenomenon, electromagnetism, and physical and chemical interactions.

Biology Credits: 2 Grade Level: 10 Term: Year Required
Biology is a one-year course, which studies life. Understanding life and life processes depends on mastering the unifying principles and concepts applicable to all life. This course is designed to give the student opportunity to see and understand the fundamental unity in the diversity of life forms. Life is one thing that every person has in common with every other living organism. Understanding the life functions of other organisms as well as gives each person a better understanding and appreciation of their environment.

Chemistry Credits: 2 Grade Level: 11-12 Term: Year Elective
Prerequisites: General Science & Algebra I
A college prep course designed to build on the foundation laid in Physical Science. Math background should include at least one year of algebra. The theories of matter, energy, and chemical reactions are studied in detail. Emphasis is placed on equation writing, applied math, and proper lab techniques.

Physics Credits: 2 Grade Level: 11-12 Term: Year Elective
Prerequisites: Algebra I and currently enrolled or completed Algebra II
A college prep look at applied mathematics as its principles apply both in theory and practical work. The study includes motion, forces, energy, heat, waves, and electricity.

Anatomy Credits: 2 Grade Level: 11-12 Term: Year Elective
Prerequisites: Biology
Taken after biology this class offers more detail to the biological processes. Topics that may be explored include cell organization, function, and reproduction; energy transformation; human anatomy and physiology; and the adaptation of organisms.

Environmental Science Credits: 2 Grade Level: 11-12 Term: Year Elective
Environmental Science examines the mutual relationships between organisms and their environment. In studying the interrelationships among plants, animals, and humans, these courses usually cover the following subjects: photosynthesis, recycling and regeneration, ecosystems, population and growth studies, pollution, and conservation of natural resources.

Forensic Science Credits: 1 Grade Level: 11-12 Term: Semester Elective
Introduction to the application of scientific methods for the examination of physical evidence in the criminal justice system; an overview of the forensic analysis of fingerprints, drugs, blood, hair, fibers, paint, glass, arson debris, etc.

College Nurses Aid Credits: HS-1/NCC-3 Grade Level: 10-12 Term: Semester Elective

This is a face-to-face course offered by a NCC teacher. Throughout this course you will learn the information and requirements to become a Certified Nurse's Assistant (CNA).

Business

Workplace Readiness Credits: 1 Grade Level: 10-12 Term: Semester Required

The objective of this course is to prepare the next generation of those entering life outside of high school. In order to prepare the next generation, we will be exploring careers, developing career plans, discussing workplace ethics, sharpening teamwork and leadership skills, developing key life skills, and exposing them to the financial decisions an individual or family must make in order to earn, budget, save and spend money over time.

Personal Finance Credits: 1 Grade Level: 10-12 Term: Semester Required

This class is a study of practical personal finance. Included in the curriculum is banking services, credit, insurance, taxes, investments and consumer decision-making. This is a useful course for every student who plans on earning and/or spending money.

Computer Applications Credits: 1 Grade Level: 9-12 Term: Semester Elective

In this fast paced world it is important for you to be aware of the new technologies around you and for you to be able to use them effectively and efficiently whether you plan on entering college or the workforce after high school. This course will allow you to use Google Apps more effectively and efficiently so that you are more marketable in the workforce as well as more prepared for the ever-changing world around you.

Introduction to Business Credits: 2 Grade Level: 9-12 Term: Year Elective

This introductory business class provides complete instruction in business concepts and skills students need in today's competitive business environment. This class offers extensive coverage in major business concepts in the areas of Finance, Marketing, Operations, and Management. Students will gain valuable information and skills to take with them to the workplace, as well as preparation for success in the business world.

Accounting I Credits: 2 Grade Level: 9-12 Term: Year Elective

Accounting is an essential aspect of every business institution and organization as well as a crucial skill that is helpful in everyday life. As future workers, entrepreneurs, citizens, and parents, students who understand basic accounting principles will more knowledgeably manage companies' financial resources as well as be better prepared to make the correct economic decisions that will affect their communities and their own economic futures.

Accounting II Credits: 2 Grade Level: 10-12 Term: Year Elective

Prerequisite: Accounting I

Accounting II is an advanced continuation of the Accounting I course.

Internship Credits: 1 or 2 Grade Level: 12 Term: Spring Semester Elective

Prerequisite: Workplace Readiness

The Internship course is a structured career activity where a student follows an employee at a company location to learn about a particular occupation or industry. The purpose for this class is to help students explore a range of career options. This course helps students accomplish the following:

- Gain Information about possible future career interests
- Observe the system of the host's company or business
- Gain an insight of the academic, technical, and personal skills required by particular occupation
- Gain an understanding of the connection between school and work
- Gain information to assist students in goal setting and educational planning

Art

Introduction to Art Credits: 2 Grade Level: 9-12 Term: Year Elective

Introduction to Art is required in order for the student to take any upper level art classes. This class provides students with the knowledge and opportunity to explore and create individual works of art. Introduction to Art focuses on the elements and principles of design and creating accompanying art projects. Students will look at famous artists throughout history as a way to learn and explore new art techniques. Art techniques and medias covered are drawing, painting, sculpture, printmaking, and clay.

2-D Art Credits: 1 Grade Level: 10-12 Term: Semester Elective

Prerequisite: Intro. to Art

This class will be a combination of both drawing and painting. Beginning classes (1-2) will explore different techniques and approaches to both mediums. Advanced students (3-4) will be able to focus on medium and subjects of self choice and use the teacher for guidance.

Muliti-Media 1-2 Credits: 1 Grade Level: 10-12 Term: Semester Elective

This class will be Pinterest inspired with different art techniques also approached. This class uses many different mediums and is experimental.

Muliti-Media 3-4 Credits: 1 Grade Level: 10-12 Term: Semester Elective

This class the advanced version and is more student led with teacher guidance. Projects will be self created and must show your advanced level. Multi-Media 1-2 is prerequisite.

Advanced Art Credits: 2 Grade Level: 12 Term: Year Elective

Prerequisite:

Portfolio class for advanced students who are working with subjects and medium of choice, building an art portfolio that could be used for college or art contests.

Graphic Design Credits: 2 Grade Level: 10-12 Term: Year Elective

This course looks closely at photography and online design while producing the school yearbook. We work closely together while examining good yearbook design and some outside class for attending activities is required. This class makes a great resume point and gives you real world design experience. **Any semester drops will require teacher signature and reimbursement of any workshop fees.**

Guidance

Careers ¼ Credit/Year – independent study Grade Level: 9-12 Term: Year Required

This web-based course is required for all students who are exploring a future academic program or career choice. Through the process of self-exploration and career planning, students will learn how to match personal needs and expectations with satisfying career options. Students will learn self-assessment skills, research major and career alternatives, and make decisions based upon sound factual information, utilizing a variety of resources.

Study Skills Credits: 0.5 Grade Level: 9-12 Term: Semester Administratively Placed

This is course designated for students who need extra support and structure to be academically successful. Students placed in this course have often failed one or more classes. Lessons support organization, time management, responsibility, etc. The course will also provide guided homework assistance.

Family and Consumer Sciences

Intro to FCS Credits: 1 Grade Level: 9-12 Term: Semester Elective

This is a semester course that gives an intro to FCS classes. The subjects involved include but are not limited to self-concept, communication, management of time and money, designing and furnishing a living space, sewing, and healthy cooking on a budget. This is a prerequisite for all other FCS courses.

Foods I	Credits: 1	Grade Level: 9-12	Term: Semester	Elective
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This is a semester course that covers but is not limited to kitchen safety, measuring techniques, MyPlate, nutrients, food labels, brand name foods vs. store name brands foods, quick breads, cakes, introduction to proteins, vegetables, fruits, and introduction to milk products. Students are involved in real world application and do kitchen lab work.

Foods II	Credits: 1	Grade Level: 9-12	Term: Semester	Elective
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Prerequisite: Foods I

This is a semester course that covers but is not limited to aesthetics, manners and etiquette, advanced meats and poultry, advanced milk products, pies, cooking on a budget, convenience vs. homemade foods, beverages, and yeast breads. Students do hands on work, real world application, and kitchen lab work. Foods I must be taken before Foods II, and Foods II must be taken before Foods III.

Foods III	Credits: 1	Grade Level: 10-12	Term: Semester	Elective
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Prerequisite: Foods II

This is a semester course that covers but is not limited to preserving foods, food presentation, cake/cookie decorating, world foods – chines, Mexican, German, African, Russian, etc., customs and etiquettes of these countries. Students do hands on work, real world application, and kitchen lab work. Foods I and Foods II must be taken before Foods III.

Textiles I	Credits: 1	Grade Level: 9-12	Term: Semester	Elective
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This is a semester course that is devoted to learning and perfecting the repair and maintenance of clothing. Students choose projects to work on from clothing, accessories, and quilts. The student supplies all materials and the school provides sewing machines. Subjects covered include but are not limited to careers in fashion design, textiles, and all aspects of clothing maintenance and repair.

Textiles II	Credits: 1	Grade Level: 9-12	Term: Semester	Elective
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This is a semester course that is devoted to learning how to sew. It is suggested to take Textiles I first, but is not required. Students will choose project to work on from clothing, accessories, quits, recyclables, etc. The student supplies all materials and the school provides sewing machines. Students will be working on projects for the entire semester. These projects may include sewing, crocheting, knitting, etc.

Interior Design	Credits: 1	Grade Level: 9-12	Term: Semester	Elective
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This is a semester course in which students learn about all aspects of interior design. Topics include but are not limited to elements and principles of design, floor plans, traffic flow, furniture design, ergonomics, client relationships and proposals, computer generated plans, kitchen and bath design, and construction basics.

Child Development I	Credits: 1	Grade Level: 9-12	Term: Semester	Elective
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This class is a semester long courses that include but are not limited to child development theorists, conception, pregnancy, birth, and birth-preschool.

Elementary Education	Credits: 1	Grade Level: 10-12	Term: Semester	Elective
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Prerequisite: Child Development I

This class is a semester long course that include but are not limited to educating Elementary children. Students will be emerged into an Elementary classroom where they will interact and help teach in an Elementary setting.

Middle School Education	Credits: 1	Grade Level: 10-12	Term: Semester	Elective
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Prerequisite: Child Development I

This class is a semester long course that include but are not limited to educating Middle School children. Students will be emerged into a Middle School classroom where they will interact and help teach in a Middle School setting.

High School Education Credits: 1 Grade Level: 10-12 Term: Semester Elective

Prerequisite: Child Development I

This class is a semester long course that include but are not limited to educating High School children. Students will be emerged into a High School classroom where they will interact and help teach in a High School setting.

Parenting Credits: 1 Grade Level: 9-12 Term: Semester Elective

This is a semester course that covers but is not limited to dating and marriage, conception, pregnancy, birth, parenting styles, and building strong family concepts. Students will be wearing empathy bellies and taking care of “Real Care” babies at the end of semester.

Home Furnishing Design Credits: 1 Grade Level: 9-12 Term: Semester Elective

This is a semester course that covers but is not limited to designing and making/building items to improve a living spaces style and functionality. Students will be coming up with projects they would like to make and then planning and creating a project.

Fine Arts

Instrumental Music Credits: 2 Grade Level: 9-12 Term: Year Elective

The high school band meets daily, with a focus on ensemble playing and individual musicianship. Rehearsals are devoted to preparing music for public performance. The band performs at home football and basketball games, and at pep rallies in a pep band setting. The band also performs four public concerts each year and at the spring graduation ceremony in a traditional concert setting. All band students participate in the state Solo and Ensemble Festival in April and the Large Group Festival in May. High school band members are also eligible to participate in various honor bands and in the extra-curricular Jazz Band. In addition to daily rehearsals, band members are expected to meet with the director for lessons throughout the year to work on individual skills and musicianship, and to maintain a record of individual practice time. Grading is based on performance attendance, lesson attendance, and individual practice time. Along with the Concert Choir, the band takes a major trip every four years.

Concert Choir Credits: 2 Grade Level: 9-12 Term: Year Elective

The members of the MMRU Concert Choir rehearse daily as part of the regular school day. They perform four concerts a year, attend large group festival in the spring and perform at a graduation. Members of the choir are required to take one voice lesson per week to better understand proper vocal technique and tone production. Members of the concert choir are eligible to participate in other events such as All State Chorus, Opus Honor Choir, Morningside Men and Women in Song Northwest Iowa Honor Choir and State Solo and Small group contest. Every four years a combined band and choir trip is taken. Time outside the classroom includes required concerts and other elective performances. Grading is based on preparation of music, participation, weekly lessons and required performances.

Foreign Language

Spanish I Credits: 2 Grade Level: 9-12 Term: Year Elective

Spanish I is a class in which students are introduced to another language and many different cultures. They practice the skills of listening, speaking, reading, and writing. These skills are practiced by means of listening activities, paired activities, group activities, writing samples, and videos. The emphasis is on speaking and listening; the skills used in everyday conversation. Concepts include, but not limited to, telling time, greetings and farewells, numbers, the alphabet, Spanish speaking countries, and free time activities. Students will also learn the present tense.

Spanish II Credits: 2 Grade Level: 10-12 Term: Year Elective

Prerequisite: Spanish I

Spanish II is a class that reviews the conversational phrases and grammatical points from Spanish I. Students continue to practice the skills of listening, speaking, reading and writing. Students communicate in the classroom in Spanish. More emphasis is placed on incorporating new grammatical points and vocabulary into speaking. Concepts covered, but not limited to, include irregular verbs, food and restaurant, question words and invitations, places along with the verb ir, and the simple future tense.

Spanish III Credits: 2 Grade Level: 11-12 Term: Year Elective

Prerequisite: Spanish II

Spanish III reviews conversational phrases and grammatical points from previous Spanish classes. While conversations in Spanish are important, more emphasis is placed on incorporating the grammar into writing. Students will develop their own style of writing through a guided writing process. Class is conducted in Spanish. Concepts covered, but not limited to, include body parts, clothing, reflexive verbs, informal commands, and the preterit tense.

Spanish IV Credits: 2 Grade Level: 12 Term: Year Elective

Prerequisite: Spanish III

Spanish IV emphasizes and incorporates the materials from the previous three levels. Students will be involved in intensive grammar reviews. They will be using the grammar in speaking, reading, and writing at a more advanced level. This class is conducted in Spanish. Concepts covered, but not limited to, include formal and plural commands, the difference between the imperfect and preterit tenses, the subjunctive mood, and reading Spanish novels.

Industrial Technology

Introduction to Industrial Trades Credits: 2 Grade Level: 9-12 Term: Year Elective

Introduction to Industrial Trades is a required course for all other cabinetmaking and construction classes and is strictly for first year woodworking students. It exposes students to the tools and machines that they may encounter in vocational trades occupations and enable them to develop the skills they need to use these tools in various applications. Students will be expected to demonstrate a working knowledge of skills learned throughout the class in the completion of a selected project that covers techniques involved with the class content. Course topics include (but are not limited to) drawing and planning, woodwork, finish and hardware processes, and basic metal work. Concepts from this course will not only be beneficial for future cabinetmaking classes, but also for future classes in the industrial technology field. Certain elements of applied mathematics should be demonstrated by students during processes in the course. These courses typically emphasize general safety and career exploration in a preparation for classes that will branch off into a variety up industrial trades courses. Any semester drops will require teacher signature and reimbursement of any workshop fees.

Cabinetmaking I Credits: 2 Grade Level: 10-12 Term: Year Elective

Prerequisite: Intro to Industrial Trades

Cabinetmaking I is a branch into the cabinetmaking division of the industrial technology program in which students will be expected to continue building the knowledge and skills presented to them in Introduction to Industrial Trades. The course will continue to expose students to the tools and machines that they may encounter in various occupations and enable them to develop the skills they need to use these tools in numerous applications such as planning and design, cabinetmaking, carpentry, finish work, and other applied technology fields. The course will once again emphasize certain elements of applied mathematics as well as technology experiences. Students will be expected to demonstrate skills in planning and design, woodworking fabrication, finish and hardware processes, and basic metal work, at higher levels than what was presented in Intro to Industrial Trades. This course will emphasize careers in custom and commercial woodworking and finish carpentry opportunities and also build skills that are valuable in other areas of our industrial technology program. Any semester drops will require teacher signature and reimbursement of any workshop fees.

Cabinetmaking II Credits: 2 Grades: 11-12 Term: Year Elective

Prerequisite: Intro to Industrial Trades, Cabinetmaking I

Cabinetmaking II is a continuation of Cabinetmaking I in which students will be expected to continue building the knowledge and skills presented to them in Cabinetmaking I. The course will continue to expose students to the tools and machines as well as expose students to more advanced concepts in woodworking and other trade industries. The extended focus of this course will hone in on concepts involved in commercial millwork and custom cabinetry in our local job pool. Equipment setup and joinery techniques in this class will be more advanced than those presented in Cabinetmaking I and will push students to pursue more advanced skills in cabinetry. The course will once again emphasize certain elements of applied mathematics as well as technology experiences. Students will be expected to demonstrate an advanced skillset in cabinetmaking and millwork through hands on applications at higher levels than

what was presented in Cabinetmaking I. Any semester drops will require teacher signature and reimbursement of any workshop fees.

Advanced Cabinetry/Woodworking Credits: 2 Grades: 12 Term: Year Elective

Prerequisite: 2 Industrial Trades Courses (Preferably Cabinetmaking I/II)

Advanced Cabinetry is a course offered to not only increase students' abilities to their highest potential, but also give students the opportunity to give back to their program, school, and community. Students will be expected to continue building their knowledge and skills presented to them in Cabinetmaking III. The course will continue to expose students to the tools and machines as well as expose students to more advanced concepts in woodworking and other trade industries. The course will once again emphasize certain elements of applied mathematics as well as technology experiences. Students will be expected to demonstrate an advanced skillset in cabinetmaking and millwork through hands on applications at higher levels than what was presented in Cabinetmaking II. Students will focus on more than cabinetry but also different formats of woodworking such as furniture. This course will emphasize careers in custom and commercial woodworking, finish carpentry, as well as architectural millwork opportunities with an emphasis on safety. Any semester drops will require teacher signature and reimbursement of any workshop fees.

Welding & Fabrication I Credits: 1 Grades: 9-12 Term: Semester Elective

This is a course designed to develop the student's awareness of industrial welding processes as well as fabrication concepts. Students deciding to enter the field of welding and metal fabrication will be introduced to the basics of safety and sanitation, as well as equipment identification and use. Students learn about the variety of careers available in the welding and metal fabrication industry, as well as hand tools and shop equipment. Different modes and techniques of welding are demonstrated and practiced on various materials as well as demonstration of a variety of joint concepts used in fabrication processes. MIG (GMAW), Flux-Core (FCAW), Arc (SMAW), and Oxy-Acetylene welding and cutting processes will be taught as a major part of the class as students will be introduced to each process throughout the class. Technology-related mathematics, reading, writing, vocabulary, blueprint reading and science are integrated throughout the curriculum to prepare students for the next course of Welding & Fabrication II. Fieldtrips to local industries and manufactures will be a continuous staple to this program to get students a true understanding of modern manufacturing and welding in our area.

Welding & Fabrication II Credits: 1 Grades: 9-12 Term: Semester Elective

Prerequisite: Welding & Fabrication I

This course expands upon the concepts and skills presented to student in Welding & Fabrication I. Students prepare sections for joints, fillets and grooves and then test-weld. Proper use of machine cutting tools is demonstrated and then practiced by students. Oxy-fuel cutting and joining processes are taught and practiced, and quality is examined and diagnosed. Gas Metal Arc Welding (GMAW) applications, parameters, gases, wire types and sizes are studied, demonstrated and practiced. Fabrication processes will be expanded upon as well as the art of weld symbol reading will be emphasized. Students continue to receive instruction in safety requirements and demonstrate sound safety practices. Technology-related mathematics, reading, writing, vocabulary, blueprint reading and science are integrated throughout the curriculum. This course will also touch on certain elements of mass-production manufacturing as students work as a team to produce their own custom item to potentially be sold for profit in entrepreneurial projects. Throughout this course students will continue to build their knowledge and skills till they are prepared to develop and complete a fabrication project of their own involving the processes they have learned in both courses they have taken. Fieldtrips to local industries and manufactures will be a continuous staple to this program to get students a true understanding of modern manufacturing and welding in our area.

Welding & Fabrication III Credits: 2 Grades: 10-12 Term: Year Elective-Teacher Approval

Prerequisite: Welding & Fabrication I/II

This course expands upon the concepts and skills presented to student in Welding & Fabrication I/II. Students will grow on their knowledge base of production welding in a format that is relative to manufacturing in our local industries. All aspects of this course will be based on the demands and needs of modern and local fabrication, teaching students about career opportunities available in our area as well as teaching them real-world skills that are visible in local production welding. Students will also learn different formats or metal forming as the scope of this class will be on manufacturing,

production welding, and equipment setup with CNC based equipment. Fieldtrips to local industries and manufactures will be a continuous staple to this program to get students a true understanding of modern manufacturing and welding in our area.

College Welding Credits: HS-1/NCC-3 Grades: 10-12 Term: Semester Elective
Prerequisites: Introduction to Industrial Trades, Welding Fabrication I, Welding Fabrication II and/or Instructor Approval.
This face-to-face course is designed to introduce the students to the basic fundamental of welding. Procedures used in Shielded Metal Arc Welding and Gas Metal Arc Welding are emphasized. Oxyacetylene cutting and welding are also covered

Course Learning Outcomes:

After completion of the course the student will be able to:

1. Recognize safe welding and cutting practices and procedures.
2. Demonstrate a working knowledge of the welding electrode numbering system.
3. Cut, grind, and prepare material for various welding joints and procedures.
4. Weld mild steel using the SMAW process and 5 AWS approved welding electrodes
5. Weld mild steel using the GMAW process and identify the differences in

Drafting I (Mechanical Drafting) Credits: 1 Grades: 10-12 Term: Semester Elective
Prerequisite: Intro to Ind. Trades

In this course the students will learn the concepts of board drawings and computer drawings to solve mechanical problems in drawings, develop part assemblies, and develop abilities in reverse engineering. Types of drawings that students will be engaged in will be orthographic, 3-view, and isometrics. Students will also learn how to read rulers and scales that relate to drafting. Students will do a floor plan and front elevation on the board and follow all drafting standards. This is a hands on class with grading based on class participation, attendance and attitude, time management, staying on task, productivity, and quality of project or drawing. Neatness, accuracy, lettering, line-value and proper centering of drawing will be stressed. Students will also be introduced to Computer-Aided Drafting using computers and the Autodesk software AutoCAD, which is a computer aided drafting program that is used regularly in the local industry field.

Drafting II (Architectural Drafting) Credits: 1 Grades: 10-12 Term: Semester Elective
Prerequisite: Drafting I

In this course the students will learn the concepts of computer drawings to solve architectural problems in drawings, develop home construction layers, floor plans, and interior/exterior 3d renderings. Types of drawings that students will be engaged in will be orthographic views and 3d views of rooms and exterior views.. Students will also learn how to read rulers and scales that relate to drafting. Students will do a floor plan and front elevation on the board and follow all drafting standards. This is a hands on class with grading based on class participation, attendance and attitude, time management, staying on task, productivity, and quality of project or drawing. Neatness, accuracy, lettering, line-value and proper centering of drawing will be stressed. Students will also be introduced to Computer-Aided Drafting using computers and the Autodesk software Revit and AutoCAD Architecture, which is a computer aided drafting program that is used regularly in the local industry field.

Drafting III (Architecture Ind. Study) Credits: 1 Grades: 11-12 Term: Semester Elective- Teacher Approval
Prerequisite: Drafting II

In this course the students will learn the concepts of computer drawings to solve architectural problems in drawings, develop home construction layers, floor plans, and interior/exterior 3d renderings. Types of drawings that students will be engaged in will be orthographic views and 3d views of rooms and exterior views.. Students will also learn how to read rulers and scales that relate to drafting. Students will do a floor plan and front elevation on the board and follow all drafting standards. This is a hands on class with grading based on class participation, attendance and attitude, time management, staying on task, productivity, and quality of project or drawing. Neatness, accuracy, lettering, line-value and proper centering of drawing will be stressed. Students will also be introduced to Computer-Aided Drafting using computers and the Autodesk software Revit and AutoCAD Architecture, which is a computer aided drafting program that is used regularly in the local industry field.

Construction I Credits: 1 Grades: 10-12 Term: Semester Elective

Prerequisite: Intro to Industrial Trades

Students enrolled in this course (also called Introduction to Construction Trades) will study the proper care and operation of various hand and power tools used in construction, basic carpentry practices that will be a major part of the course; framing; interior and exterior finishing, door/window installation, residential roofing, and basic residential electrical and plumbing installation. Reading and interpreting of building blueprints and specifications with actual application of the competencies will be necessary to complete various construction projects. Students will demonstrate a basic knowledge of these skills along with utility concepts such as plumbing and electrical code standards. Technology-related mathematics, reading, writing, vocabulary, blueprint reading and science are integrated throughout the curriculum. This course covers the basic skills and knowledge which will better prepare students for further action in the Construction II course.

Construction II Credits: 1 Grades: 10-12 Term: Semester Elective

Prerequisite: Construction I

Construction II (or Carpentry) is an opportunity for students to elaborate and build on the skills they developed in Construction I to improve their knowledge and abilities of this applied field. Construction courses provide students with basic knowledge and skills required for the construction of lite commercial and residential structures. Structures that are built in this class will require concepts that were learned in construction I with IBC standards. This course will provide experiences and information regarding construction-related occupations such as carpentry, cabinetmaking, bricklaying, electrical trades, plumbing, concrete masonry, and so on. Students engage in activities such as reading blueprints, preparing building sites, starting foundations, erecting structures, installing utilities, finishing surfaces, and providing maintenance. Student will once again be expected to show their knowledge of technology-related mathematics, reading, writing, vocabulary, blueprint reading and science that is integrated in the course. A large portion of this course will involve community projects and on sight training in construction trades. Through this opportunity students will develop a working knowledge of the construction field and develop skills that will prepare them for post-secondary education in applied sciences or a career in the field after high school.

Construction III Credits: 2 Grades: 11-12 Term: Year Elective-Teacher Approval

Prerequisite: Construction I/II

Construction III (or Construction Management) is an opportunity for students to not only elaborate and build on their construction skills developed in Construction I and II, but also develop communication, management, and time management skills that are relative to managing a real construction company or crew. Students in this limited group will be responsible for meeting with the instructor 1 days a week before or after school to discuss jobsite projects and expectations for managing their crews and projects. This course will provide experiences and information regarding leading construction based companies with interpersonal skills among “employees” and workings with material suppliers and project customers. Students engage in activities such as reading and interpreting blueprints to employees and customers, preparing building sites, and directing employees through the processes of starting foundations, erecting structures, installing utilities, finishing surfaces, and providing maintenance and support to crews. Students will once again be expected to show their knowledge of technology-related mathematics, reading, writing, vocabulary, blueprint reading and science that is integrated in the course. A large portion of this course will involve community projects and on sight training in construction trades.

Manufacturing Credits: 2 Grade Level: 11-12 Term: Year Elective

Prerequisite: Introduction to Industrial Trades, Welding-Fabrication I/II, Drafting I, (OR) Instructor’s approval

Course Description: This course is designed to introduce students to the world of manufacturing and establish a foundation to further studies in the areas of engineering, drafting, welding, fabrication, metal-forming, and machining. Students will explore basic manufacturing materials and processes, tools, techniques, and produce products using a manufacturing system from design to finish. The class will work to expose the students to basic design concepts using CAD/CAM, 3D solid modeling, computer skills, and drawing skills used in previous drafting and engineering coursework. Additionally, the course is designed to expose students to a number of interpersonal skills and competencies necessary for a sustained career in manufacturing. This course will provide the students with a comprehensive knowledge of

manufacturing equipment, safety, maintenance and operation procedures, as well as leadership skills needed to be successful in the field.

Agriculture

Intro to Agriculture

Credits: 2

Grade Level: 9-12

Term: Year

Elective

This course is an introductory in the agricultural education program. A broad study of Ag science, food, and natural resources career cluster. Topics will include: animal and plant sciences, natural resources, agribusiness, horticulture, Agri-technology, FFA student organization, and career experience programs. Emphasis of the course will be to explore the career opportunities available in this widely diversified career cluster, develop communication and problem solving skills, and develop the leadership skills of all students involved.

Horticulture

Credits: 2

Grade: 10-12

Term: Year

Elective

Prerequisite: Intro to Ag or Biology

A course focusing on the application of plant science principles to greenhouse, nursery and landscape plants. Students should have some background in biology or Agri-Science. Topics include plant growth and development, greenhouse/house plants, nursery plants, landscaping design, installation and maintenance of landscape plants, turf management, fruit and vegetable production, and floriculture. Students will design a landscaping project and will work as a class to prepare and install the project.

Agronomy

Credits: 1

Grades: 11-12

Term: Semester

Elective

Prerequisite: Intro to Ag or Biology

This course is an introductory course in plant sciences and soil science. We will study soil formation, characteristics, and fertility management. We will also study the major agronomic crops and all of the basic management areas of fertility, pest management, and environmental impacts.

Animal Science

Credits: 1

Grades: 10-12

Term: Semester

Elective

Prerequisite: Intro to Ag or Biology

This lecture and lab course introduces the student to a global animal industry. Beef, swine, sheep, dairy, horse and poultry production are studied as well as other domesticated animal species. Topics covered are History/origin of animals, handling and safety, cells and tissues, animal nutrition, animal reproduction, genetics, animal health and animal products, selection and marketing.

College Survey of Animal Industry

Credits: HS-1/NCC-3

Grades: 10-12

Term: Semester

Elective

Prerequisite: Animal Science

The major focus of the *Principles of Agricultural Science – Animal* (ASA) course is to expose students to agriculture, animal science, and related career options. Students participating in the ASA course will have experiences in various animal science concepts with exciting hands-on activities, projects, and problems. Students' experiences will involve the study of animal anatomy, physiology, behavior, nutrition, reproduction, health, selection, and marketing. For example, students will acquire skills in meeting the nutritional needs of animals while developing balanced, economical rations. Throughout the course, students will consider the perceptions and preferences of individuals within local, regional, and world markets.

Students will explore hands-on projects and activities to learn the characteristics of animal science and work on major projects and problems similar to those that animal science specialists, such as veterinarians, zoologists, livestock producers, and industry personnel, face in their respective careers.

In addition, students will understand specific connections between animal science lessons and Supervised Agricultural Experience and FFA components that are important for the development of an informed agricultural education student. Students will investigate, experiment, and learn about documenting a project, solving problems, and communicating their solutions to their peers and members of the professional community.

College Intro. to Agriculture Markets Credits: HS-1/NCC-3 Grades: 11-12 Term: Semester Elective

Prerequisite: Intro to Ag or Biology

This face-to-face course focuses on the most challenging area of any business operation. Students will study basic economic principles that affect markets, commodity futures markets, options markets, promotional procedures and world export/import markets. In addition, students will learn how to develop and implement marketing plans and sales procedures for a branded commodity of their choosing.

Ag Leadership Credits: 1 Grades: 11-12 Term: Semester Elective

Prerequisite: Intro to Ag

The overall goal of Today's Challenge is to enhance students' leadership skills and develop an awareness of the world around them. Every career needs collaborative, efficient and problem solving leaders to take on challenges no matter how small or large. Through this course, students will experience career ready problem solving skills, engage in a world problems specifically related to agriculture and plan a community service project.

Ag Biotechnology Credits: 1 Grades: 11-12 Term: Semester Elective

Prerequisite: Intro to Ag or Biology

Animal and Plant Biotechnology, a specialization course in the CASE Program of Study, provides students with experiences in industry appropriate applications of biotechnology related to plant and animal agriculture. Students will complete hands-on activities, projects, and problems designed to build content knowledge and technical skills in the field of biotechnology. Students are expected to become proficient at biotechnological skills involving micropipetting, bacterial cultures and transformations, electrophoresis, and polymerase chain reaction. Students will maintain a research level Laboratory Notebook throughout the course documenting their experiences in the laboratory. Research and experimental design will be highlighted as students develop and conduct industry appropriate investigations. Students will develop and conduct a research project following the National FFA Agriscience Fair guidelines. From background research through data collection and analysis, students will investigate a problem of their choice and conclude the project by reporting their results in the forms of a research paper and a research poster.

Ag Power & Technology Credits: 1 Grades: 11-12 Term: Semester Elective

Prerequisite: Intro to Ag or Biology

The focus of Agricultural Power and Technology (APT) is to expose to students to mechanics, power, technology, and career options in the world of agriculture. Students participating in the APT course will have experiences in various mechanical and engineering concepts with exciting hands-on activities, projects, and problems. Student's experiences will involve the study of energy, tool operation and safety, material properties, machine operation, and structural components. Students will acquire the basic skills to operate, repair, engineer, and design agricultural tools and equipment. Throughout the course, students will apply the engineering principles to the construction of machines and structures.

Wildlife & Natural Resource Credits: 1 Grades: 10-12 Term: Semester Elective

Prerequisite: Intro to Ag or Biology

Topics covered are wildlife, forestry, aquatics and soil conservation. Students will gain the skills in identifying flora and fauna as well as gain experience in the working knowledge of environment conservational resources. The main objective of the course is to prepare for survival in the natural habitat and practice conservation within these environments. We will learn about local and state law concerning environmental engagements. At the end of the course, we will propose a camping trip to a local National Park.

Aquaponics/Hydroponics Food Crop Production Credits: 1 Grades: 10-12 Term: Semester Elective

Prerequisite: Intro to Ag or Biology

Aquaponics and hydroponics have many similarities and share many key concepts. Aquaponics is generally more complicated, as there are essential bacteria that play a large role in the ecosystem. Balancing nutrients, bacteria, plants, animals, and water in a complete ecosystem is the purpose of this class. Students will learn how to produce, manage,

and harvest a living ecosystem without the process of soil. We will grow, maintain and harvest lettuce for the school cafeteria among other crops. We will grow and harvest tilapia.

Landscape Design Credits: 1 Grades: 10-12 Term: Semester Elective

Prerequisite: Intro to Ag or Biology

Introduction to computer and hand rendering techniques of landscape graphics. Students will gain proficiency in plan view and elevation graphics. Intensive studio and computer-based instruction. Principles and practices involved with the establishment and maintenance of managed landscapes. Laboratory work involves site evaluation, installation techniques, postplant care, and maintenance of established landscape plants. By the end of the semester, students will have a drawn landscape, installed landscape, and identify 50 herbaceous and woody plants.

Physical Education and Health

Physical Education Credits: 0.5 Grade Level: 9-12 Term: Semester Required

Physical Education courses provide students with knowledge, experience, and an opportunity to develop skills in more than one of the following sports or activities: team sports, individual/dual sports, recreational sports, and fitness/conditioning activities.

Strength Training Credits: 0.5 Grade Level: 9-12 Term: Semester Required

Strength Training courses will provide students an opportunity to gain knowledge, experience, and develop skills in weight training, fitness and conditioning activities, and developing personal programs. Students will be exposed to different training techniques and workout routines. *This course meets the physical education requirement.

Yoga/Aerobics Credits: 0.5 Grade Level: 9-12 Term: Semester Required

Yoga/Aerobics: Personal Wellness course emphasize conditioning activities that help develop muscular strength, flexibility, and cardiovascular fitness. *This course meets the physical education requirement.

Health Credits: 2 Grade Level: 9 Term: Year Required

Course in which students are exposed to the subjects pertaining but not limited to social health, mental health, sex education, substance abuse, exposure to CPR training, nutrients, exercise, tobacco, and emotional health.

Concurrent Enrollment Classes

Students wishing to take Concurrent Enrollment classes, formally called dual credit, will need to meet certain requirements to be eligible to take these classes. First, students will need to be proficient in their latest Iowa Assessment test. Second, students will need to take the NWICC entrance test. Students who are not proficient or do not meet the NWICC entrance requirements will not be allowed to take the Concurrent Enrollment classes. When taking a concurrent enrollment class, students will be able to receive MMCRU credit and college credit. The college credit earned will be given by Northwest Iowa Community College. Students will have to request a transcript from NWICC to show the college credit. The high school credit will be reflected on your MMCRU transcript. NWICC may transfer to other educational institutions. The tuition for the college credit will be paid by the school district to NWICC. Students are responsible for buying the book at the campus bookstore or online. The school will provide a list of books with their ISBN's.

Student Eligibility Criteria

Students are expected to understand these criteria prior to participation in any of the programs offered under this chapter.

- Students must meet any enrollment requirements established by a post-secondary institution providing coursework under this chapter.
- Students must meet or exceed the minimum performance measures on any academic assessment required by the post-secondary institution.
- Students must take the prerequisites, if any, established by the school district or post-secondary institution.
- Students must have attained the approval of the local school district board or its designee and the postsecondary institution in order to register for a course at the postsecondary level.

- The student must be “proficient” in reading, math, and science as evidenced by the last administration of the Iowa Assessment. If a student is not proficient in one or more of these content areas, the local board may establish “alternative but equivalent” qualifying performance measures to meet this expectation. These measures could include, but are not limited to, additional administrations of the state assessment, assessments provided by the post-secondary institution (an assessment cut score should be provided by the post-secondary institution to determine proficiency), portfolios of student work, student performance rubrics, or end-of-course assessments. The determination of what is permissible in terms of alternate assessments and equivalent performance lies with the local school district.

By regulation of the Iowa Department of Education, students are limited to 23 postsecondary credit hours in one academic year.

Advanced Placement Courses

AP US History will be offered next year; see the description in the Social Studies portion of the course booklet.

Post Secondary Enrollment Option Classes (PSEO)

Students must also be proficient in the most recent Iowa Assessment test in Science, Math, and English. Students may only access courses in this program that are not comparable to those offered by MMCRU. Students will be limited to two PSEO classes each semester.

Course Availability

In order for a class to run, the course must have a sufficient number of registrants. If there is insufficient interest in a particular course, the course will not be offered during the upcoming school year.

Normal Course Load

Each semester every student is required to have 8 credits and PE/SH to maintain a full-time student status.