CAREER AND TECHNICAL EDUCATION (CTE)  
BUSINESS EDUCATION

The objectives of Career and Technical Education courses are designed to help students:

- Develop an awareness of the world of work, explore career options, and relate personal skills, aptitudes, and abilities to future career decisions.
- Understand and demonstrate how academic content is applied in real-world and workplace settings.
- Provide students with the necessary educational experiences to enable them to make better career choices, preparing them for the world of business and college studies.
- Demonstrate mastery of the foundation skills and competencies essential for success in the workplace and advanced college based studies.
- Provide students with the opportunity to earn a 5 credit sequence in Business as an alternative to the 3 credit requirements in a World Language and the Checkpoint B assessment in a World Language for a Regents Diploma with Advanced Designation.

5 Credit Business Education Cluster Sequences

Required Courses for Cluster Sequence:

Career and Financial Management ................................................................. ½ Credit
Career Connections .......................................................................................... ½ Credit
Virtual Enterprise ............................................................................................ 1 Credit

Plus 3 additional credits taken from one of the following clusters:

(All courses in the clusters listed below are offered in grades 10-12 except some college courses which are offered in grades 11-12)

<table>
<thead>
<tr>
<th>Cluster</th>
<th>Course</th>
<th>Credit</th>
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<tbody>
<tr>
<td>Financial Cluster</td>
<td>Accounting</td>
<td>1 credit</td>
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<td></td>
<td>College Introduction to Business</td>
<td>1 credit</td>
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<td></td>
<td>College Accounting</td>
<td>1 credit</td>
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<td></td>
<td>Money, Wall Street and You</td>
<td>½ credit</td>
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<tr>
<td>Computer Cluster</td>
<td>Computer MAGIC</td>
<td>½ credit</td>
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<td></td>
<td>Web Page Design</td>
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<td>Web Page Design II</td>
<td>½ credit</td>
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<td></td>
<td>Video Game Design</td>
<td>½ credit</td>
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<td></td>
<td>Personal Computer Applications</td>
<td>½ credit</td>
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<td>Electives</td>
<td>Balance of Credits</td>
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<tr>
<td>Marketing Cluster</td>
<td>Entrepreneurship and Marketing</td>
<td>1 credit</td>
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<tr>
<td></td>
<td>College Introduction to Business</td>
<td>1 credit</td>
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<td></td>
<td>College Marketing Principles</td>
<td>1 credit</td>
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<td></td>
<td>College Business Law</td>
<td>1 credit</td>
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<td></td>
<td>Restaurant and Hotel Management</td>
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<td></td>
<td>Sports Marketing</td>
<td>½ credit</td>
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<tr>
<td></td>
<td>Fashion Marketing</td>
<td>½ credit</td>
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</table>
BUSINESS EDUCATION

BUSINESS EDUCATION COURSES ARE OPEN TO ALL STUDENTS AS ELECTIVES

Business Education courses are offered as full year or alternating day courses. College courses in the Farmingdale University High School program and St. John’s University are offered only to 11th and 12th grade students.

Accounting

Students are instructed to the double-entry concept of debit and credit entries. Focus is given to generally accepted accounting principles, journals, ledgers, accounts payable, accounts receivable, and overall bookkeeping functions. Successful completion of Accounting gives students a solid foundation in accounting concepts to be used either in entry-level employment or to enrich post-secondary study after high school. Concepts of electronic accounting are introduced with hands-on experience. This course is available to students in grades 10, 11 and 12. It is recommended that students complete this accounting course in 10th or 11th grade if they are considering enrolling in college Account as a junior or senior.

1 Regents Credit
MHS

Career and Financial Management

Start taking control of your future! This course will help students acquire knowledge of the world of work and basic financial management concepts. The first component will help students to explore careers available to them and understand the education, training and other requirements necessary for these careers. Students will focus on developing a career plan and the skills required in today’s workplace. In the second component, students will be introduced to basic financial management concepts that will help them make wise financial decisions. Real world money management topics will include income, credit, spending, saving and investing. Students will learn how to set financial goals, create budgets, maintain a checking account, and choose between various savings options.

½ Regents Credit
MHS/Ames

Career Connections

Get a jumpstart on your career! Explore careers to find the right one for you. This course will give students the opportunity to explore a variety of occupations in each of the 16 U.S. Department of Education Career Clusters. Students will complete career inventories and assessments to determine the correct career choices for them and will then complete a career plan to help them reach their future career goals. Guest speakers from various occupations, site visits to local businesses, and job shadowing opportunities will enhance the student’s classroom learning.

½ Regents Credit
MHS

Computer MAGIC
(Children, Applications, Gaming, Innovation, Coding)

Computers are the tool. People make the MAGIC. In this course, students will learn how people use programs and coding to develop media, applications, and games used on computers and smartphones for productivity, entertainment, and business development. Skills needed to compete in today's workplace -- coding, collaboration, entrepreneurship and creativity -- are embedded in this project-based learning environment.

½ Regents Credit
MHS/Ames

Entrepreneurship and Marketing

Entrepreneurship is a one year course designed to provide students with a background in managing a small business. Content of this course will include selected entrepreneurial skills as well as management and marketing functions related to the operations of a business. The marketing, merchandising, and management skills which make up the course content are presented in a format that emphasizes the small business. A step by step approach will provide students with knowledge of starting and operating a business. Students successfully completing this course will have a solid foundation in entrepreneurial concepts that may be applied to entry-level employment after high school or enrich post-secondary study. No previous business courses required.

1 Regents Credit
MHS
BUSINESS EDUCATION COURSES ARE OPEN TO ALL STUDENTS AS ELECTIVES

Fashion Marketing

Fashion is all around us! Get ready to learn about one of the most exciting and competitive businesses in the world. Fashion Marketing focuses on how the basic marketing principles apply to a range of activities from textiles and apparel production to methods of distribution and promotion of fashion merchandise. Students will learn about the creators of fashion and explore careers in the fashion industry.

½ Regents Credit
MHS

Money, Wall Street and You

Students will learn about managing their personal finances, how the stock market works and the many types of investments available to build a well-diversified financial portfolio. They will explore various investment strategies for stocks, bonds, mutual funds, insurance and real estate. Students will be introduced to the fundamentals of financial planning and learn about budgeting, debt management and retirement planning to grow their money. They will have the opportunity to participate in The Stock Market Game, a stock simulation competition using virtual money and real market prices to practice trading stocks.

½ Regents Credit
MHS

Business Office Applications

Business Office Applications is a one semester course designed to enable the student to become an efficient computer user and understand the basics of Google Apps for Education and Microsoft Office Applications. In one semester, or its equivalent, the student will be taught the skills needed to proficiently use word processing, spreadsheet, and presentation software, as well as be introduced to coding and learn about various career options. This course is essential for any student to help improve his or her computer skills for use at home, school, and in the future at college or work.

½ Regents Credit
BMS/Ames/MHS

Restaurant and Hotel Management

Explore the rapidly expanding career field of hospitality management. Students will be introduced to the operational structure of the lodging and food service industries from the management perspective. Topics include: hotel management, restaurant management, travel and tourism, conventions and professional organization meetings along with other important aspects of this rapidly growing field. An emphasis will be placed on management decision-making criteria by utilizing creative problem-solving student activities and stimulations. No previous business courses required for this course.

1 Regents Credit
MHS

Sports Marketing

The goal of the Sports Marketing course is to educate students to become problem solvers and creative thinkers with the motivation and potential to be leaders in the field of sports marketing and sports management. Business managers play an increasingly important role in the field of professional sports. Course topics will include sports ethics, management issues and trends, sports related career choices along with the college path required to reach these goals. No Previous business courses required for this course.

½ Regents Credit
MHS

Web Page Design I

Web Page Design enables students to learn how to design, create and publish web pages. Students create web pages using HTML (the language of the Internet code) and a variety of tools such as Adobe Photoshop. This is a hands-on project oriented course in which students learn real world skills and produce professional looking websites. Students learn file management fundamentals, how the Internet works, and CSS to format web page elements. There is no prerequisite for this class and it fulfills the half credit computer course requirement.

½ Regents Credit
Ames/MHS
COLLEGE BUSINESS EDUCATION COURSES

Offered through Farmingdale College and St. John’s University
Courses are open to all 11th and 12th grade students

The Business Education Department at Massapequa High School is offering 11th and 12th grade students the opportunity to earn college level credits through the Farmingdale University in High School program and St. John’s University. Upon successful completion, students will receive college credit from SUNY Farmingdale or St. John’s University. Students will also receive Massapequa High School credit.

As noted below, students will receive MHS Regents credit and college credits from SUNY Farmingdale or St. John’s University only if they successfully complete the full year courses. No partial credit will be given. Attendance and grade requirements must also be met in order to earn college credit.

College Introduction to Business
Examine the role of business in American society, the interrelated activities through which business provides the goods and services essential to contemporary society and the interrelationships of business and government, labor and society at large. General areas of study center on: The foundation of business; management of the enterprise; marketing activities; finance and financial services; and contemporary business problems and developments. Students will analyze and relate theory to current events. No previous business courses required.

1 Regents Credit/MHS
Optional: 3 College Credits

College Accounting
This is an accelerated, college level accounting class. Students progress from basic accounting concepts to analysis of financial statements, business organizations and generally accepted accounting principles. This course is an excellent foundation for a major in Business Administration, Pre-Law, or Accounting in two- or four-year colleges. Successful completion of this course provides students the opportunity to earn 6 college credits while in high school. No previous business courses required.

1 Regents Credit/MHS
Optional: 6 College Credits

College Marketing Principles
This course will provide students with a survey of the field of marketing, with particular emphasis on segmentation and target marketing, differential advantage, product life cycles, positioning, marketing mix decisions, and product development. No previous business courses required.

1 Regents Credit/MHS
Optional: 6 College Credits

College Business Law
Enter the world of business law through this introductory level course. The topics introduced include torts, liability, offers and acceptance, contracts, agency, partnership law, corporation law, securities regulations, sales contracts, product liability and law of commercial papers. No previous business courses required.

1 Regents Credit/MHS
Optional: 6 College Credits

Virtual Enterprise
Virtual Enterprise is a simulated business that is set up and run by student teams to prepare them for working in a real business environment. With the guidance of a teacher facilitator and real-world business partners, student teams use information learned in previous full year business courses to create their business, products or services, management and structure, and then engage in the daily operations of running a business. Students will use current business software, electronic communications, and the internet for business transactions. Pre-requisite: One full year business course

1 Regents Credit/MHS
Optional: 6 College Credits
SCHOOL TO CAREER

The mission of the School to Career programs is to help students make connections between what they are learning in school and the skills and competencies required to be successful in the 21st century workplace. These partnership programs provide students with the kind of work experiences that will enable them to make better career decisions. They are designed to enable the community and the school district to partner in providing quality education that prepares students for the workplace and higher education.

The following programs may only be taken as an additional elective beyond the minimum enrollment of six (6) full periods of instruction plus physical education each semester. Students participate in these programs after school hours, and must provide their own transportation to and from the work site. These programs are available during the school year and over the summer. Students will meet with the program coordinator on a scheduled basis and will be required to complete additional related instruction through the Career & Financial Management course or Independent Study Project.

PROGRAMS

Career Exploration Internship Program (CEIP)

Students will receive 1/2 Regents credit for 54 hours or 1 Regents credit for 108 hours of interning within a particular career field. The focus of the internship is career exploration, not skill development. The job site must plan an appropriate variety of job tasks or responsibilities geared toward the enhancement of the educational experience of the student. This is a non-paid internship.

½ OR 1 Regents Credit
MHS

General Education Work Experience Program (GEWEP)

A student may participate in the General Education Work Experience Program and earn 1/2 Regents credit for 150 hours of work or 1 Regents credit for 300 hours of work. Students who elect to enroll in the program must have their job approved by the Work Experience Coordinator, must be getting paid on the books, and must receive satisfactory job performance evaluations throughout the school year.

½ OR 1 Regents Credit
MHS

DECA Business Club (Distributive Education Club of America)

DECA is an association of marketing students of Massapequa High School. Goals of this organization are to enable students to develop leadership qualities, to make students aware of, to develop, and to refine skills necessary in the decision-making process, which are essential in managerial positions in the market place. Competitive events are sponsored locally, statewide, and nationally to challenge DECA members in academic and vocational excellence which are the building blocks to successful careers, and demonstrates the relationship between the business curriculum and the needs of business and industry. More than 60 national corporations sponsor the competitions with cash prizes or stock portfolios.
Family and Consumer Sciences Education Courses are open to all students as Electives

Family and Consumer Sciences Education courses have been designed to prepare students for family life, work life, and allow them to explore careers in areas such as culinary arts and education. The courses provide students with opportunities to develop the knowledge, skills, attitudes and behaviors needed to make the transition to the world of work or college life. Each sequence is worth 1 Regents Credit.

**Food and Nutrition (Fall) and Food for Fitness (Spring)**

**Food and Nutrition (Fall)** - Want to learn how to cook healthy? Learn the basics of nutrition? Make delicious nutrient filled foods and snacks to keep you happy and healthy? In this class, you will learn about the six major nutrients and how to eat for various diets and lifestyles. Learn basic cooking, and knife skills. You will also participate in cooking labs where you will learn to prepare healthy and tasty foods of all varieties.

- ½ Regents Credit
- MHS

**Food for Fitness (Spring)** - Want to learn how to cook healthy foods and snacks? Learn how to use your diet to stay in shape? In this class you will learn how to connect food to your fitness goals. Learn fundamental culinary skills, how to improve physical and mental performance, and how to improve your overall health and wellbeing. You will also participate in cooking labs where you will learn to prepare healthy but tasty foods of all varieties.

- ½ Regents Credit
- MHS

**Art of Baking (Fall) and Creative Food Preparation (Spring)**

**Art of Baking (Fall)** - Like to bake? Want to know how to bake the best cookies, cakes, and breads? In this class you will gain an in-depth understanding of baking and pastry arts by learning and demonstrating various baking techniques, mixing methods, and basic food preparation skills. You will prepare a variety of recipes including cookies, cakes, pies, biscuits, quick breads, yeast breads, and pastries, all from scratch!

- ½ Regents Credit
- MHS

**Creative Food Preparation (Spring)** - Using your knowledge from The Art of Baking, you will be able to be creative with ingredients to design unique and appealing flavor profiles in food. A large portion of this class is dedicated to cake decorating where you will learn how to prepare and utilize different frostings, like fondant and buttercream, to decorate cakes. You will also be able to compete against fellow classmates in various creative baking challenges, like cupcake wars and a cake decorating competition.

- ½ Regents Credit
- MHS

**Cooking for Today (Fall) and International Cooking (Spring)**

**Cooking for Today (Fall)** - Do you enjoy watching cooking shows? Ever want to learn how to cook like they do on TV? In this course you will learn the basics of culinary arts to become proficient in the kitchen. You will learn to prepare a variety of recipes including appetizers, entrees, and desserts utilizing a variety of cooking techniques. Then put your cooking skills to the test by competing in the class Chopped Challenge. This course leads into International Foods.

- ½ Regents Credit
- MHS

**International Cooking (Spring)** - Utilize your knowledge from Cooking for Today to explore and prepare foods and desserts from regions across the United States and around the world. All recipes will be prepared from scratch giving you a basic understanding of cooking and baking. A variety of recipes will be prepared, including empanadas from Central America, pizza from Italy, wontons from Asia, and various desserts from around the world.

- ½ Regents Credit
- MHS
Parenting and Child Development (Fall) and Child Study (Spring)

**Parenting and Child Development (Fall)** - Future psychologists, pediatricians, nurses, counselors, educators, and parents: Parenting and Child Development is a perfect fit for you! This course is valuable in developing a portfolio of materials for college program acceptance and/or career advancement. The curriculum provides an in-depth study of childhood, preparing you to mentor, care and teach the children that attend our spring semester of the Child Study Preschool. Spending a weekend caring for our simulated baby allows you to acquire parenting skills and realistic expectations of children’s needs. This is a fun and interesting class that not only teaches you about various career choices but also about life, your family and future. Prerequisite to spring semester “Child Study.”

½ Regents Credit
MHS

**Child Study (Spring)** - Would you love a class where you get to play? Would you like an opportunity to work with young children? In our Child Study course, you will work as an “Assistant Teacher” with 3-5 year old children in our preschool. You will work in groups to write detailed lesson plans and design activities for a full preschool day of teaching! Lessons will incorporate art, music, science, reading, numbers, and games. What you learn about education in here can transfer to all ages, and age groups, as well as psychology and parenting. We will explore career opportunities for working with children besides education, and develop strong skills needed for success in any workplace in which children are the focus. For those who plan to pursue a career in these related fields, this course will be valuable in developing a portfolio of materials for college program acceptance and/or career advancement. Upon successful completion of this course, students may be considered for a Child Study or Elementary Internship Program their senior year.

½ Regents Credit
MHS

**COLLEGE FAMILY AND CONSUMER SCIENCE COURSE**

Offered through Oneonta
Course is open to 11th and 12th grade students

The FACS Department at Massapequa High School is offering 11th and 12th grade students the opportunity to earn college level credits through SUNY Oneonta. Upon successful completion, students will receive college credit from SUNY Oneonta. Students will also receive Massapequa High School credit.

As noted below, students will receive MHS Regents credit and college credits from SUNY Oneonta only if they successfully complete the full year courses. No partial credit will be given. **Attendance and grade requirements must also be met in order to earn college credit.**

**College Children in Families (Full year course)**

*I really like children and I want to work with them. What does this mean and what do I need to know and understand about children today to work with them?* The first semester of this course will focus on the study of the holistic development of children and the experiences and factors that influence the way children develop. How current events, culture, and today’s families impact child development, and how they compare to the past will be discussed and analyzed. The second semester of the course will consist of observations of preschool students enrolled in the Massapequa High School Child Study Preschool Program and the creation of developmental assessments based on those observations. Students may apply to receive 3 credits from SUNY Oneonta. Prerequisite: Parenting and Child Development and Child Study.

1 Regents Credit/MHS
Optional: 3 College Credits
CAREER AND TECHNICAL EDUCATION (CTE)  
TECHNOLOGY EDUCATION

Technology is the application of the latest scientific discoveries to improve the quality of people’s daily lives. To everyone entering the job market of the 21st Century, an ability to operate and comprehend today’s technologies is critical. Technology Education has been established to introduce students to the latest technologies currently utilized by business and industry, and help prepare students by means of hands-on experiences, working with these technologies.

Students will have an opportunity to learn many career oriented applications of technology, including Architecture, Computer Aided Design (CAD), Digital Electronics, Engineering, Graphic Design, Photography, Video Production and more. The Technology Education Department provides students with the opportunity to earn a 5 credit sequence in Technology as an alternative to the 3 credit requirement in a World Language and the Checkpoint B Assessment in a World Language for a Regents Diploma with Advanced Designation.

A “cluster” method of arranging Technology Sequence Course offerings allows the student an opportunity to explore technologies related to a specific field of interest, while meeting his/her Regents or local diploma requirements.

5 Credit Technology Sequence

To obtain a 5-credit Regents Sequence in Technology a student is required to complete:

<table>
<thead>
<tr>
<th>Credit</th>
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<tbody>
<tr>
<td>I. REQUIRED: Career and Financial Management .................................................................................................................. ½</td>
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<td>II. FOUNDATIONS: Student must elect 1 credit (2 courses)</td>
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<tr>
<td>Design and Drawing for Production* .................................................................................................................. 1</td>
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<td>(apply second 1/2 credit as elective)</td>
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<tr>
<td>Electricity .......................................................................................................................................................... ½</td>
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<tr>
<td>Graphic Communications - Introduction to Photoshop .................................................................................................................. ½</td>
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<tr>
<td>Power and Energy Applications .................................................................................................................................................. 1</td>
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<td>(apply second 1/2 credit as elective)</td>
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<tr>
<td>Technical Drawing .................................................................................................................................................. ½</td>
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<td>*Design and Drawing for Production also meets the Art/Music requirement for all students.</td>
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<td>III. SYSTEMS: Student must select 1/2 credit (1 course)</td>
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<tr>
<td>Production Systems .................................................................................................................................................. ½</td>
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<td>Transportation Systems .......................................................................................................................................................... ½</td>
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<td>IV. Career Cluster Electives: Students must select 3 credits taken in one Career Cluster.</td>
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<td>Cluster</td>
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<td>Communications</td>
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<tr>
<td><strong>Electronics Cluster</strong></td>
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<td>Computer Aided Design</td>
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<td>Electricity</td>
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<tr>
<td>Video Production I</td>
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<tr>
<td>Digital Electronics</td>
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<tr>
<td>Design and Drawing for Production***</td>
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<tr>
<td>Web Page Design</td>
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<tr>
<td>Web Page Design II</td>
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<tr>
<td>Video Game Design</td>
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| **Materials Cluster**   | ½      |
| Computer Aided Design   |        |
| Residential Structure   | ½      |
| Design and Drawing for Production*** | 1      |
| Production Systems      | ½      |
| Technical Drawing       | ½      |

| **Transportation Cluster** | ½      |
| Advanced Automotive Maintenance |        |
| Computer Aided Design I   | ½      |
| Computer Aided Design II  | ½      |
| Computer Aided Design III | ½      |
| Transportation Systems    | ½      |
| Power / Energy Applications | 1      |
| Electricity/Electronics   | ½      |
| Car Care (required)       | ½      |
| Digital Electronics      | ½      |
| Design and Drawing for Production*** | 1      |
| Technical Drawing        | ½      |

| **Pre-Engineering Cluster** | 1      |
| Principles of Engineering*** |        |
| Computer Aided Design      | ½      |
| Digital Electronics       | ½      |
| Design and Drawing for Production*** | 1      |
| Electricity                | ½      |
| Architectural Drawing      | ½      |
| Technical Drawing          | ½      |
| Robotics***                | ½      |
| Engineering Methods***     | 1      |

* Design and Drawing for Production also meets the Arts/Music requirement for all students.
** Only ½ credit for Design for Drawing and Production if also used as a foundation course ½ credit.
*** College credit available through Farmingdale State College’s University in High School program.
**** College credit available through The Fred DeMatteis School of Engineering and Applied Science at Hofstra University
TECHNOLOGY EDUCATION COURSES

College Offerings in Technology: The Technology Department at Massapequa High School is offering students the opportunity to earn college level credits through the Farmingdale University in High School program or Hofstra University in several of their course. Upon successful completion, students will receive college credit from SUNY Farmingdale or Hofstra University. Students will also receive Massapequa High School credit.

As noted below, students will receive MHS Regents credit and college credits from SUNY Farmingdale or Hofstra University only if they successfully complete the full year courses. No partial credit will be given. Attendance and grade requirements must also be met in order to earn college credit.

Architectural Drawing

Architectural Design is designed as an introductory course into architecture and its related fields. Students will be acquainted with the role of the architect in contemporary home design by means of classroom presentations and individual guidance. Students will be directed through the architectural design process, tools of the trade, drawing techniques and terminology. Students’ skills will progress from basic sketches to technical floor plans. Students will be exposed to the career path taken by modern architects from middle school through college to licensing. Those students interested in developing a better understanding of the construction techniques, materials, and skills required to build houses should take the course titled “Residential Structures and Computer Aided Designs.”

½ Regents Credit
MHS

Automotive Maintenance (Fall) and Advanced Automotive Maintenance (Spring)

Automotive Maintenance (Fall) is for all young adults who will soon drive and own an automobile. This consumer-oriented course will place emphasis on car buying, choosing repair shops, routine maintenance, and the proper and safe use of hand tools and equipment. These projects will be presented by means of lecture, demonstrations, and student activities centered around cars students will be encouraged to bring into the lab. Open to 11th and 12th grade students.

½ Regents Credit
MHS

Advanced Automotive Maintenance (Spring) will provide to the interested student an opportunity to explore the operation and maintenance requirements of the various systems found on today’s complex automobiles. Topics will include the following systems: Fuel, Ignition, Cooling, Braking, Suspension and Electrical. Course work will be divided between lecture and hands-on activities. There will be discussion related to careers available in the automobile service industry, along with the background and educational requirements necessary to succeed in this rapidly changing technology. The course is designed so that 11th and 12th grade students who have access to an automobile, learn proper procedures for the safe maintenance of that vehicle. Prerequisite: Automotive Maintenance

½ Regents Credit
MHS

Career and Financial Management

Start taking control of your future! This ½ credit course will help students acquire knowledge of the World of Work and basic financial management concepts. The first component will help students to explore careers available to them and understand the education, training and other requirements necessary for these careers. Students will focus on developing a career plan and the skills required in today’s workplace. In the second component, students will be introduced to basic financial management concepts that will help them make wise financial choices. Real world money management topics will include income, credit, spending, saving and investing. Students will learn how to set financial goals, create budgets, maintain a checking account, and choose between various saving/investing options. This course is required for 5 credit sequence.

½ Regents Credit
Ames/MHS
Computer Aided Design I (Fall) and Computer Aided Design II (Spring)

Computer Aided Design I (CAD) (Fall) is a required area of study for all students entering the fields of design, engineering, architecture, and their related disciplines. This introductory course will expose the student to the latest software programs currently used for designing, drawing and reproducing technical drawings. This course is highly recommended for students considering careers in engineering, design concepts, architecture, interior design or drafting.

½ Regents Credit
MHS

Computer Aided Design II (Spring) is an advanced course that will allow students to fully explore the capabilities of CAD. Student activities will encompass individual design projects utilizing 3D drawings and isometric views, permitting the student’s individual career and future educational interest to be investigated. Students have the option of applying for 3 college credits through Farmingdale State College’s University in High School program. Prerequisite: CAD I

½ Regents Credit/MHS
Optional: 3 College Credits

Computer Aided Design III

Computer Aided Design III, an advanced course, allows students who have completed CAD I and CAD II the opportunity to enhance their skills and knowledge in computer aided design. All phases of engineering graphics, mechanical design and architectural design will be explored. Students will study and produce drawings with 3D views, computer assisted rendering and shading. Students will maintain a portfolio of the graphic representations for future college and job applications. Prerequisite: CAD II

½ Regents Credit/MHS
Optional: 3 College Credits

Design and Drawing for Production

This course is a year long exploration into our universal graphic language, through which engineers, designers and students can express their ideas with creativity, clarity and exactness. It encourages visual problem solving using drafting techniques to describe forms in our man-made environment. This course will provide students with an opportunity to express themselves and display their talents in a variety of ways. Students will produce drawings and projects on their own as well as assigned exercises. Design and Drawing for Production is recommended for students interested in taking CAD, Principles of Engineering or Architectural Drawing. This course may also be used to satisfy the Art/Music Regents requirement. When taken as part of a Technology sequence, 1/2 credit will be used to partially fulfill the foundation core requirement and 1/2 credit will be used as a technology elective.

1 Regents Credit
Ames/MHS

Digital Photography I (Fall) and Digital Photography II (Spring)

Digital Photography I (Fall) provides students with the opportunity to learn basic photographic skills and practices as defined by the age of digital electronics. The digital photography students will learn the historical connections to earlier photographic methods and will be introduced to the photographic elements of camera handling, camera operation, photographic composition and lighting. After shooting, they will download their raw pictures to a digital photo-editing program where the students will learn to use software to touch up, resize and do basic image manipulation before printing their pictures.

½ Regents Credit
MHS

Digital Photography II (Spring) is the intermediate digital photography course that allows students to build on the photographic skills and concepts introduced in Digital Photography I. Greater emphasis will be placed on the students’ use of shutter and aperture priorities and ISO settings during the process of picture taking. They will become more acquainted with action and sports photography techniques as well as advanced studio lighting, portraiture and night photography. Photos will be downloaded to state-of-the-art editing software that will enable students to generate and print higher quality images. Students have the option of applying for 3 college credits through Farmingdale State College's University in High School program.

½ Regents Credit/MHS
Optional: 3 College Credits
Electricity (Fall) and Digital Electronics (Spring)

Electricity (Fall) This hands-on half-year course is an introduction to electricity, its generation and use in the home, at work and in related career fields. Students are offered the opportunity to explore one of today’s most essential, fascinating and fastest growing fields in a classroom/laboratory environment. Working individually and in small groups, students will learn the basics of electricity and electrical devices beginning with electron theory, the basis of design for all electrical and electronic equipment. They will participate in activities and experiments that demonstrate the effects of electricity and assemble useful projects. Students will explore the relationships of how electricity is measured and controlled. This course is the foundation course for the many 5 Credit Technology Sequences and is a prerequisite for the Digital Electronics course. It is strongly recommended for students interested in the 5 Credit Technology Sequences, Principles of Engineering, transportation, architecture, engineering and communications as well as those with an interest in robotics. ½ Regents Credit MHS

Digital Electronics (Spring) is a hands-on course that allows students to explore an important and rapidly growing field. Students will build and experiment with examples of circuits considered to be the “building blocks” of the information age. The topics for study include binary code, diodes, transistors, decision-making gates, logic circuits and related areas necessary for understanding the digital circuits and systems found in computers, transportation, entertainment devices and many other areas of our lives. This course is the part of the many 5 Credit Technology Sequences and is strongly recommended for students interested in the Principles of Engineering, transportation, architecture, engineering and communications as well as those with interest in robotics. Prerequisite: Electricity/Electronics ½ Regents Credit MHS

Engineering Methods

This new interdisciplinary STEM course will be co-taught by a science and technology education teacher. Junior and senior students will use a professional software program (MATLAB) to solve authentic engineering problems in the workplace environment. This is a project-based course in which students will work in teams to develop multidisciplinary products. Students will apply engineering principles, integrate the use of MATLAB software with an emphasis on physical science applications and develop technical communication skills through product design. This course is a required freshman course for all Hofstra engineering students. In addition, most engineering programs require a similar course integrating MATLAB software as a tool for solving engineering problems as a first year course. Students interested in college credit must apply to Fred DeMatteis School of Engineering and Applied Science - Hofstra University. Upon successful completion, students will be granted 3 credits. This course meets for one period daily. 1 Regents Credit/MHS

Optional: 3 semester hours through The Fred DeMatteis School of Engineering and Applied Science at Hofstra University

Graphic Communications - Introduction to Photoshop

Students learn to use the Adobe Photoshop software program. Adobe Photoshop is the industry standard in the field of graphic design and photo editing. This is a hands-on, project-oriented course in which students learn real world skills and produce professional quality images and documents. Students learn Adobe Photoshop basics such as the toolbox, palettes, menus, and the options bar. Students also learn graphic design concepts to create logos, postcards, magazine covers and more. There is no prerequisite for this course and it is open to students in grades 10-12. ½ Regents Credit MHS

Model and Set Design/Set Construction

An interdisciplinary (STEAM) class using skills of drawing, design, model making, fabrication and installation to support theatrical productions and community service projects. Students will learn model making and constructing set design from an Art and Technology teacher using the equipment from both departments and learning skills from both departments. This is a full year course. Students will receive ½ credit in art and ½ credit in Technology education. ½ Regents Credit Art/MHS ½ Regents Credit Tech/MHS 1 Regents Credit/MHS
Power and Energy Applications

Explore the world of power and energy technologies found in our homes, transportation and commercial industries by means of hands-on activities. Students will design, build and test working models of power and energy conversion devices through in-class competition and lecture. Topics such as wind power, alternative fuels, fossil fuels, solar energy, mechanical advantages and “Green Technology” will be explored. Students will be introduced to careers in the energy industry with each area of study. Through use of the Systems Model, similar to the scientific method, students will be introduced to a method of problem solving appropriate to energy technologies.

1 Regents Credit
MHS

College Principles of Engineering

What is an engineer? How does an engineer solve design problems? Principles of Engineering will, by means of hands-on activities, provide students with answers to these questions. Utilizing “real world” case studies, students will be introduced to the principles, skills and techniques applied by those in the field of engineering. Students will examine the dynamics of kinetic energy, loads, and the methods of distributing forces in ways that allow us to build functional and useful buildings, bridges and vehicles. Students will be introduced to the study of material science and will learn how different materials respond to loads and stresses as they provide solutions to engineering problems. Additional topics will include the structure of airfoils used in modern aircraft, robotics, alternative energy fuels and truss design and construction. Students have the option of applying for 3 college credits through Farmingdale State College’s University in High School program.

1 Regents Credit/MHS
Optional: 3 College Credits

Robotics

Robotics incorporates a complete system of planning and development to the final production of a product. In this exciting, hands-on course students will work on teams to design, produce, build, test, and evaluate products such as a robot programmed to perform specific goals.

1 Regents Credit
MHS

Production Systems (Fall) and Residential Structures (Spring)

Production Systems (Fall) is an introduction to the methods and materials utilized by the manufacturing and construction industries. Students will be introduced to these processes as they “mass produce” a class designed product. The students will also be introduced to the materials, tools, and technologies of residential and light construction, providing them with a broad view of many possible future careers. This course may be used to fulfill the Systems Core requirement for a technology sequence.

½ Regents Credit
MHS

Residential Structures (Spring) will introduce the student to the many systems and skills involved in the construction of residential housing. Course content will provide an introduction to construction materials, architectural planning, construction finance and actual hands-on experience in the trades of framing, roofing, siding, plumbing, electrical, and drywall installation.

½ Regents Credit
MHS

Technical Drawing

Technical Drawing will introduce the student to the language designers, engineers and architects use to describe their ideas. The course will employ a problem solving approach to increase the student’s ability to visualize and describe objects through two and three view drawings. This course is recommended for students interested in CAD, Principles of Engineering, Architectural Drawing, but who have NOT taken Design and Drawing for Production. This course may be used to partially fulfill the 1 credit requirement for a technology sequence.

½ Regents Credit
MHS
Transportation Systems
Transportation Systems is an overview of the aerospace, marine and land transportation systems with an emphasis on the tremendous daily benefit they provide. Students will be introduced to a variety of tools and equipment through hands-on design projects as they explore the three categories of transportation (ex. design and build a scaled down dragster, design and build a scaled down boat hull). During this course students will be introduced to careers in the transportation industry with each area of study as well as history and landmark events that have taken place. Through use of the Systems Model, similar to the scientific method, students will be introduced to a method of problem solving appropriate to transportation systems. Transportation systems is highly recommended as background for advanced transportation course work and is required for students seeking a five-credit technology sequence (Transportation Cluster). This course may be used to fulfill the Systems Course requirement for a technology sequence.

½ Regents Credit
MHS

Video Game Design
This full-year high school elective will afford students the opportunity to learn computer gaming and programming in a 3D, object-oriented environment utilizing Unreal Development Kit software. The course will integrate business concepts including marketing, consumer research, critical problem-solving, collaboration and management to complement acquired technical skills.

1 Regents Credit
MHS

Video Production I (Fall) and Video Production II (Spring)

Video Production I (Fall) will introduce students to the rapidly expanding field of video production technology and related career opportunities. Classroom instruction will include discussions concerning the planning and comprehensive script writing that must be done before a video production can be made. We will use digital cameras, electronic editing techniques and methods for image transfer to electronic storage media. The motivated student will achieve the most success because a significant amount of work is done outside of the classroom. A diverse variety of assignments is included to challenge students to complete high quality productions.

½ Regents Credit
MHS

Video Production II (Spring) will expand upon skills introduced in Video Production I. Students will devote more attention to script writing and pre-production planning, including filming locations and other logistical concerns. Camera techniques will be examined and will include various shooting angles, multi-camera usage and mobile cameras. Students will achieve a higher standard of editing techniques intended to improve the quality and appeal of their productions. These will include, but are not limited to, wipes, dissolves and special effects as they are used in television, commercial productions and motion picture production.

½ Regents Credit
MHS

Web Page Design I (Fall) and Web Page Design II (Spring)

Web Page Design I (Fall) enables students to learn how to design, create and publish web pages. Students create web pages using HTML (the language of the Internet code) and a variety of tools such as Adobe Photoshop. This is a hands-on project oriented course in which students learn real world skills and produce professional looking websites. Students learn file management fundamentals, how the Internet works, and CSS to format web page elements. There is no prerequisite for this class and it fulfills the half credit computer course requirement.

½ Regents Credit
Ames/MHS

Web Page Design II (Spring) is a cutting-edge course that is built around professional web design development software. Students learn industry standard skills, and create and manage web sites like professionals using software such as Dreamweaver, Fireworks, and Flash. Students learn about the design process and how to use programs in an integrated fashion to create eye-catching website layouts. (This course can also be taken individually as an alternate-day course.) Prerequisite: Web Page Design

½ Regents Credit
MHS