

**NORTHEAST METRO TECH  
PROGRAM OF STUDIES  
2018-2019**



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**The Northeast Metropolitan Regional Vocational School District strives to provide a safe, respectful, and supportive learning environment in which all students can thrive and succeed in its school. The Northeast Metropolitan Regional Vocational School District prohibits discrimination on the basis of disability, race, color, sex, gender identity, religion, national origin, sexual orientation, or homelessness and ensures that all students have equal rights of access and equal enjoyment of the opportunities, advantages, privileges, and course of study.**

## **Mission Statement**

Believing that all students are capable of learning, Northeast Metropolitan Regional Vocational School through the integration of the efforts of its communities, parents, administration, faculty, students and staff is committed to supplying to its students a rigorous academic and career/technical education in an open, diverse, and supportive environment.

## **Philosophy**

We support the development of students who will strive to attain job skills beyond the entry level, become life-long learners, and succeed in both their career and educational pursuits after graduation. We encourage all students to share in the responsibility of their education and the consequences of their actions while enjoying the rewards of their efforts.

Our communities have diverse social, cultural, economic, and educational backgrounds. Our student body reflects this diversity. We respect and welcome this diversity and the human differences that make our school, community, and country a place of individual freedom and equal opportunity for advancement.

Our communities also provide a wide range of employment opportunities in the business, technical, service, construction, manufacturing, and health occupations. We are committed to providing students with the opportunity to acquire the career/technical and academic skills needed for productive employment in these areas and actively pursue the involvement of employers in our educational programs.

We bring education beyond the classroom walls and into the community. By establishing in our students a pattern of community involvement, we seek to enhance each student's personal growth and instill the importance of the individual's contribution to the community, country, and world.

## **Northeast is committed to:**

- Create a community of learners in a safe and positive environment.
- Prepare students for productive employment and /or continuing education.
- Develop student pride in themselves, their family, school, work, community, and country.
- Provide a practical application of knowledge for optimum achievement through the integration of academic, career and technical education.
- Promote professional development for members of the staff to encourage exemplary teaching and motivated learning.
- Advance career/technical programs that offer students meaningful related experiences through state-of-the-art technology and cooperative education.
- Provide a comprehensive academic program that focuses on the Massachusetts Frameworks and allows every student to advance according to his/her ability.
- Advocate student participation in community service projects and co-curricular activities.
- Counsel students on appropriate career choices and options based on their capabilities and employability skills that meet the needs of business and industry.
- Continue to strengthen the partnership between the school and the community.
- Provide the experiences needed to develop students with the career/technical, academic, social, cultural and civic skills needed to be productive citizens in today's global community.

# NORTHEAST METRO TECH HIGH SCHOOL

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Mr. David DiBarri  
Superintendent-Director

Dr. Carla Scuzzarella  
Principal/Deputy-Director

## 2018-2019 SCHOOL PROFILE

Northeast Metro Tech High School is a four year vocational high school. The Northeast Metropolitan Regional Vocational School District is comprised of twelve communities that send to our school students of diverse social, cultural, economic, and educational backgrounds. We understand this diversity and strive to provide vocational, academic, physical, social, ethical, moral, and emotional development through our programs.

The school program operates on trimesters with a rotating block schedule that alternates between academic and vocational studies weekly. Total enrollment is approximately 1200 students. After a Vocational Exploratory Program in Grade 9, students select from sixteen vocational areas and begin a three year vocational program in Grade 10 that results in the attainment of a Certificate of Vocational Proficiency along with a High School Diploma. All students must meet State of Massachusetts academic standards to earn a High School Diploma from Northeast Metro Tech High School. Advanced Placement, Honors and College Placement classes are offered in major academic areas. Rank in class is computed for all students at the end of the junior year using weighted grades. Final rank is determined at the end of the senior year on the same basis.

### ADMINISTRATIVE FACULTY

Tracey O'Brien	Administrator of Student Services
Victoria Colaiani	Administrator of Special Education
Nathan Lamar	Academic Program Coordinator
Cathy Bryant	Vocational Dean
John O'Brien	Vocational Dean
Rick Vanasse	Vocational Dean
James Picone	Financial Director

### GUIDANCE DEPARTMENT

Amy Driscoll	Adjustment Counselor
Maira Mejia	Bi-lingual Counselor
Dina Baratta	Adjustment Counselor
Catherine Horkan	Adjustment Counselor
Alison Fornash	Adjustment Counselor
Jean Mills	Career Counselor

### **Class of 2017 – 300 Students**

**CEEB / ACT CODE NUMBER: 222171**

Accredited by New England Association of Schools and Colleges

### Student Post Graduate Plans:

Four Year Public College	13.7%
Two Year Public College	21.7%
Four Year Private College	16.4%
Other Post-Secondary	5.4%
Employment	38.1%
Military	2.7%
Other	2.0%

# General Information

## ***Admissions***

**Applications are due March 1<sup>st</sup>**  
to the Northeast Admissions Office.  
The Admissions Policy may be found on page:  
For more information or an online application visit:  
<http://www.northeastmetrotech.com/admissions/>

## ***Academic Programs***

English Language Arts  
English Language Learner Education  
Mathematics  
Science  
Social Sciences/History  
World Language  
Wellness

## ***Career Technical Programs***

Automotive Collision Repair & Refinishing  
Automotive Technology  
Business Technology  
Carpentry  
Cosmetology  
Culinary Arts  
Dental Assistant  
Design & Visual Communications  
Drafting & Design  
Early Childhood Education  
Electricity  
Health Assistant  
Heating, Ventilation & Air Conditioning  
Metal Fabrication  
Plumbing & Pipefitting  
Robotics & Automation  
Grade 9 Vocational Exploratory Programs  
Related Vocational Technical Studies

## ***Extra-Curricular Program***

**Interscholastic Athletics:** Baseball, Basketball, Cheerleading, Cross Country, Football, Golf, Hockey, Lacrosse, Soccer, Softball, Swimming, Track & Field, and Volleyball  
**Activities:** Student Government, Skills USA, National Honor Society, National Vocational Technical Honor Society, Tech Prep, SADD, Equality Club, Peer Mentoring, Mediation & Support Programs, Chorus Club, Drama Club, DECA

### ***Career Development/Career Center***

Career Development at Northeast assists students in transitioning into the school, exploring career opportunities and developing career plans for high school and beyond. It is a school-wide goal that all students transition out of Northeast on a clearly defined career path. The **Career Center** is the focal area for a well-planned four year career development program that prepares all Northeast students for their individually chosen career paths. The following stages are critical parts of Northeast's career development program:

SELF-ASSESSMENT  
CAREER EXPLORATION  
DEVELOPING A CAREER GOAL  
MARKETING STUDENT SKILLS

### ***Cooperative Education Program***

The Cooperative Education Program is both a school-based and work-based program. Co-op students will continue to receive their academic instruction in a traditional classroom setting. However, during students' shop weeks, eligible students may be employed by an area business. Eligible students will perform work that is both suited to their qualifications and is aligned with the State competencies for their grade in their career technical area. Co-op students must meet Northeast's prerequisites before entering the program.

### ***S.T.E.M. Academy (Science, Technology, Engineering, Math)***

Northeast's S.T.E.M. program has been designed by our talented faculty members who come from diverse engineering experiences and backgrounds. The team's goal is to offer select senior students an applied science focused experience utilizing raw materials and new technologies. The students will learn about the many interesting disciplines of science, engineering, and mathematics while participating in engaging hands-on activities. For example, students will learn about the global GPS network in the science classroom, then students will take that learning "into the field" and participate in a high tech scavenger hunt in the adjacent Breakheart Reservation. The goal is to provide experiences that will help to develop an intellectual understanding of these core subjects while preparing students for opportunities for future study and work. This new understanding will challenge STEM students to utilize higher order thinking skills for future careers and college programs. STEM ACADEMY students will actively participate in STEM related field trips and will be offered the following courses:

GR 12 SCIENCE ELECTIVE: ENGINEERING TECHNOLOGY (H) – B WEEK

GR 12 STEM VOCATIONAL PROGRAM: ONE DAY PER CAREER TECH WEEK -A WEEK

### ***Tech Prep***

The Tech Prep program is a coordinated effort by Northeast, local community colleges, technical colleges, other post-secondary institutions, unions, local business and industry. Tech Prep is an educational plan, structured according to the student's specific career goals, that rewards students for excellent achievement in their high school courses with work credits or college credits/advanced standing. For further information, including but not limited to Northeast's articulation agreements, visit:

[www.northeastmetrotech.com/guidance/career-planning/articulation-agreements.html](http://www.northeastmetrotech.com/guidance/career-planning/articulation-agreements.html)  
[www.northeastmetrotech.com/guidance/career-planning/career-pathways.html](http://www.northeastmetrotech.com/guidance/career-planning/career-pathways.html)

# Graduation Requirements

Northeast Metro Tech operates on trimester, 57 minute block schedule that provides academic instruction and vocational instruction. The rotation continues throughout the school year. The school day begins at 7:45 AM and ends at 2:30 PM. It is the school's philosophy that well-rounded individuals who are ready to become responsible and contributing members of society must be prepared in academic, as well as technical areas.

Northeast Metro Tech graduates of the Class of 2021 and beyond must accumulate a minimum of 276 credits out of a possible 288 credits. The distribution of required credits is as follows:

4 years of English	24 Credits
4 years of Mathematics	24 Credits
3 years of Science	18 Credits
3 years of Social Studies (US History I and II req.)	18 Credits
1 year of Vocational Exploratory (Grade 9)	*30 Credits
Vocational Shop (Grade 9)	6 Credits
3 years of Vocational Related Theory	18 Credits
3 years of Vocational Shop	102 Credits
Physical Education/Health	8 Credits
World Language and Other Electives	40 Credits

*\*Each of the fifteen Freshman Exploratory is assigned 2.0 credits.*

## **Minimum Promotion Criteria**

- Students at Northeast receive a numerical grade for all academic subjects each marking period. **The passing grade is 65. No student will be eligible for summer school with a failing grade below 50.**
- Students will not be promoted to the next grade if they are deficient twelve (12) credits at the time of entry to a new school year.
- Students in grades 10 and 11 must pass their vocational shop and vocational related class to be promoted to the next grade.
- Successful completion of a Senior project is a requirement for Graduation.
- Students are required to pass all subjects in their Senior Year to graduate, including physical education and electives.
- All students must fulfill the MCAS examination requirements in the areas of English, Math, and Science in accordance with federal and state standards as a prerequisite for receipt of a Northeast Metro Tech High School Diploma.
- Courses completed in Summer School (SS) or through a Credit Recovery (CR) Program will be indicated as such on transcripts.
- All medically excused grades not completed by the end of the school year will be converted to zeros.

## **Advanced Placement (AP) Program at Northeast**

Advanced Placement (AP) classes are courses that meet a prescribed syllabus developed by the College Board. These courses represent **college level study** and prepare students to take an examination each May. The goal of Northeast's AP Program is to prepare students for post-secondary education by honing their analytical skills and advancing in-depth knowledge in their coursework. Northeast offers the following AP courses:

Biology

Calculus AB  
English Language & Composition  
English Literature & Composition  
Statistics

### **Grade Point Average (GPA)**

What is GPA?

Grade Point Average (GPA) is the manner in which high schools and many post-secondary educational institutions numerically represent academic performance on a student's transcript. Northeast uses the table below, plus a formula for including the Vocational program grades.

Why should you care about GPA?

If you are thinking of continuing your education after high school, you will be required to have a certain GPA to be considered as an applicant at many post-secondary institutions.

### GPA Scale

<b>Percentile</b>	<b>College Prep GPA</b>	<b>Honors GPA</b>	<b>AP GPA</b>
97-100	4.3	4.8	5.3
93-96	4.0	4.5	5.0
90-92	3.7	4.2	4.7
87-89	3.3	3.8	4.3
83-86	3.0	3.5	4.0
80-82	2.7	3.2	3.7
77-79	2.3	2.8	3.3
73-76	2.0	2.5	3.0
70-72	1.7	2.2	2.7
67-69	1.3	1.8	2.3
65-66	1.0	1.5	2.0
64 and Below	.4	.9	1.4

### **Class Rank**

Class rank is determined by a student's grade point average. The determination of the Valedictorian and the Salutatorian will be made at the end of the second (2<sup>nd</sup>) trimester, senior year.

The official GPA and Class Rank are calculated at the end of the Junior year.

### **Grading Policy**

It is the philosophy of Northeast Metro Tech High School that students respond more positively to the opportunity for success than to the threat of failure. We seek, therefore, through our academic and vocational programs to make achievement both recognizable and possible for our students. We emphasize achievement in our process of evaluating student performance. We report achievement through the use of numerical grades. The primary purpose of grading is to report to students and their parents the extent to which the student has mastered the content of a course as defined by the course objectives. Grades also serve to promote a process for continuous evaluation of student performance and provide a basis for bringing about changes in student performance if such change is necessary.

Course expectations for each academic and vocational course shall be provided to every student within one week of the beginning of a course in order to inform both the students and the parents of



each teacher's expectations and the responsibilities of the student relative to successful completion of the course. Teachers will take time to explain to students the course objectives, the expectations for student performance and responsibilities, and the evaluation system the teacher will use to determine to which extent the student has achieved the course objectives. The teacher shall make clear to the students at appropriate intervals and the parents as necessary, the basis upon which the grades are earned.

Grades are based on evidence of the attainment of the instructional objectives of the course. The extent to which the student has attained the objectives shall be determined by his/her performance on assessment measures developed, administered and corrected by the teacher. **The minimum passing grade for all courses at Northeast is a 65.**

### ***Course Selection***

Northeast Metro Tech High School runs a trimester schedule. In the academic subject areas a complete course includes Parts A, B and C of the class. It is EXPECTED that students complete Parts A, B and C for each class. Most ELECTIVE classes are single trimester courses.

College Preparatory courses are open to all students and may include a wide range of abilities and interests. Departments also offer courses that are designated as Honors or Advanced Placement (AP). **ALL** courses should hold high expectations for students as well as provide students with opportunities to think critically and broadly about subject matter.

Courses designated as Honors are characterized by an accelerated pace, an intensive examination of content, or both. Honors courses demand substantial independent work, extensive use of supplementary materials and analysis and synthesis of ideas and information. Courses designated as Advanced Placement (AP) are college-level courses that follow a national curriculum established by the College Board. AP courses also demand substantial independent work, extensive use of supplementary materials and primary source documents, sophisticated analysis and synthesis of ideas and information, and often have summer/vacation work.

### ***Course Changes***

Course changes are disruptive to the continuity of a student's educational program. For this reason, the course-selection process conducted each spring is done so with great care and with input from teachers and guidance counselors. Students will have an opportunity to meet individually with his/her guidance counselor to select courses for the next school year.

Should extraordinary circumstances warrant a change in a student's schedule, the following criteria must be met prior to course changes:

- Course change requests will only be considered for students requiring a change in the level of their course (moving up or down in the level of their course placement).
- Course changes will not be made due to student/parent request for specific teachers.
- Course changes will only be implemented at the end of the grading period.
- The student must have stayed after-school for a minimum of two extra help sessions with the teacher and completed all homework assignments.
- The course change requested has been reviewed and signed by the teacher and the guidance counselor and approved by the administration.

### ***Special Education Services***

In accordance with Chapter 766 of the Massachusetts General Laws and the Federal Law, IDEA, Northeast Metro Tech High School's Special Education program provides services for students who have a documented educational disability, are unable to progress effectively within the regular education program, and are in need of special education services. Special Education staff work closely with students, teachers, and parents to monitor student progress and to modify and support the regular academic/vocational program to meet student needs.

Services provided include academic support, study skills instruction, testing, assessment and evaluation of a student's learning strengths and weaknesses, and direct instruction when appropriate. When possible, Special Education teachers team with classroom teachers to provide appropriate instruction in regular classes for students with special educational needs.

Each student's individual educational plan is reviewed annually, on or before the anniversary date of its implementation to determine student progress. Any parent or staff member may make a 766 referral for a special education evaluation after all appropriate regular education options as planned by the Student Assistance Team (SAT) have been implemented.

### ***Accommodation Plans (504)***

Section 504 of the Rehabilitation Act of 1973 prohibits discrimination against persons with a handicap in any program receiving federal financial assistance. The act defines a person with a handicap as anyone who:

- Has a mental or physical impairment, which substantially limits one or more major life activities (major life activities include activities such as caring for one's self, performing manual tasks, walking, seeing, hearing, speaking, breathing, learning, and working);
- Has record of such impairment; or
- Is regarded as having such an impairment

In order to fulfill its obligations under Section 504, the Northeast Metro Tech School District recognizes a responsibility to avoid discrimination in policies and practices regarding personnel and students. No discrimination against any person with a handicap will knowingly be permitted in any of the programs and practices in the district. The school district has specific responsibilities under the Act, which include the responsibility to identify, evaluate, and, if the child is determined to be eligible under Section 504, to afford access to appropriate accommodations to enable access to educational services.

## SAMPLE COURSE CHANGE REQUEST

Date of Request: \_\_\_\_\_ Initiated By: \_\_\_\_\_

Student Name: \_\_\_\_\_ ID#: \_\_\_\_\_ Grade: \_\_\_\_\_ HR/Shop: \_\_\_\_\_

Counselor: \_\_\_\_\_

Course Change: From: \_\_\_\_\_ Level: \_\_\_\_\_

To: \_\_\_\_\_ Level: \_\_\_\_\_

Current teacher comments/recommendations:

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Teacher signature: \_\_\_\_\_ Date: \_\_\_\_\_

Counselor comments/recommendations: (Impact on Other Courses or Graduation Requirements)

\*Please see reverse side for college entrance requirements\*

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Counselor signature: \_\_\_\_\_ Date: \_\_\_\_\_

**NOTES TO PARENTS/GUARDIANS: Prior to course changes being considered, the following must be met:**

1. **Student must attend class regularly.**
2. **Student must come to class prepared (notebook, pencil, book, homework, etc.)**
3. **Student must actively participate in class activities.**
4. **Student must make up all work missed due to absences.**
5. **Student must return after school for extra help with the teacher at least three times. (Each teacher has a 2:30pm-3:30pm extra help session one afternoon per week)**

\_\_\_\_\_ I do not wish to have my student's course changed at this time.

\_\_\_\_\_ I approve my student's course change.

Parent/Guardian signature: \_\_\_\_\_ Date: \_\_\_\_\_

\_\_\_\_\_ **COURSE CHANGE APPROVED**      \_\_\_\_\_ **COURSE CHANGED NOT APPROVED**

Admin for Student Services signature: \_\_\_\_\_ Date: \_\_\_\_\_

## Preparing for the Future

The Guidance Department assists students and their parents with plans for the future. Counselors provide information on high school graduation requirements and on general college admission requirements. The counselors will assist the students in formulating a list of colleges to which they will apply, and write recommendations for students upon request. Counselors send transcripts upon request and receipt of appropriate fees. In addition, they will provide information on tests such as the Scholastic Aptitude Test (SAT) and the American College Test (ACT). The counselors host a College Night and a FAFSA/MEFA (Financial Planning for College) Workshop for parents and students during each school year.

### *Types of Schools and Colleges*

There are many types of institutions for students and parents to consider. They may be classified as follows:

1. Degree-granting institutions offering curricula generally requiring four school years to complete
2. Junior colleges, community colleges and technical institutes offering programs of two years duration
3. A large class of schools, giving vocational courses from six weeks to several years in length

### *College Requirements*

The requirements for admission to colleges vary so greatly in detail that it is impossible to set down guidelines that may be trusted to qualify a candidate for all colleges. However, generalizations may be made.

Schools and colleges usually require a candidate be prepared in seventeen units of work. A unit as presented to a college from Northeast Metro Tech High School consists of 7.5 credits of work in a subject for which study outside of class is required. For example, 7.5 credits (full year) of English is one unit. For subjects that meet less frequently throughout the year, a fraction of credit is allowed. The grades required in the seventeen units vary among the schools and colleges.

The **17 Units** are courses usually required for consideration for admission to a four-year college/university (see table on next page).

## **Massachusetts State University System and UMass Minimum Admissions Requirements**

The admissions standards for the state universities and UMass emphasize a strong academic high school background so that the students enter college ready to learn. These standards represent minimum requirements; meeting them does not guarantee admission, since campus officials consider a wide range of factors in admissions decisions. Students shall have fulfilled all requirements for the high school diploma or its equivalent upon enrollment. *It is important to note that admissions standards for the state's colleges differ. Community colleges may admit any high school graduate or GED recipient.*

### *Freshman Applicants*

The new admissions standards for freshmen applicants have two main parts:

1. 17 required academic courses.

### **ACADEMIC COURSE REQUIREMENTS**

Seventeen college preparatory courses distributed as follows are required. (A course is equivalent to one full school year of study. Courses count toward the distribution only if passed.)

<b>English</b>	<b>4 courses</b>
<b>Mathematics</b>	<b>4 courses</b> ( <i>Algebra I &amp; II, Geometry or Trigonometry</i> )
<b>Sciences</b>	<b>3 courses</b> ( <i>including 2 courses with laboratory work</i> )
<b>Social Sciences</b>	<b>2 courses</b> ( <i>including 1 course in U.S. history</i> )
<b>Foreign Language</b>	<b>2 courses</b> ( <i>in a single language i.e. Spanish I &amp; II</i> )
	<i>NOTE: Completion of 4 years of a single language exempts a student from the UMass Amherst Colleges of Arts and Sciences foreign language requirement.</i>
<b>Electives</b>	<b>2 Courses</b>
	<i>(Arts &amp; Humanities, Computer Sciences, or the above subjects)</i>

2. A minimum required grade point average (GPA) earned in college preparatory courses completed at the time of application. **A 3.0 is the GPA that must be achieved.**
3. Applicants must submit an SAT or ACT score.
  - a. SAT SCORES
    - i. Applicants who meet the GPA requirement do not have to use the sliding scale for admission, but still must submit SAT or ACT test scores for consideration if they are applying to a state university or UMass within three years of high school graduation.

#### *Sliding Scale*

If an applicant's GPA falls below the required minimum, a sliding scale will apply. *This scale should be used only when an applicant's GPA falls below the required 3.0 minimum for admission to the state universities or UMass.*

#### SLIDING SCALE FOR FRESHMAN APPLICANTS TO UMASS

<i>Weighted H.S. GPA</i>	<u><i>Combined SAT-I Verbal &amp; Math</i></u> <b>Must Equal or Exceed (ACT in Italics)</b>
<b>2.51-2.99</b>	<b>950 (20)</b>
<b>2.41-2.50</b>	<b>990 (21)</b>
<b>2.31-2.40</b>	<b>1030 (22)</b>
<b>2.21-2.30</b>	<b>1070 (23)</b>

<b>2.11-2.20</b>	<b>1110 (24)</b>
<b>2.00-2.10</b>	<b>1150 (25)</b>

SLIDING SCALE FOR FRESHMAN APPLICANTS TO A STATE COLLEGE

<i>Weighted H.S. GPA</i>	<u><i>Combined SAT-I Verbal &amp; Math</i></u> <b>Must Equal or Exceed (ACT in Italics)</b>
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<b>2.51-2.99</b>	<b>920 (19)</b>
<b>2.41-2.50</b>	<b>960 (20)</b>
<b>2.31-2.40</b>	<b>1000 (21)</b>
<b>2.21-2.30</b>	<b>1040 (22)</b>
<b>2.11-2.20</b>	<b>1080 (23)</b>
<b>2.00-2.10</b>	<b>1120 (24)</b>

*No applicant with a high school GPA below 2.00 may be admitted to a State University or UMass*

*Exception Allowances*

**English as a Second Language (ESL) applicants** must complete the 17 required college preparatory courses with two exceptions:

1. ESL applicants may substitute up to two college preparatory electives for the two required foreign language courses and,
2. ESL applicants may substitute up to two years of college preparatory ESL English courses for college preparatory English courses.

**Learning Disabled Applicants:** Applicants with professionally diagnosed and documented learning disabilities (documentation must include diagnostic test results) are exempt from taking standardized tests for admission to any public institution of higher education in the Commonwealth. Such students, however, must complete 17\*\* required academic courses with a minimum required GPA of 3.00 or present other evidence of the potential for academic success.

\*\*An applicant may substitute two college preparatory electives for the two required foreign language courses only if the applicant has on file with the high school results of a psycho-educational evaluation completed within the past three years that provides a specific diagnosis of a learning disability and an inability to succeed in a foreign language. Eligibility for admission is not an entitlement of admission for any applicant, including learning disabled students.

**Vocational-Technical Students** must complete 17 college preparatory courses, distributed in the same manner and with the same minimum grade point averages required of other high school graduates, with the following exceptions:

- Two vocational-technical courses may be used to fulfill the two required electives;
- Vocational-technical high school graduates who do not complete the two required college preparatory foreign language courses must complete an additional elective college preparatory course, for a total of three such courses, and **satisfy one of the following options:**
  - Complete at least one Carnegie unit of foreign language;
  - Complete a fourth Carnegie unit of mathematics or science, which need not be a laboratory course; or
  - Complete one Carnegie unit of computer science

## COURSE AND CREDIT OPTIONS BY GRADE

GRADE 9	
COURSE	CREDITS
English	8.0/6.0
Mathematics	8.0/6.0
Science	8.0/6.0
World History	6.0
Elective	2.0
Health	2.0
Physical Ed	2.0
Vocational Exploratory	30.0
Vocational Term 4	6.0
<b>Total:</b>	<b>72</b>
GRADE 10	
COURSE	CREDITS
English	8.0/6.0
Mathematics	8.0/6.0
Science	6.0
US History I	6.0
Electives	4.0
Physical Ed	2.0
Related Theory	6.0
Vocational Shop	30.0
<b>Total:</b>	<b>72</b>
GRADE 11	
COURSE	CREDITS
English	6.0
Mathematics	6.0
US History II	6.0
Science or Elective	6.0
Electives	4.0
Physical Ed	2.0
Related Theory	6.0
Vocational Shop	36.0
<b>Total:</b>	<b>72</b>
GRADE 12	
COURSE	CREDITS
English	6.0
Mathematics	6.0
Science or Elective	6.0
Social Studies or Elective	6.0
Electives	10.0
Physical Ed	2.0
Related Theory	6.0
Vocational Shop	36.0
<b>Total:</b>	<b>72</b>

Total required credits for Classes of 2019 and 2020 is 190 out of a possible 200

Total required credits for Class of 2021 and beyond is 276 out of a possible 288

# Academic Program

## English Language Arts

The English Language Arts program at Northeast Metro Tech High School is geared to promote the development and increase the range of skills necessary in the area of communication with regard to writing, reading, listening and speaking. It is designed so that all students will achieve competency in the areas of discussion and presentation, vocabulary development, standard written English and composition, and reading comprehension. Through the curriculum, students are exposed to the many genres of literature – American, British, and World – prior to graduation. Students are required to demonstrate facility and competency in writing in the persuasive, narrative, descriptive, creative, and explanatory modes. Students must also demonstrate their ability to write critically about literature. The writing process is incorporated into all courses offered by the department.

### **1111 (A,B,C) Honors English 9**

**6.0 credits**

The focus of instruction in English 9 is on enhancing skills in the areas of: reading comprehension, vocabulary, grammar and conventions and study habits/meeting deadlines. The Grade 9 theme addresses a “A Child’s-Eye View” including topics such as exploring the ways of the world, expanding horizons, analyzing the structure of family, and the concepts of trust, betrayal, and mortality. The literature program includes novels, plays, short stories, essays and poetry supplemented by appropriate audio-visual materials. The composition component stresses adherence to a “5 paragraph” model where a strong thesis/topic is developed, supporting details are discovered, examined and effectively organized, and a logical conclusion is presented. Research writing (including but not limited to documentation and plagiarism) will also be covered. Students in this course will be supported to exercise serious reflection, demonstrate creativity, work independently and effectively manage time. Readings and assignments will include an emphasis on MCAS preparation throughout the course. Honors courses move at a faster pace than College Prep courses and will include additional assignments.

**Prerequisite:** Placement testing

### **1121 (A,B,C) CP English 9**

**8.0 credits**

The focus of instruction in English 9 is on enhancing skills in the areas of: reading comprehension, vocabulary, grammar and conventions and study habits/meeting deadlines. The Grade 9 theme addresses a “A Child’s-Eye View” including topics such as exploring the ways of the world, expanding horizons, analyzing the structure of family, and the concepts of trust, betrayal, and mortality. The literature program includes novels, plays, short stories, essays and poetry supplemented by appropriate audio-visual materials. The composition component stresses adherence to a “5 paragraph” model where a strong thesis/topic is developed, supporting details are discovered, examined and effectively organized, and a logical conclusion is presented. Research writing (including but not limited to documentation and plagiarism) will also be covered. Students in this course will be expected to develop more independent work habits and should anticipate taking responsibility for actively participating in class, asking clarifying questions, efficiently recording critical information, and completing assignments in a timely manner. MCAS preparation will be emphasized throughout the course.

**Prerequisite:** Placement testing

### **1211 (A,B,C) Honors English 10**

**6.0 credits**

The Grade 10 curriculum revolves around the theme of “Ins and Outs”; discovering how/where one



might fit in a society, dealing with expectations of others, building dreams, watching dreams crumble and then rebuilding, discovering support networks, learning to integrate and balance elements of the Id/Ego/Superego. The focus of instruction in English 10 is on enhancing skills in the areas of reading comprehension, vocabulary, grammar and conventions and study habits/meeting deadlines. The literature program includes novels, plays, short stories, essays, and poetry, supplemented by appropriate audio-visual materials. The composition component stresses adherence to a “5 paragraph” model where a strong thesis/topic is developed, supporting details are discovered, examined, and effectively organized, and a logical conclusion is presented. Research writing assignments will be given.

Students in this course will be supported to exercise serious reflection, demonstrate creativity, work independently and effectively manage time. Honors courses move at a faster pace than College Prep courses and will include additional assignments. MCAS preparation will be emphasized throughout the course.

**Prerequisite:** Grade of 80 or better in English 9 (CP or H) and/or teacher recommendation

### **1211 (A,B,C) CP English 10**

**8.0 credits**

The Grade 10 curriculum revolves around the theme of “Ins and Outs”; discovering how/where one might fit in a society, dealing with expectations of others, building dreams, watching dreams crumble and then rebuilding, discovering support networks, learning to integrate and balance elements of the Id/Ego/Superego. The focus of instruction in English 10 is on enhancing skills in the areas of reading comprehension, vocabulary, grammar and conventions and study habits/meeting deadlines. The literature program includes novels, plays, short stories, essays, and poetry, supplemented by appropriate audio-visual materials. The composition component stresses adherence to a “5 paragraph” model where a strong thesis/topic is developed, supporting details are discovered, examined, and effectively organized, and a logical conclusion is presented. Research writing assignments will be given.

Students in this course will be supported to exercise serious reflection, demonstrate creativity, work independently and effectively manage time. MCAS preparation will be emphasized throughout the course.

**Prerequisite:** Successful completion of English 9

### **1302 (A,B,C) Advanced Placement English Language & Comp**

**6.0 credits**

This college level course for Juniors focuses upon the areas of reading, literary analysis, writing, grammar/usage, oral communication and research, so that students can work through the curriculum at a faster pace and at a greater level of sophistication than at the College Prep or Honors levels. The course engages students in becoming skilled readers of prose written in a variety of periods, disciplines, and rhetorical contexts, and in becoming skilled writers who compose for a variety of purposes. Students will write in various forms – narrative, expository, and argumentative – on many different subjects from personal experiences to public policies, from imaginative literature to popular culture. Students will also be expected to read both primary and secondary sources, to synthesize material from these texts in their own compositions, and to cite source material using conventions recommended by professional organizations such as the Modern Language Association. The primary goal of the course is “to enable students to read complex texts with understanding and to write prose of sufficient richness and complexity to communicate effectively with mature readers.” (College Board) **Summer work is required for all students choosing this course.**

**Prerequisite:** Grade of 80 or better in English 9 and 10 Honors, and teacher recommendation or permission of the instructor.

### **1312 (A,B,C) Honors English 11**

**6.0 credits**

During Grade 11 students will explore “Dystopia;” analyzing worlds coming apart, devising survival/coping skills, developing id/ego/superego (complete personality), as well as balancing the

needs of the individual vs. the needs of society and analyzing law versus power & influence. The focus of instruction in English 11 is on enhancing skills in the areas of reading comprehension, vocabulary, grammar and conventions and study habits/meeting deadlines. The literature program includes novels, plays, short stories, essays, and poetry, supplemented by appropriate audio-visual materials. The composition component stresses adherence to a “5 paragraph” model where a strong thesis/topic is developed, supporting details are discovered, examined, and effectively organized, and a logical conclusion is presented. Research writing assignments will be given. SAT/Accuplacer preparation will be emphasized throughout the course.

Students taking this course will be supported to exercise serious reflection, demonstrate creativity, work independently, and effectively manage time. Honors courses move at a faster pace than College Prep courses and will include additional assignments.

**Prerequisite:** Grade of 80 or better in English 10 (CP or H) and/or teacher recommendation.

### **1322 (A,B,C) CP English 11**

**6.0 credits**

During Grade 11 students will explore “Dystopia”; analyzing worlds coming apart, devising survival/coping skills, developing id/ego/superego (complete personality), as well as balancing the needs of the individual vs. the needs of society and analyzing law versus power & influence. The focus of instruction in English 11 is on enhancing skills in the areas of reading comprehension, vocabulary, grammar and conventions and study habits/meeting deadlines. The literature program includes novels, plays, short stories, essays, and poetry, supplemented by appropriate audio-visual materials. The composition component stresses adherence to a “5 paragraph” model where a strong thesis/topic is developed, supporting details are discovered, examined, and effectively organized, and a logical conclusion is presented. Research writing assignments will be given. SAT/Accuplacer preparation will be emphasized throughout the course.

Students will be expected to develop more independent work habits and should anticipate taking more responsibility for actively participating in class, asking clarifying questions, efficiently recording critical information, and completing assignments in a timely manner.

**Prerequisite:** Successful completion of English 10

### **1402 (A,B,C) Advanced Placement English Literature & Comp.**

**6.0 credits**

This college level course seeks to engage students in careful reading and critical analysis of literary texts. Students will have an intensive study of representative works from both British and American authors in several genres from the sixteenth century to contemporary times. Throughout the year students are expected to continue to develop their knowledge of literary terms related to prose and poetry; demonstrate how the parts and techniques of a literary work contribute to the meaning of the work; actively participate in high level analytical discourse; and create cogent, sustained and sophisticated expressions of analytical interpretation in written form. **Summer work is required for all students choosing this course.**

**Prerequisite:** Grade of 80 or better in English 11 Honors, and teacher recommendation or permission of instructor

### **1412 (A,B,C) Honors English 12**

**6.0 credits**

“Heroism” is the Grade 12 theme. Curriculum and instruction will support students in identifying and analyzing topics of resilience, self-reliance, independence, establishing a voice, participation in life and society, and learning how to distinguish between “just causes” vs. “lost causes.” The focus of instruction in English 12 is on enhancing skills in the areas of reading comprehension, vocabulary, grammar and conventions and study habits/meeting deadlines. The literature program includes novels, plays, short stories, essays, and poetry, supplemented by appropriate audio-visual materials. The composition component stresses adherence to a “5 paragraph” model where a strong thesis/topic is developed, supporting details are discovered, examined, and effectively organized,

and a logical conclusion is presented. Research writing assignments will be given. SAT/Accuplacer preparation will be emphasized throughout the course.

Honors level students will be supported to exercise serious reflection, demonstrate creativity, work independently, and effectively manage time.

**Prerequisite:** Grade of 80 or better in English 11 (CP or H) and/or teacher recommendation

**1422 (A,B,C) CP English 12**

**6.0 credits**

“Heroism” is the Grade 12 theme. Curriculum and instruction will support students in identifying and analyzing topics of resilience, self-reliance, independence, establishing a voice, participation in life and society, and learning how to distinguish between “just causes” vs. “lost causes.” The focus of instruction in English 12 is on enhancing skills in the areas of reading comprehension, vocabulary, grammar and conventions and study habits/meeting deadlines. The literature program includes novels, plays, short stories, essays, and poetry, supplemented by appropriate audio-visual materials. The composition component stresses adherence to a “5 paragraph” model where a strong thesis/topic is developed, supporting details are discovered, examined, and effectively organized, and a logical conclusion is presented. Research writing assignments will be given. SAT/Accuplacer preparation will be emphasized throughout the course.

Students will be expected to develop more independent work habits and should anticipate taking more responsibility for actively participating in class, asking clarifying questions, efficiently recording critical information, and completing assignments in a timely manner.

**Prerequisite:** Successful completion of English 11

*Electives*

**1739 Honors Sixties Literature**

**2.0 credits**

**1738 CP Sixties Literature**

**2.0 credits**

Students will utilize fiction and nonfiction texts, journalism, documentaries, film, poetry and music to understand the various movements that occurred within the generations. Students will further explore the social impacts of the events by reading from one or more of the following related texts: *America Dreaming: How Youth Changed America in the 60's*, *Hearts in Atlantis*, *Countdown*. Students may contract for Honors level work and credit.

**1760 Honors Creative Writing (Full Year)**

**6.0 credits**

**1761 CP Creative Writing**

**2.0 credits**

This course is designed to help students broaden their skills and talents in the strategies of writing. Focusing on initial generation of ideas, organization, and precision in word choice, class assignments will include a range of topics for exploration from autobiography to fiction to poetry. In a workshop atmosphere, students will edit and polish their own pieces as well as read and critique each other’s work. Emphasis is on individual progress. Students may contract for Honors level work and credit.

**1762 Honors Young Adult Literature**

**2.0 credits**

**1763 CP Young Adult Literature**

**2.0 credits**

Readings will include contemporary award-winning novels, and writing activities will be based on student reaction to the global conflicts and themes within the stories. Focus will be on building an appreciation for literature and encouraging student reading while examining issues facing young people around the world. Classes will promote discussion and critical thinking. Writing assignments will enhance skills required for success in core ELA classes. Students may contract for Honors level work and credit.

<b>1764</b>	<b>Honors Public Speaking</b>	<b>2.0 credits</b>
<b>1765</b>	<b>CP Public Speaking</b>	<b>2.0 credits</b>

Whether it is idle small talk, a formal address, or a raging debate, verbal communication is essential to the world around us. This class will examine the ways we communicate. Students will study public speaking and be required to write and deliver different types of speeches – informative, evocative and persuasive as a few examples. Students will also work on developing arguments while “on their feet.” Students will leave the class feeling more comfortable and confident with public forms of expression. Students may contract for Honors level work and credit.

<b>1766</b>	<b>Honors Literature to Film</b>	<b>2.0 credits</b>
<b>1767</b>	<b>CP Literature to Film</b>	<b>2.0 credits</b>

This course will focus on how people tell stories and analysis of visual versus traditional storytelling. Students will read short stories, graphic novels, and excerpts of novels to then critically view their film adaptations. Examples of literature to be studied in the course are stories by Stephen King, Rita Hayworth, and Marjane Satrapi as well as some horror and Gothic literature. Students may contract for Honors level work and credit.

## English Language Learner Education

The primary goal of the English Learner Education Program is to enable English Learners to achieve communicative and linguistic competence in English and to perform in academic content classrooms with high expectations. The courses have been structured following the WIDA Standards Frameworks. Students are placed into the appropriate level for their English language development based on ACCESS scores or results from the WIDA Model or on-line WIDA screener. Benchmark assessments have been developed in each class at each level to ensure that students are well prepared to move between levels and be successful in all of their classes at Northeast Metro Tech High School and beyond.

### **1129 (A,B,C) CP English 9 (ELL)**

**8.0 credits**

The focus of the ELL curriculum at this level is the development of English oral proficiency by increasing understanding of spoken English, building speaking skills, vocabulary, increasing confidence in speaking English, and developing correct American pronunciation. Instruction includes activities that promote listening, speaking, reading and writing skills at the basic level. In addition, hands-on-projects are also used to further develop emerging English proficiency. Classroom instruction follows the WIDA Standards for Language Arts. English language learners take an annual state English proficiency exam – ACCESS (Assessing Comprehension and Communication in English) to monitor students' progress in acquiring academic English. ACCESS scores are part of the criteria used to determine future academic language placement.

### **1229 (A,B,C) CP English 10 (ELL)**

**8.0 credits**

The focus of this ELL level curriculum is the development of English reading comprehension and emerging writing skills. Grammar is taught using a second language approach and second language texts. Oral proficiency is reinforced through class discussions, presentations, and reading aloud. The class goals are to understand spoken English, build vocabulary, and become familiar with the English language and its literature. Students develop beginning to intermediate reading and writing skills in English through short stories, poems, plays, newspaper articles, presentations and projects. Classroom instruction follows the WIDA Standards for Language Arts. English language learners take an annual state English proficiency exam – ACCESS (Assessing Comprehension and Communication in English) to monitor students' progress in acquiring academic English. ACCESS scores are part of the criteria used to determine future academic language placement.

### **1329 (A,B,C) CP English 11 (ELL)**

**6.0 credits**

In this level ELL, students study all types of literature in the form of short stories, plays, novels, essays, and poetry to further develop reading and writing skills using a second language approach. Spoken English is more fluent and great emphasis is placed on the development of clear written communication of facts and ideas from class reading assignments. The novel is studied as a literary form. A higher level of grammatical competency is expected at this level. Students in this level will begin working on the Junior/Senior Project, a graduation course. Students write a project proposal and a research paper related to their vocational area. Classroom instruction follows the WIDA Standards for Language Arts. English language learners take an annual state English proficiency exam – ACCESS (Assessing Comprehension and Communication in English) to monitor students' progress in acquiring academic English. ACCESS scores are part of the criteria used to determine future academic language placement.

**1429 (A,B,C) CP English 12 (ELL)****6.0 credits**

The main focus of this ELL course curriculum is the refining of all areas of English proficiency: listening, speaking, reading, and writing. Short stories, essays, novels, poetry and drama are studied as literary forms. An advanced level of grammatical competency and oral productions is expected in this course as students are transitioning to full English competency. It is expected that students complete the final stages of their Junior/Senior Project. Classroom instruction follows the WIDA Standards for Language Arts. English language learners take an annual state English proficiency exam – ACCESS (Assessing Comprehension and Communication in English) to monitor students' progress in acquiring academic English.

**1169 CP Reading and Writing Lab 9****2.0 credits**

This course is designed to strengthen reading and writing skills of 9<sup>th</sup> grade English Language Learners. Content will be complementary to core English curriculum consistent with the Common Core State Standards and WIDA, and may also include topics of teen interest. Prewriting strategies, outlining, drafting, and revising essays and short compositions will be a point of focus.

**1269 CP Reading and Writing Lab 10****2.0 credits**

This course will further develop reading and writing skills of the 10<sup>th</sup> grade English Language Learners. Content will be complementary to core English curriculum consistent with the Common Core State Standards and WIDA. Prewriting strategies, outlining, drafting, and revising essays and longer compositions will be a point of focus. Writing expository, argumentative, persuasive responses to informative texts and properly incorporating textual evidence into those responses will be emphasized throughout. A research paper will be a point of focus in the latter half of the year.

## Mathematics

The Mathematics Department at Northeast Metro Tech High School offers a program of courses designed to prepare students with different backgrounds for their future beyond Northeast. Math courses at NEMT make use of technology and develop critical thinking skills as well as problem-solving strategies.

**A graphing calculator is an important tool for contemporary mathematics. All students are encouraged to purchase a calculator for use in school and at home, and we strongly recommend the purchase of a TI-83/TI-84 calculator. In most math classes, a TI-83/TI-84 will be a required tool. Students are urged to bring a graphing calculator to class and learn to use it wisely and skillfully.**

### **2111 (A,B,C) Honors Algebra II (Grade 9) 6.0 credits**

This course is designed for 9<sup>th</sup> graders, and emphasizes the applications of higher level Algebra and problem solving. The topics to be covered are: data and linear functions, systems of equations and inequalities, matrices, quadratic functions and their applications, exponential and logarithmic functions and their applications, discrete mathematics topics and trigonometry.

The Honors level group will be required to use more complex problem solving techniques and progress at an advanced pace. **A graphing calculator is required.**

**Prerequisite:** A grade of 90 or better in Grade 8 Algebra I and teacher recommendation

### **2112 (A,B,C) Honors Algebra I 6.0 credits**

Algebra I introduces students to the first in a sequence of studies in finite mathematics. This course takes an informal approach assuming that the real number system exists and will conduct a systematic investigation of its properties. The course focuses on the principles and comprehension of: algebraic expressions, linear equations, polynomials, functions, introductory analytic geometry, systems of equations and radicals.

The Honors level group will be required to use more complex problem-solving skills and progress at an advanced pace.

**A graphing calculator is recommended.**

**Prerequisite:** A grade of 80 or better in Grade 8 Pre-Algebra and teacher recommendation

### **2122 (A,B,C) CP Algebra I 8.0 credits**

This course takes an informal approach assuming that the real number system exists and will conduct a systematic investigation of its properties. This course is an introduction to variable notation, operations manipulations, functional notation and modeling. Additionally, statistics, probability, data analysis, and number sense, will be included. A spiral approach is taken to integrate MCAS preparation, problem solving, reasoning, communications, and technology.

**A graphing calculator is recommended.** This course will be a small group approach to learning for students who have demonstrated difficulty in mathematics.

**Prerequisite:** Grade 8 mathematics course

### **2212 (A,B,C) Advanced Honors Geometry 6.0 credits**

This course challenges students to develop logical, creative and critical reasoning skills. Students learn basic geometric facts and relationships, and the measurement of geometric figures. Critical concepts and skills such as problem solving and writing proofs are stressed. Topics range from the study of triangles, polygons, and circles to numeric trigonometry. The course will culminate with a review of Algebra II concepts required for success in the Pre-Calculus Honors course. This course

will emphasize complex problem-solving skills and progress at an advanced pace.

**A graphing calculator is required.**

**Prerequisite:** Algebra II Honors

**2211 (A,B,C) Honors Geometry**

**6.0 credits**

The Geometry course challenges students to develop logical, creative and critical reasoning skills. Students learn basic geometric facts and relationships, and the measurement of geometric figures. Critical concepts and skills such as problem solving and writing proofs are stressed. Topics range from the study of triangles, polygons, and circles to numeric trigonometry. The Honors level group will be required to use more complex problem-solving skills and progress at an advanced pace.

**A graphing calculator is required.**

**Prerequisite:** Algebra I (H) or Algebra II (H) and teacher recommendation

**2222 (A,B,C) CP Geometry**

**8.0 credits**

The Geometry course challenges students to develop logical, creative and critical reasoning skills. Students learn basic geometric facts and relationships, and the measurement of geometric figures. Critical concepts and skills such as problem solving and writing proofs are stressed. Topics range from the study of triangles, polygons, and circles to numeric trigonometry.

**A graphing calculator is recommended.**

**Prerequisite:** Algebra I

**2311 (A,B,C) Honors Pre-Calculus**

**6.0 credits**

The Pre-Calculus course is designed for Juniors with a deep interest in mathematics. The course provides a study of functions, including polynomial, exponential, logarithmic, rational and trigonometric functions. Other topics include sequences and series, limits, vectors and conic sections. Emphasis is placed on graphing techniques and interpretation as well as real world applications. The course requires the use of complex problem solving techniques and will progress at an advanced pace. Considerable home preparation is expected.

**A graphing calculator is required.**

**Prerequisite:** Algebra II Honors and Advanced Geometry Honors

**2312 (A,B,C) Honors Algebra II**

**6.0 credits**

This course emphasizes the applications of higher level Algebra and problem solving. The topics to be covered are: data and linear functions, systems of equations and inequalities, matrices, quadratic functions and their applications, as well as exponential and logarithmic functions and their applications, discrete mathematics topics and trigonometry. The Honors level group will be required to use more complex problem solving techniques and progress at an advanced pace.

**A graphing calculator is required.**

**Prerequisite:** Algebra I, Geometry and teacher recommendation

**2321 (A,B,C) CP Algebra II**

**6.0 credits**

This course emphasizes the applications of higher level Algebra and problem solving. The topics to be covered are: data and linear functions, systems of equations and inequalities, matrices, quadratic functions and their applications, as well as exponential and logarithmic functions and their applications, discrete mathematics topics and trigonometry.

**A graphing calculator is recommended.**

**Prerequisite:** Algebra I and Geometry



**2403 (A,B,C) Advanced Placement Calculus AB****6.0 credits**

This course is for highly motivated students who plan to pursue a career in mathematics or science. The subject matter is developed to meet the requirements for AP Calculus AB exam, which students are expected to take. Beginning with the limit concept, the course extends through differential and integral calculus. The use of a graphing calculator is an integral part of the course. Students are encouraged to purchase a graphing calculator so they will become adept at using this technology. **Students may be expected to complete summer assignments**, and considerable home preparation is expected.

**A graphing calculator is required.**

**Prerequisite:** Honors Pre-Calculus and teacher recommendation

**2405 (A,B,C) Advanced Placement Statistics****6.0 credits**

The AP Statistics course is equivalent to a one-semester, introductory, non-calculus based, college course in statistics. The course introduces students to the major concepts and tools for collecting, analyzing, and drawing conclusions from data. There are four themes in the AP Statistics course: exploring data, sampling and experimentation, anticipating patterns, and statistical inference. Students use technology, investigations, problem-solving, and writing as they build conceptual understanding. **Students may be expected to complete summer assignments**, and considerable home preparation is expected.

**A graphing calculator is required.**

**Prerequisite:** Honors Algebra II or Honors Pre-Calculus and teacher recommendation

**2412 (A,B,C) Honors Pre-Calculus****6.0 credits**

The Pre-calculus Investigation course is designed to prepare Seniors for college pre-calculus and calculus courses. The course reviews concepts and applications covered in previous Algebra II courses. Topics include trigonometry, advanced algebra, analytic geometry, statistical analysis, limits, series and an introduction to calculus. Emphasis is placed on graphing techniques and interpretation as well as real world applications. The Honors group will be required to use more complex problem solving techniques and progress at an advanced pace.

**A graphing calculator is required.**

**Prerequisite:** Successful completion of Algebra II and teacher recommendation.

**2421 (A,B,C) CP Pre-Calculus****6.0 credits**

The Pre-calculus Investigation course is designed to prepare Seniors for college pre-calculus and calculus courses. The course reviews concepts and applications covered in previous Algebra II courses. Topics include trigonometry, advanced algebra, analytic geometry, statistical analysis, limits, series and an introduction to calculus. Emphasis is placed on graphing techniques and interpretation as well as real world applications.

**A graphing calculator is recommended.**

**Prerequisite:** Successful completion of Algebra II and teacher recommendation

**2426 (A,B,C) CP Tech Prep Applied Business Math****6.0 credits**

This Tech Prep math course is designed to demonstrate how widely math skills are used in “real world” situations. Topics include: how to handle the daily financial demands of banking, balancing a checkbook and reconciling a statement, investing and buying on time, borrowing and budgeting, transportation, insurance and taxes. Tech Prep students will be required to use more complex problem-solving skills and progress at an advanced pace.

**A scientific calculator is required.**

**Prerequisite:** Grade 11 Mathematics course and/or teacher recommendation

**2456 (A,B,C) CP Applied Business Math 6.0 credits**

This math course is designed to prepare students for college entry through the demonstration of how widely math skills are used in the “real world”. Topics include but are not limited to: how to handle the daily financial demands of banking, balancing a checkbook and reconciling a bank statement, investing and purchasing on time, borrowing and budgeting, transportation, insurance and taxes. The introduction of the Accuplacer testing will be included.

**A calculator is recommended.**

**Prerequisite:** Grade 11 Mathematics course

*Electives*

**2401 CP Statistics (Grade 12) 6.0 credits**

College Preparatory Statistics This course, aligned with the Massachusetts Mathematics Frameworks, is offered to seniors (a) who achieved a final average of C or better in CP or Honors Algebra II, or (b) who have been recommended by their 11th grade mathematics teachers. The content of this course includes an introduction to statistical concepts, probability, frequency distributions, sampling, testing of hypotheses and linear regression. This course will emphasize the practical applications of statistics and the analysis of data rather than mathematical derivations of formulas. This course targets students whose post-secondary plans include (a) the Liberal Arts, allied Health services/Nursing, Criminal Justice, or (b) any undergraduate program other than Engineering, Science, Mathematics, Computer Science, or Business

**2724 Honors Computer Finance 2.0 credits**  
**2723 CP Computer Finance 2.0 credits**

This elective course is linked to the Computer Research course. It is intended to teach students to use the computer as a tool to manage personal and business financial planning. Students may contract for Honors level work and credit.

**2726 Honors Computer Research 2.0 credits**  
**2725 CP Computer Research 2.0 credits**

This course is project based, emphasizing internet use and techniques for research. The use of PowerPoint presentations will be a focus, as well as utilizing PowerPoint to share results of research. This skill will be helpful to students as they develop their Junior/Senior Project.

**2764 Honors Computer Programming 2.0 credits**  
**2763 CP Computer Programming 2.0 credits**

This course explores elementary programming concepts including variables, loops, conditional statements, functions, and objects. Students will have access to many of the computer’s features, and the ability to make small but working programs and artificial worlds. Students will be introduced to the JAVA programming language as well as the concepts of data abstraction and user interface design. Students may contract for Honors level work and credit.

**2766 Honors Computer Science 6.0 credits**  
**2765 CP Computer Science 6.0 credits**

Computer Science introduces students to the foundational concepts of computer science and challenges them to explore how computing and technology can impact the world from the perspective of mobile computing, including programming in App Inventor, a graphical programming language for Android mobile devices. The lessons and materials used by students incorporate

programming while also integrating other big ideas: creativity, abstraction, data and information, algorithms, the internet and global impact. The curriculum engages students and supports the development of problem solving skills. Students learn to create socially useful computational artifacts using App Inventor as well as connect computing and learn about abstracting as they develop and analyze their programs. The curriculum also emphasizes communication and collaboration in a project-based approach and classroom environment. Students may contract for Honors level work and credit.

## Science

The Science Department is committed to providing students with a variety of educational experiences that enable them to graduate as well-rounded scientifically literate citizens, who will be equipped with the knowledge needed to make sound decisions in their lives.

**Note: All science offerings have a full laboratory component and meet the requirement of a lab science.**

### **3111 (A,B,C) Honors Biology**

**6.0 credits**

Honors Biology is an intense lab and project based course which emphasizes the cellular and biochemical basis of life. The basic unit of life, the cell, is examined both structurally and functionally. Areas of importance include the nature of cells, their environment, energy and metabolism, photosynthesis and cellular respiration, heredity and genetics. The curriculum is based on and complies with the Massachusetts Science Frameworks and is ideal for students planning on furthering their education in a four year college.

**Prerequisite:** Placement testing

### **3122 (A,B,C) CP Biology**

**8.0 credits**

CP Biology is a laboratory based, college preparatory course which offers an overview of the basic ideas of the life sciences. Topics covered will include: the nature of cells, cells and their environment, energy and metabolism, photosynthesis and cellular respiration, cell reproduction, heredity, genetics and evolution. The course stresses development of concepts and science inquiry skills, critical thinking, and data analysis. The Massachusetts Frameworks for Biology guides the course and preparation for MCAS testing will be emphasized throughout.

**Prerequisite:** Placement testing

### **3401 (A,B,C) Advanced Placement Biology (Sophomores)**

**6.0 credits**

AP Biology is designed to be the equivalent of a full year of Freshman Biology at the college level. It is a very strenuous course intended to prepare students for further study in the biological sciences. A high level of motivation and independence is necessary for success in this course. Laboratory work is an integral part of this course and will include extensive work with living and preserved organisms. The course will review topics covered in Biology and then delve into energetics, cellular respiration, photo synthesis, growth and development of plants and animals, regulation, development and human systems. The most current developments in the field of biology are also covered and their impact on the future of medicine, genetics, and the environment are discussed. **Students may be expected to complete summer assignments**, and considerable home preparation is expected.

**Prerequisite:** Honors Biology and teacher recommendation

### **3211 (A,B,C) Honors Chemistry**

**6.0 credits**

In Honors Chemistry, students will be guided to develop an understanding of the basic ideas about how matter is structured and classified, using lecture, discussion and demonstrations. Problem sheets and laboratory investigations will develop student laboratory and problem-solving skills. This course is recommended for students who intend to continue their education at a four-year college. Topics covered include: matter, measurement and units, kinetic-molecular theory of matter, changes in matter, atomic structure and periodicity, chemical bonding, chemical reactions, mass relationships in chemical reactions, energy and changes in matter, and acids and bases. Mathematical skills necessary to solve problems will be reviewed and students will be expected to complete

independent on-line investigations reinforcing classroom instruction.

**Prerequisite:** Successful completion of previous science course in sequence

**3223 (A,B,C) CP Chemistry**

**8.0 credits**

In CP Chemistry, students will be guided to develop an understanding of the basic ideas about how matter is structured and classified, using lecture, discussion and demonstrations. Problem sheets and laboratory investigations will develop student laboratory and problem-solving skills. This course is recommended for students who intend to continue their education at a four-year college. Topics covered include: matter, measurement and units, kinetic-molecular theory of matter, changes in matter, atomic structure and periodicity, chemical bonding, chemical reactions, mass relationships in chemical reactions, energy and changes in matter, and acids and bases. Mathematical skills necessary to solve problems will be reviewed and students will be expected to complete independent on-line investigations reinforcing classroom instruction.

**Prerequisite:** Successful completion of previous science course in sequence

**3229 (A,B,C) CP Life Science**

**8.0 credits**

This course is designed to build on the foundation of Biology. The main focus will be topics from the Massachusetts Biology Curriculum Frameworks including plant and animal structure, groups of plants and animals, ecology and the introduction to the chemistry of cells.

**Prerequisite:** Completion of Biology

**3312 (A,B,C) Honors Physics (Juniors)**

**6.0 credits**

Honors Physics is designed for students intending to go on to post-secondary study. Physics investigates the principles controlling the behavior of matter and energy. Topics include: Newton's Laws of Motion and Gravity, conservation of momentum and energy, kinetic theory, heat and thermodynamics, wave motion and sound, light and optics, and electricity and magnetism. The approach is highly mathematical and major emphasis is placed on problem-solving and developing critical thinking skills through project-based curriculum.

**Prerequisite:** Successful completion of previous science course in sequence

**3322 (A,B,C) CP Physics**

**6.0 credits**

This is an applied physics course offered to 11th grade students. Physics is an intensive program with practical applications that explores four systems: mechanics, fluids, electricity, and heat. Videotapes, lectures and demonstrations, introduce each concept and then class work and labs complete the investigations of the topic. Students will learn to solve problems like a technician, utilizing the current trade and industry equipment. Students are graded on the following criteria: quizzes, tests, lab reports, homework, technology journal summaries and class participation. CP Physics is recommended for the following trades: auto body, auto tech, carpentry, electronics, electricity, HVAC, plumbing, drafting and graphic communications.

**Prerequisite:** Successful completion of previous science course in sequence

**3225 (A,B,C) CP Physical Science**

**6.0 credits**

The first half of Physical Science focuses on specific topics in chemistry. These topics include: properties of matter, changes in matter, measurements and units, atomic theory, atomic structure, periodicity, and gas laws. The second half of Physical Science focuses on areas in Physics including: energy, forces, Newton's Laws of Motion, heat, and electricity. Laboratory investigations will be used to enhance the development of student laboratory and problem-solving skills. In

addition, mathematical skills necessary to solve problems will be reviewed.

**Prerequisite:** Completion at least one year of Science

**3321 (A,B,C) CP Chemistry (Juniors)**

**6.0 credits**

In CP Chemistry, students will be guided to develop an understanding of the basic ideas about how matter is structured and classified, using lecture, discussion and demonstrations. Problem sheets and laboratory investigations will develop student laboratory and problem-solving skills. This course is recommended for students who intend to continue their education at a four-year college. Topics covered include: matter, measurement and units, kinetic-molecular theory of matter, changes in matter, atomic structure and periodicity, chemical bonding, chemical reactions, mass relationships in chemical reactions, energy and changes in matter, and acids and bases. Mathematical skills necessary to solve problems will be reviewed and students will be expected to complete independent on-line investigations reinforcing classroom instruction.

**Prerequisite:** Successful completion of previous science course in sequence

**3323 (A,B,C) CP Forensic Science**

**6.0 credits**

Forensic Science is focused upon the application of scientific methods and techniques to crime and law. Recent advances in scientific methods and principles have had an enormous impact upon law enforcement and the entire criminal justice system. Scientific methods specifically relevant to crime detection and analysis will be presented with emphasis placed upon the techniques used in evaluating physical evidence. Topics include, but are not limited to, blood analysis, organic and inorganic evidence analysis, microscopic investigations, hair analysis, DNA, drug chemistry and toxicology, fiber comparisons, paints, glass compositions and fragmentation, fingerprints, soil comparisons, and arson investigations.

**Prerequisite:** Completion of at least one year of Science

**3401 (A,B,C) Advanced Placement Biology**

**6.0 credits**

AP Biology is designed to be the equivalent of a full year of Freshman Biology at the college level. It is a very strenuous course intended to prepare students for further study in the biological sciences. A high level of motivation and independence is necessary for success in this course. Laboratory work is an integral part of this course and will include extensive work with living and preserved organisms. The course will review topics covered in Biology and then delve into energetics, cellular respiration, photo synthesis, growth and development of plants and animals, regulation, development and human systems. The most current developments in the field of biology are also covered and their impact on the future of medicine, genetics, and the environment are discussed.

**Students may be expected to complete summer assignments,** and considerable home preparation is expected.

**Prerequisite:** Honors Biology and teacher recommendation

**3411 (A,B,C) Honors Anatomy and Physiology**

**6.0 credits**

**3426 (A,B,C) CP Anatomy and Physiology**

**6.0 credits**

Anatomy and Physiology is a course designed to investigate the structures and functions of the human body. An intense study of the body systems will be examined with emphasis on the nervous, skeletal, muscular, circulatory and digestive systems; an additional unit on nutrition will be included. Diseases of each system will be discussed as well as disease prevention, modern medical practices and developments, and ethical issues in the field of human biology. The class will include lecture, activities, projects, research papers, and laboratories focused on dissections of pertinent organs. Students may contract for Honors level work and credit.

**Prerequisite:** Successful completion of previous science course in sequence.

**3413 (A,B,C) Honors Physics****6.0 credits**

Honors Physics is designed for students intending to go on to post-secondary study. Physics investigates the principles controlling the behavior of matter and energy. Topics include: Newton's Laws of Motion and Gravity, conservation of momentum and energy, kinetic theory, heat and thermodynamics, wave motion and sound, light and optics, and electricity and magnetism. The approach is highly mathematical and major emphasis is placed on problem-solving and developing critical thinking skills through project-based curriculum.

**Prerequisite:** Successful completion of previous science course in sequence

**3423 (A,B,C) CP Physics****6.0 credits**

This is an applied physics course offered to 11th grade students. Physics is an intensive program with practical applications that explores four systems: mechanics, fluids, electricity, and heat. Videotapes, lectures and demonstrations, introduce each concept and then class work and labs complete the investigations of the topic. Students will learn to solve problems like a technician, utilizing the current trade and industry equipment. Students are graded on the following criteria: quizzes, tests, lab reports, homework, technology journal summaries and class participation. CP Physics is recommended for the following trades: auto body, auto tech, carpentry, electronics, electricity, HVAC, plumbing, drafting and graphic communications.

**Prerequisite:** Successful completion of previous science course in sequence

**3414 (A,B,C) Honors Engineering Technology****6.0 credits**

Engineering Technology is an applied physics curriculum, which will use the engineering design process to investigate prototype development and the science involved within the process. Students will solve problems in structural design, strength of materials, fluid and thermal systems, electrical circuits, communications, and manufacturing. The course is designed to present the discipline of physics in the context of how it is practically utilized in the world and how it is used in technology. Students will work collaboratively as a member of an engineering group to develop, design, and solve problems through hands-on activities, labs and projects.

**Prerequisite:** Acceptance into STEM program.

**3331 (A,B,C) CP Environmental Science (Juniors & Seniors)****6.0 credits**

The Environmental Science course focuses on global as well as local environmental issues. Understanding of the causes and possible solutions to these issues will be presented through scientific thinking and inquiry learning about our environment. Emphasis is placed on direct student involvement through project learning, hands on activities, and internet research.

**Prerequisite:** Completion of at least one year of Science

## Social Sciences and History

The Northeast Social Sciences/History Department strives to provide a challenging and caring academic experience. The curriculum is designed to foster an understanding and appreciation of both United States democratic heritage and its place in an increasingly interdependent world. Students are also exposed to a thematic study of World History. Emphasis is placed on reinforcing reading and writing skills to enhance critical thinking and problem-solving in all courses.

### **4111 (A,B,C) Honors World History 9**

**6.0 credits**

World History is a thematic study of world civilization from the Enlightenment (1500) and the American Revolution (1715-1800) to the present. Some of the topics covered are political and economic revolutions, World Wars I and II, the Cold War, and the role of China and the Middle East in today's world. Students will develop their analytical and writing skills throughout the course. In-depth analysis and advanced group and individual projects will be required of Honors students.

**Prerequisite:** Placement testing

### **4121 (A,B,C) CP World History 9**

**6.0 credits**

World History is a thematic study of world civilization from the Enlightenment (1500) and the American Revolution (1715-1800) to the present. Some of the topics covered are political and economic revolutions, World Wars I and II, the Cold War, and the role of China and the Middle East in today's world. Students will develop their analytical and writing skills throughout the course. Classroom approach will include critical thinking and problem solving, presentations, inquiry and discussion.

**Prerequisite:** Placement testing

### **4212 (A,B,C) Honors United States History 10**

**6.0 credits**

Students begin their study of US History with a review of the Revolution, constitutional principles, and events of the early Republic. Students examine the causes and consequences of the Civil War, industrialization, immigration, US expansion and progressivism through 1900. Students will develop their analytical and writing skills throughout the course. In-depth analysis and advanced group and individual projects will be required of Honors students.

**Prerequisite:** Grade of 80 or better in World History 9 (CP or H) and/or teacher recommendation

### **4222 (A,B,C) CP United States History 10**

**6.0 credits**

Students begin their study of US History with a review of the Revolution, constitutional principles, and events of the early Republic. Students examine the causes and consequences of the Civil War, industrialization, immigration, US expansion and progressivism through 1900. Students will develop their analytical and writing skills throughout the course. Classroom approach will include critical thinking and problem solving, presentations, inquiry and discussion.

**Prerequisite:** Successful completion of World History 9

### **4312 (A,B,C) Honors United States History 11**

**6.0 credits**

Students continue their study of US History of the 20<sup>th</sup> and 21<sup>st</sup> centuries. They learn about American isolationism, World War I, the economic history of the Great Depression, New Deal, World War II, and the Cold War, concluding with an examination of domestic and global policies in the first two decades of the 21<sup>st</sup> century. Students will develop their analytical and writing skills throughout the course. In-depth analysis and advanced group and individual projects will be required of Honors



students.

**Prerequisite:** Grade of 80 or better in United States History 10 (CP or H) and/or teacher recommendation

**4322 (A,B,C) CP United States History 11**

**6.0 credits**

Students continue their study of US History of the 20<sup>th</sup> and 21<sup>st</sup> centuries. They learn about American isolationism, World War I, the economic history of the Great Depression, New Deal, World War II, and the Cold War, concluding with an examination of domestic and global policies in the first two decades of the 21<sup>st</sup> century. Students will develop their analytical and writing skills throughout the course. Classroom approach will include critical thinking and problem solving, presentations, inquiry and discussion.

**Prerequisite:** Successful completion of United States History 10

*Electives*

**4720 Honors Psychology**

**6.0 credits**

**4721 CP Psychology**

**6.0 credits**

The Psychology course is a scientific study of the mind and its effects on human behavior. Areas of study include the brain, sensory organs, simple learning, intelligence, prejudice, personality disorders. Behavioral developments and learning are examined along with motivation, feelings, emotions, intelligence, abilities, and aptitudes. Students may contract for Honors level work and credit.

**4742 Honors Consumer Education**

**2.0 credits**

**4741 CP Consumer Education**

**2.0 credits**

Consumer Education examines the psychology of advertising, the wise use of credit, and the deceptive practices of which consumers should be aware. Course objectives are accomplished through reading, discussion and role-playing. Students may contract for Honors level work and credit.

**4732 Honors Introduction to Psychology**

**2.0 credits**

**4731 CP Introduction to Psychology**

**2.0 credits**

This is an introductory behavioral social science course. The curriculum provides basic understandings in the history of psychology, the scientific approach to social studies, schools of psychology, learning and memory, psychological dysfunction and parapsychology. Current issues in psychology will be presented throughout the course. Students may contract for Honors level work and credit.

**4760 Honors Contemporary World Issues**

**2.0 credits**

**4761 CP Contemporary World Issues**

**2.0 credits**

Contemporary World Issues provides an historical and geographical background for understanding relevant issues of the 20<sup>th</sup> and 21<sup>st</sup> centuries. In today's interdependent world, topics such as the nuclear disarmament, unrest in the Middle East and Africa, rise of China in the global economy, Syria's human rights crisis, production of food, potential trade war, Brexit and the EU, etc. are increasingly relevant and affect all nations and their citizens in some way. Through examining various perspectives, students will analyze these and other issues. Discussion will take place in small and large groups where numerous opinions will be expressed. Students are expected to develop a habit of reading or watching daily news. Students may contract for Honors level work and credit.

<b>4762</b>	<b>Honors Introduction to Criminal Justice</b>	<b>2.0 credits</b>
<b>4723</b>	<b>CP Introduction to Criminal Justice</b>	<b>2.0 credits</b>

Students will study our legal systems and understand how basic legal concepts affect their own lives as citizens, consumers, workers, motorist, tenants, husbands, wives and partners. Students may contract for Honors level work and credit.

<b>4763</b>	<b>Honors Introduction to Sociology</b>	<b>2.0 credits</b>
<b>4724</b>	<b>CP Introduction to Sociology</b>	<b>2.5 credits</b>

The Sociology course is the scientific study of human groups and their relations with one another. Students will focus on why some groups prosper while others disappear, and how the group influences the individual. Emphasis is given to such social institutions as the family, the school, and the church. Students may contract for Honors level work and credit.

<b>4764</b>	<b>Honors Pop Culture</b>	<b>2.0 credits</b>
<b>4765</b>	<b>CP Pop Culture</b>	<b>2.0 credits</b>

American Pop Culture will illuminate the interconnectedness that exists among the political, social and cultural trends of the times. This will require extensive exposure and discussion pertaining to the music, art, literature, film, television and primary sources from the 1950's through the early 2000's. Students may contract for Honors level work and credit.

## World Language

The World Language program at Northeast Metro Tech High School is designed to develop a world language foundation that will prepare students appropriately for entry to college and more importantly, prepare students to understand the diversity of cultures. Students will expand their opportunities and abilities to communicate in an increasingly diverse world, and to prepare to work in the increasing competitive worldwide economy. The goal of the World Language program is to make foreign language acquisition at Northeast a positive experience that builds useful communication skills, encourages perseverance and discipline, and creates young adults with an ability to appreciate and understand that each culture has its own world-view.

### **5711 (A,B,C) Honors Spanish I**

**6.0 credits**

### **5721 (A,B,C) CP Spanish I**

**6.0 credits**

This course is designed for the beginner in Spanish, or students who need a stronger base in the language. Students are introduced to basic speech and expression in Spanish that will provide a foundation for the development of communication skills. The fundamental sound patterns of Spanish will be presented along with vocabulary and structures that will allow the student to communicate on a basic level. Honors courses move at a faster pace than College Prep courses and will include additional assignments.

### **5712 (A,B,C) Honors Spanish II**

**6.0 credits**

### **5722 (A,B,C) CP Spanish II**

**6.0 credits**

This course builds upon basic skills introduced in Spanish I. Emphasis is placed on the development of communication skills by reinforcing Spanish expressions and dialogue. Grammar, vocabulary, and cultural points will be presented and expanded through reading and writing assignments. Using the target language is the main goal of the course to promote language fluency and prepare our students to use the language confidently. Honors courses move at a faster pace than College Prep courses and will include additional assignments.

**Prerequisite:** 90 or better in Hon/CP Spanish I and teacher recommendation for Honors, CP Spanish 1 for CP

### **5713 (A,B,C) Honors Spanish III**

**6.0 credits**

### **5723 (A,B,C) CP Spanish III**

**6.0 credits**

This course is designed to build upon previously acquired speaking, listening, writing, and comprehension skills developed in Spanish I and Spanish II. Oral recitation and expression is an integral component of this course, along with more intensive vocabulary and grammar study. Emphasis on language, relevancy and application to everyday life experiences, interests and the job world is stressed. There is attention to Spanish literary contributions and a focus on culture. Honors courses move at a faster pace than College Prep courses and will include additional assignments.

**Prerequisite:** Honors Spanish II and teacher recommendation for Honors, CP Spanish II for CP

### **5751 (A,B,C) Honors Spanish for Heritage Speakers I**

**6.0 credits**

Heritage speakers of Spanish bring a unique skill set to foreign language learning. This course will enable students, who speak Spanish at home, to hone their skills in academic Spanish. This course offers an intense study of grammar, spelling, and vocabulary, designed to prepare students for the second year of Spanish for Heritage Speakers and other upper level Spanish classes offered. Students will be appropriately challenged and supported for their future language acquisition.

**Prerequisite:** Placement test and/or teacher recommendation.

**5752 (A,B,C) Honors Spanish for Heritage Speakers II****6.0 credits**

This course will afford students, who speak Spanish at home, to refine their academic skills in Spanish. This course will focus on developing academic Spanish through a focus on reading, writing, and speaking. Students will accomplish this through surveying a variety of Hispanic authors and developing writing and speaking skills. They will therefore be appropriately challenged and supported for their future language acquisition

***Prerequisite:*** Successful completion of *Spanish for Heritage Speakers I* and teacher recommendation.

## Wellness

Health Education and Physical Education combine to create a Wellness program that is an integral part of the educational curriculum. The comprehensive goals and objectives of the program address the physical, social, emotional, and mental health of the students. In Physical Education classes the emphasis is on equitable participation in interactive group and individual activities that will enhance the student's fitness level, skill ability and knowledge. Co-educational classes are designed to provide opportunities for social interaction among students to help students understand and value the benefits of regular physical activity. The health component focuses on healthy decision-making understanding human needs as it relates to choice, positive and negative influences, and identifying behavior change strategies and goal setting. The opportunity for students to develop a positive self-image, learn respect for differences and develop cardiovascular efficiency are important aspects of the Wellness program.

**9162 CP Health Education 9 2.0 credits**

Freshman Health class is a required course and focuses on providing current information on relevant topics that encourage students to make safe, responsible decisions concerning their health. This class addresses the following topics: substance abuse, healthy relationships and teen dating violence, self-esteem, first aid and CPR, and the influence of media and its connection to overall health.

**9161 CP Physical Education 9 2.0 credits**

Physical Education at Northeast is the aspect of the educational process that utilizes physical activity to contribute to an individual's fitness, psychomotor, cognitive, and affective areas of development. The emphasis is on equitable participation in interactive group and individual activities that will enhance the student's fitness level, skill ability and knowledge. This comes in a variety of activities in unit form such as Project Adventure, individual sports, and team collaboration.

**9261 CP Physical Education 10 2.0 credits**

**9361 CP Physical Education 11 2.0 credits**

**9461 CP Physical Education 12 2.0 credits**

The primary focus of this physical education course is to develop teamwork and cooperation within a working group. The objective is to form an effective unit through collaboration. Teambuilding is an important factor in this project-based learning environment. The goal of a team is to work effectively as a group to pursue positive results. Communication skills, leadership skills, and the ability to work closely together as a class to problem solve are components of a successful team.

*Electives (Juniors and Seniors only)*

**9770 Project Challenge 2.0 credits**

Students will work together in a cooperative manner to achieve a common goal. The course is designed to increase self-confidence, develop communication skills, gain a better appreciation for individual differences, and learn to trust oneself and others to better cooperate in a group.

**9771 CP Lifetime Activities 2.0 credits**

This course promotes a healthy lifestyle through recreational activities. Activities may include badminton, tennis, volleyball, table tennis, fitness walking, bocce, horseshoes, golf, whiffle ball, and hiking.

**9472 CP Personal Fitness and Nutrition 2.0 credits**

Students will be participating in daily fitness routines utilizing a variety of fitness techniques and equipment. Students will develop personal fitness plans to meet their individual goals and keep daily records of their progress. Students will also learn about the importance of good nutrition for maintaining a healthy lifestyle.

**9773 CP Self-Defense 2.0 credits**

In this class, students learn a full range of self-defense techniques, including: awareness, assault deterrence, and setting verbal boundaries. Student will also learn to overcome the freeze response and to strategize and assess option while in an adrenalized state. Classes are taught in a supportive environment that allows each student freedom to make their own choices. Scenarios start slowly and increase in realism as the students' skills increase. Students will learn a variety of techniques from a variety of self-defense styles.

**9774 CP Fundamentals of Fitness 2.0 credits**

Fundamentals of Fitness will provide student with background knowledge in the 5 components of fitness. Students will develop individualized fitness plans based on their personal objective. Classes will utilize the weight room, gym and outdoor fields, as well as time in the classroom. This course is designed to increase self-confidence, develop communication skills and increase mutual support for each other while achieving lifetime fitness instruction. Students will learn how non-competitive activity and cross-training can improve cardiovascular fitness, muscle strength/endurance, flexibility and agility.

**9775 CP Competitive Games 2.0 credits**

This course is designed to center around competitive team sports. Sportsmanship and team building are emphasized. Respect for the rules, game play and strategies necessary for team games are a must. The focus is on traditional and non-traditional team activities, which include; flag football, baseball/softball, floor hockey, basketball, volleyball, ultimate Frisbee, handball, cricket, lacrosse and soccer.

# Vocational Technical Program

## Freshman Exploratory

The Exploratory Program at Northeast Metro Tech High School is designed to allow students to make informed decisions in choosing a vocational technical area which they wish to pursue in grades 10, 11 and 12. The Exploratory Program provides students with experiences in career awareness by giving them an orientation to all the vocational technical areas at Northeast.

Students participate in fifteen career/technical program areas during the first fifteen shop weeks of the school year. Each freshman selects eight shops to explore and will be placed in seven additional shops by computer selection.

Freshmen will receive a numerical grade for each exploratory based on an evaluation of the student's performance. Students earn 2.0 credits on their permanent high school transcript for each passing exploratory grade (max. 30 credits, passing grade of 65). Four points will be deducted for each day absent from shop. Students are eligible to make up absences by completing one after school session with the shop and one take-home assignment per each day absent from shop.

A freshman may be allowed to re-explore a shop only if more than half of the exploratory is missed due to extenuating circumstances. Documentation is required and there must be space availability.

Freshmen make their shop selections at the end of the fifteenth exploratory. Students will be asked to rank order the exploratory shops in which they have received a passing grade. Freshmen are placed in their permanent shops for the last 9 weeks of the Freshman Year. Students earn 6 credits on their permanent high school transcript for passing Trimester 3 Shop.

A computerized selection process attempts to place all students in their first choice shop. If space in that shop is unavailable, the computer will then place students in the next shop preference where space is available. Wait Lists are generated for all shops that have filled to capacity. Students are organized on the Wait Lists according to:

1. Shop selection rank order, then
2. Numerical grade earned for that shop.

In the case of a tie, where students have equal numerical grades for a shop, the tie will be broken by using the following criteria:

1. Average of all exploratory grades, if the tie is still not broken, then
2. Grade point average of all academic courses.

Review Process for Students Not Accepted into Selected Vocational Shop Area: Upon receipt of notification indicating that the student was not selected for enrollment in a selected shop program, the student's parent/guardian may request a review of the decision. This request must be in the form of a letter requesting a placement review and sent to the Principal within thirty days of shop placement. The Principal will respond to the letter within thirty days, in writing, with the findings of the review.

## The Junior/Senior Project\*

*\*Specific Dates and Deadlines are subject to annual school calendar*

For the Junior/Senior Project students develop, design or create a product, service, system or event as a culmination of their learning as well as to ignite options and opportunities for further studies or employment after high school. The project is a demonstration of the student's achievement of higher order skills such as critical thinking, reading comprehension and effective communication. Students are expected to demonstrate self-directed learning in the completion of this task.

Successful completion (passing grade of 65 or better at the culmination of the project) of the Project is a district graduation requirement.

The project will consist of three (3) parts:

- Integrating Academic and Career Technical knowledge and content
- Physical Product
- Oral Presentation

Senior Projects will be overseen by the Related Instructors. The Senior Project must be started no later than the third quarter and completed no later than the beginning of fourth quarter.

*Specifics regarding the Senior Project will be reviewed by faculty/administration during the School Year.*



## **AUTOMOTIVE COLLISION REPAIR and REFINISHING**

Thousands of vehicles are involved in collisions every day. Many of these cars and trucks need to be properly restored to pre-accident condition. This is the job of the automotive collision repair technician. You can learn the skills necessary to get started in this exciting and rewarding career at Northeast. The National Automotive Technician's Education Foundation (NATEF) certified, Automotive Collision Repair and Refinishing program at Northeast offers training in all aspects of automotive collision repair, based on ASE (Automotive Service Excellence) and Inter-Industry Conference on Auto Collision Repair (I-CAR) standards.

Upon successful completion of the program, students will possess the knowledge and hands-on experience needed to excel in the workplace or as a solid foundation toward a post-secondary degree. The Automotive Collision Repair and Refinishing program at Northeast has articulation agreements with area technical colleges for those students who wish to further their training after graduation. Student safety is a priority in the Automotive Collision Repair and Refinishing program. Shop facilities and training conform to OSHA standards and all students in the program receive the OSHA certified 10 Hour General Industry safety course.

### **FACILITIES:**

*GFS* Water-borne and *SprayBake* Downdraft spray booths, *Survivair* fresh-air supplied respirator system, *PPG* computerized paint mixing system, *Chief E-Z Liner* frame machine, *Chief* universal frame measuring system, *ADP ShopLink* and *Mitchell* computerized auto damage estimating systems, heat inductor adhesive removal tool, mig and aluminum welders, *Eagle II* dent removal machine, plasma and oxy-acetylene cutting equipment.

### **CAREER OPPORTUNITIES:**

Upon graduation, students are employable as:

Automotive Body and Related Repairers	Painter/Refinisher Technician
Insurance Adjuster	Glass Technician
Field Inspector/Appraiser	
Auto Damage Estimator/Appraiser	Claims Adjuster

### **AUTOMOTIVE COLLISION REPAIR AND REFINISHING GRADUATES HAVE BEEN EMPLOYED AT THESE LOCAL BUSINESSES:**

Lannan Chevrolet, Woburn, MA	European Auto Body, Revere, MA
Woburn Imported Cars, Woburn, MA	Expert Auto Body, Wakefield, MA
Krazy Custom Cycles, Wilmington, MA	Nickole Auto Body, Saugus, MA
Precision Auto, Wakefield, MA	Mahoney's Auto Body, Woburn, MA
Today's Auto Collision Repair Center, Chelsea & Malden, MA	

### **POST - GRADUATION ARTICULATION AGREEMENTS:**

See the NEMT Career Center section on the school website ([www.northeastmetrotech.com](http://www.northeastmetrotech.com))

### **LICENSES, CERTIFICATIONS AND AFFILIATIONS:**

National Automotive Technicians Education Foundation (ASE) Refrigerant Certification 603  
PPG Paint & Refinishing Certificate  
OSHA 10-hour Occupational Health and Safety General Industry Training

## Course of Study

### *Automotive Collision Repair and Refinishing*

#### **ABX            Grade 9 Exploratory**

**2.0 credits**

During grade 9 exploratory, students will receive instruction in auto body shop safety and basic auto body repair techniques. Course content introduces students to vehicle construction, minor dent repair, masking, automotive detailing and basic airbrushing skills.

#### **ABXF-16      Grade 9 Shop**

**6.0 credits**

During grade 9 shop, course content will include content on the safe and proper use of all hand and power tools used in the collision repair industry. Students will be introduced to basic automotive welding, and automotive refinishing procedures.

#### **AB2            Grade 10 Shop**

**30.0 credits**

During grade 10 shop, students will receive instruction on vehicle construction and nomenclature, computer estimating, sheet metal repair, advanced automotive welding, water-borne and solvent-based paint mixing, surface preparation and refinishing, non-structural body repair and plastic welding.

#### **AB2R          Grade 10 Related**

**6.0 credits**

This course provides students with the theory necessary to understand the basic repair and refinishing techniques used in the collision repair and refinishing industry. Coursework is designed to address NATEF objectives. Students receive instruction in tool use and safety, vehicle construction and shop equipment procedures. Students will also attain their OSHA 10 hour general safety card as part of their instruction. Instructional delivery includes presentations, reading and writing assignments, classroom demonstrations, self-paced computer instruction and visual media presentations. Reading, writing and math assignments related to the collision repair industry are also integrated with the academic frameworks.

#### **AB3            Grade 11 Shop**

**36.0 credits**

During grade 11 shop, course content will focus on more advanced non-structural and structural damage while students hone their skills on live work and project vehicles. Instruction will include: damage analysis and measuring, body panel preparation, panel alignment, auto glass removal and installation and proper refinishing techniques.

#### **AB3R (A,B,C) Grade 11 Related**

**6.0 credits**

This course provides students with the theory necessary to understand the basic repair and refinishing techniques at an advanced level of instruction used in the collision repair and refinishing industry. Instruction builds on coursework from the previous year and is designed to address NATEF objectives. Students receive instruction in automotive refinishing and equipment use and application, dent repair techniques and equipment and MIG welding. Instructional delivery includes presentations, reading and writing assignments, classroom demonstrations, self-paced computer instruction and visual media presentations. Reading, writing and math assignments related to the collision repair industry are also integrated with the academic frameworks. Introduction to the Jr./Sr. Project graduation requirement is also a component of their related instruction.

#### **AB4            Grade 12 Shop**

**36.0 credits**

During grade 12 shop, course content will include removing and replacing structural panels, identifying, measuring and straightening frame and unibody damage and diagnosing mechanical and electrical component problems. Instruction will also emphasize the development of desirable employability skills.

#### **AB4R (A,B,C) Grade 12 Related**

**6.0 credits**

This course provides students with the theory necessary to understand the basic repair and refinishing techniques at an advanced level of instruction used in the collision repair and refinishing industry. Instruction builds on coursework from the previous year and is designed to address NATEF objectives. Students receive instruction in frame damage analysis, computer estimating and mechanical and electrical components. Instructional delivery includes presentations, reading and writing assignments, classroom demonstrations, self-paced computer instruction and visual media presentations. Reading, writing and math assignments related to the collision repair industry are also integrated into the curriculum as evidenced by continuation and completion of the Jr./Sr. Project graduation requirement.

## **AUTOMOTIVE TECHNOLOGY**

The Automotive Technology department provides entry-level through advanced level learning and training in the design, theory of operation and servicing techniques of the many system components of today's automobiles. Training focuses on engine repair, brakes, automatic/manual transmission/transaxles, suspension and steering, scan tools, lab scopes, test equipment, engine machine shop, heating and air conditioning, engine performance, emission controls, small engines, auto parts sales and shop safety. Northeast's Automotive program is NATEF/ASE approved (National Automotive Technicians Education Foundation - National Institute for Automotive Service Excellence), and all teachers are ASE certified. The department supports the SKILLS USA program, a national nonprofit organization supporting students who are preparing for careers in trade, technical and skilled service occupations.

### **CAREER OPPORTUNITIES:**

Upon graduation, students are employable as:

- Motorsports Technicians
- Automotive Service Advisor
- Diesel Technician
- Heavy Equipment Technician
- Master Automotive Technician

### **AUTOMOTIVE TECHNOLOGY GRADUATES HAVE BEEN EMPLOYED AT THESE LOCAL BUSINESSES:**

128 Mazda / Isuzu	Kelly Auto Group
Stoneham Ford	128 Ford
Olsen Cadillac	Quality Volvo
Liberty Chevrolet	Jiffy Lube
XL Hybrids	Gem Auto Parts
NAPA Auto Parts	Flagship Motors
Danvers BMW	

### **POST - GRADUATE ARTICULATION AGREEMENTS:**

See the NEMT Career Center section on the school website ([www.northeastmetrotech.com](http://www.northeastmetrotech.com))

### **LICENSES, CERTIFICATIONS AND AFFILIATIONS:**

National Institute for Automotive Service Excellence (ASE) MAC Air Conditioning Certification  
OSHA 10-hour Occupational Health and Safety General Industry Training

## Course of Study

### *Automotive Technology*

#### **ATX                    Grade 9 Exploratory                    2.0 credits**

This one-week exploratory program introduces students to the automotive and associated service industries. Some of the topics covered are; personal and shop safety, principles of 4-stroke cycle engines, basic measuring skills, hand tools, vehicle maintenance, engine component identification, and disassembly and assembly. Students explore ASE career paths, such as an auto technician, parts supply specialist, machine technician, motorcycle technician, and marine technician. Students see a video on how a car is built from design to completion. Instructional delivery includes hands-on performance, computer animation, group activities, self-paced computer instruction and video presentations.

#### **ATXF-16            Grade 9 Shop                    6.0 credits**

Course content introduces students to Shop experiences that include, tire service, vehicle preventative maintenance, shop safety and safe operation of tools, career opportunities, basic engine construction and design. Hands on work include wheel and tire identification, inspection, repair, dismounting, mounting, balancing, and installation. In addition the identification and repair of disc/drum brake systems are covered. This part of the course will provide the students with the basic skills and knowledge necessary for continued success in the Automotive Technology program.

#### **AT2                    Grade 10 Shop                    30.0 credits**

Course content introduces students to Shop experiences that include instruction and hands on training in wheel alignment fundamentals and service, steering and suspension geometry, steering/suspension fundamentals and service, automotive machine shop, basic electrical/electronic theory and operation, maintaining the engine electrical system, and servicing the automotive electrical/electronic system. Shop experiences will provide the students with the knowledge and skill training for continued success in the Automotive Technology program. Instructional delivery includes demonstrations, presentations, and hands-on performance testing.

#### **AT2R                Grade 10 Related                6.0 credits**

During Grade 10 related, students will investigate and participate in this course that provides students with the theory necessary to understand and troubleshoot basic automotive sub-systems. Coursework is designed to address NATEF objectives. Students receive instruction in tool use and safety, equipment procedures, lubrication, automotive machine shop, steering and suspension geometry, 4-wheel alignment, and introduction to braking systems. Students are also introduced to on-board computer theory and diagnostics. Instructional delivery includes presentations, reading and writing assignments, classroom demonstrations, self-paced computer instruction, electronic textbooks and visual media presentations. Reading, writing and math assignments related to the automotive profession are integrated with academic frameworks during this class.

#### **AT3                    Grade 11 Shop                    36.0 credits**

Course content introduces students to Shop experiences that include instruction and hands on training in 4-stroke cycle engine operation, cooling system maintenance and service, automotive machine shop, exhaust system inspection and service, basic electricity/electronics, ignition systems, service and testing of emission control systems, starting and charging systems parts, inventory, and billing procedures, and instruction and use of the MITCHELL ON DEMAND catalog/repair CD ROM information system. Shop experiences will provide the students with knowledge and skill training for continued success in the Automotive Technology program. Instructional delivery includes demonstration, presentations and hands-on performance testing.

#### **AT3R (A,B,C) Grade 11 Related                    6.0 credits**

During Grade 11 related, students will investigate and participate in this course that provides students with the theory necessary to understand and troubleshoot basic automotive sub-systems. Instruction builds on coursework from the previous year and is designed to address NATEF and MA CVTE frameworks objectives. Students receive instruction in the principles and operation of the 4-stroke cycle engine, cooling system operation and service, use of precision measuring tools in automotive machine shop, exhaust system operation, basic electricity/electronics, ignition systems, introduction to on-board diagnostics, starting and charging systems and instructions in the use of the MITCHELL ON DEMAND catalog/repair CD ROM

information system. Instructional delivery includes presentations, demonstrations, and the use of multimedia equipment. Curriculum includes reading, writing, and math assignments consistent with the automotive profession.

**AT4                      Grade 12 Shop    36.0 credits**

Course content introduces students to Shop experiences that include instruction and hands on training in service and repair of automotive sub- systems in the areas of heating and air conditioning, service and repair manuals, diagnosis and repair of clutch systems, differentials, and drive line components, principles and operation of manual/transaxle, principles and operations of automatic transmission/transaxle, fuel systems, emissions control, automotive machine shop, and the use of state of the art scan tools, lab scopes and test equipment. Students are also encouraged to learn about customer service skills. Instructional delivery includes presentations, demonstrations, and hands on performance testing, reading and writing assignments, shop demonstrations, and visual media presentations. Tests and performance evaluations are used to determine the student's level of mastery.

**AT4R (A,B,C) Grade 12 Related    6.0 credits**

During Grade 12 related, students will investigate and participate in lessons that build on coursework from the previous year and are designed to address NATEF objectives. Students receive instruction in the theory and operation of the fuel system, emissions control, diagnosis of on board computer systems, heating and air conditioning, automatic and manual transmission/transaxle, clutch systems, differentials and drive line components, and use of scan tools, lab scopes, and test equipment. Instructional delivery includes presentations, demonstrations, the use of multimedia equipment and electronic textbooks. Curriculum includes reading, writing, and math assignments consistent with the automotive profession.

## BUSINESS TECHNOLOGY

The Business Technology Program offers training in areas related to the fast-paced, diverse, and exciting Business Environment. Students will be taught manual and computerized accounting using QuickBooks and TurboTax. They will also receive extensive training in the Microsoft Office Suite (Word, Excel, and Powerpoint) and Google Drive. Additionally, computer maintenance, web page development and maintenance, social media, mobile technology, cloud computing, and collaboration platforms will be covered. Students will receive “all aspects of the industry” training featuring law, management, financial literacy, marketing, entrepreneurship, customer service and retail operations via the Northeast School Store. Eligible students may apply for a seat in the Reading Co-Op Bank branch on campus where they receive basic teller training in addition to a supplemental financial literacy program. All of this training will enable students to be well-rounded employees or entrepreneurs.

### CAREER OPPORTUNITIES:

Upon graduation, students are employable as:

Administrative Assistant	Accounting Clerks	Office Clerks
Account Managers	Bookkeepers	Office Administrators
AP/AR Clerks	Computer Application Specialist	Real Estate Agent
Bank Teller	Customer Service Representative	
Payroll Specialist	Computer Support Specialist	Sales Representative
Receptionist		

With additional training and education, students can obtain employment as the following:

Accountant	Database Specialist
Financial Analyst	Financial Manager
Insurance Broker	Legal Assistants
Market Research Analyst	Marketing Manager
Medical Office Assistant	Operations Analyst
Real Estate Broker	Stock Broker

### COLLEGE ARTICULATION AGREEMENTS:

See the NEMT Career Center section on the school website ([www.northeastmetrotech.com](http://www.northeastmetrotech.com))

### BT GRADUATES HAVE ATTENDED THE FOLLOWING COLLEGES:

UMass-Lowell	UMass-Dartmouth
Salem State University	Johnson and Wales
Suffolk University	Bentley University
St. Johns University	Merrimack College
North Shore Community College	Bunker Hill Community College
Middlesex Community College	Bay State College
Virginia Commonwealth University	UMass-Boston
UMass-Amherst	

### LICENSES, CERTIFICATIONS, AND AFFILIATIONS:

OSHA 10-hour Occupational Health and Safety General Industry Training

## **Course of Study**

### ***Business Technology***

- OTX                      Grade 9 Exploratory                      2.0 credits**  
During the Freshman Exploratory the students will be introduced to Word Processing Applications, Spreadsheet Applications, Presentations Applications, Introduction to Accounting, Computerized Taxes, Computerized Business Simulations using Virtual Sports Business Computer Simulation, Keyboarding, Social Media , Introduction to Finance, Law and Stock Markets using IPADS and career overview of high-paying and high demand job opportunities .
- OTXF-16                  Grade 9 Shop    6.0 credits**  
New students will be exposed to all areas of the Business Technology Trade. Students will continue to build their Word Processing, Spreadsheet and Presentation computer and mobile technology skills. Students will be introduced to accounting, finance, marketing, management using simulations
- OT2                      Grade 10 Shop    30.0 credits**  
During the Sophomore Year the students will receive training with Microsoft Office (Word, Excel and PowerPoint), Keyboarding, Technology and Accounting and Computer Related Theory, Social Media, Business, Finance, Marketing and Law Projects, Mobile Technology, Media and “All Aspects of the Trade Instruction”.
- OT2R                      Grade 10 Related    6.0 credits**  
This course introduces students to traditional accounting concepts and terminology. It covers in detail the entire accounting cycle from basic transactions to closing entries. Students are introduced also to key informational technology concepts.
- OT3                      Grade 11 Shop    36.0 credits**  
During the Junior Year, the students receive Intermediate Microsoft Office Training in Excel, Word and PowerPoint, Technology and Accounting Related Theory, Computerized Accounting and Income Tax Prep Instruction, Intermediate Business Projects, Mobile Technology and Social Media Projects and “All Aspects of the Trade Instructions”. Students will be introduced to “Team” building activities.
- OT3R (A,B,C) Grade 11 Related    6.0 credits**  
In this course students build upon what was introduced during the sophomore year. Students will start to acquire knowledge that will begin to prepare them for entry-level employment in the business field. Students will prepare ledgers, payroll reports and financial statements.
- OT4                      Grade 12 Shop    36.0 credits**  
During Senior Year, the students reinforce key Microsoft Office skill, Technology or Accounting Related Theory and Business Projects and “All Aspects of the Trade Instruction”. Students will be expected to work successfully in group environment. Each student will have an opportunity to develop “Employability Skills” by working as student aides in various offices and departments throughout the school. Student will have an opportunity to gain “Real Life” experience by working in our School’s branch of the Webster Federal Credit Union as a teller. Seniors are strongly encouraged to take advantage of Co-op opportunities. The Business Technology Program prepares and strongly encourages our graduates to continue their education at the post-secondary level.
- OT4R (A,B,C) Grade 12 Related    6.0 credits**  
An advanced course that will reinforce concepts learned in the previous two years of related. This course will focus on accounting for a merchandizing corporation. Depreciation and Inventory valuation will be introduced. The course is designed to prepare students for a College-level Introduction to Accounting course.

## CARPENTRY

The Northeast Carpentry Program is designed to instruct students in all types of house construction and remodeling. Students are involved in foundation layout work, house framing and exterior and interior finish carpentry work. The students work with a variety of building and finishing materials and become familiar with modern methods and styles of commercial and residential construction. Carpenters are the largest group of building trade workers. They usually have greater opportunities than most other construction workers to become general construction supervisors as they are involved with the entire construction process. Throughout the program, strong emphasis is placed on employment with a union shop or general contractor.

An integral component of the Carpentry curriculum involves shop workstations allowing students to practice all phases of house construction. Students are instructed in the use of hand power tools, industrial woodworking machinery, and a variety of contractor power and battery operated tools. In the related (theory) courses, particular attention is paid to the knowledge of all materials used in the trade, the layout and calculation of dimensions, entry level framing, window and door installation, and blueprint reading.

### **CAREER OPPORTUNITIES:**

Upon graduation, students are employable as:

Carpenter	Lather and Drywaller
Millrights	Cabinetmaker and Millworker
Pile Driver	Floor Layer
Residential Carpenter	Roofer
Interior Systems Carpenter	Vinyl Siding Installer

### **CARPENTRY GRADUATES HAVE BEEN EMPLOYED BY THE FOLLOWING COMPANIES:**

Lowe's, Peabody, MA	Villandry Contracting Inc., Arlington, MA
Local Union #26, Wilmington, MA	Local Union #28, Medford, MA
Home Depot, Saugus, MA	Aronis Builders, Stoneham, MA
Local Union # 33 Boston, MA	Griffin Interiors, Wilmington, MA
Tower Glass, Woburn, MA	Cummings Properties, Woburn, MA

### **POST - GRADUATE, ARTICULATION, AGREEMENTS:**

See the NEMT Career Center section on the school website ([www.northeastmetrotech.com](http://www.northeastmetrotech.com))

### **LICENSES, CERTIFICATIONS, AND AFFILIATIONS:**

MAVA: DAT Division of Apprenticeship Training: Carpentry Articulation Verification  
OSHA 10-hour Occupational Health and Safety Construction Industry Training



## Course of Study

### Carpentry

#### **CAX            Grade 9 Exploratory**

**2.0 credits**

With primary focus on safety, students complete a week long exploratory program which includes an overview of the various trades within the construction field. Topics covered include: print reading, framing, drywall and finish, as well as the application of interior and exterior finish materials. Students are instructed in the safe practices involved in construction demolition, and organizational skills.

#### **CAXF-16        Grade 9 Shop**

**6.0 credits**

Following shop selection, freshman Carpentry students are introduced to the basics of shop/worksite safety notably safe use of hand and portable power tools. Students complete small scale projects with emphasis on safety, measurement, layout, and basic construction math.

#### **CA2            Grade 10 Shop**

**30.0 credits**

Students are introduced to the various hand, power, and industrial tools utilized in the shop and at job sites. All students complete the 10-hour OSHA (Occupational Safety and Health Administration) Construction Training Program. Carpentry students, enrolled in our competency program, receive actual hands on training involving construction techniques from the foundation to the roof. Students work in 2 person teams toward completion of a work station/mock-up addressing competencies in print reading and layout, framing, roofing, drywall installation, wall finishes, exterior siding, trim work, and floor finishes.

#### **CA2R            Grade 10 Related**

**6.0 credits**

Students will be introduced to the fundamentals of construction carpentry including; personal worksite safety, proper use and storage of hand and power tools and ongoing development of construction nomenclature, and relevant math concepts.

#### **CA3            Grade 11 Shop**

**36.0 credits**

Students are re-instructed as to the various safety techniques and procedures, and must pass a safety orientation review test. The house building and remodeling programs are an integral component to the students' overall development as a tradesperson. Strong emphasis is placed on the construction competency program as well as the importance of safety and teamwork.

#### **CA3R (A,B,C) Grade 11 Related**

**6.0 credits**

The purpose of this course is to further the students instruction in the principles of the carpentry construction field. The course is designed to furnish the technical background to the student's experiences in the outside construction program. Initial work on the Junior/Senior project is also part of the curriculum.

#### **CA4            Grade 12 Shop**

**36.0 credits**

Students are re-instructed as to the various safety techniques and procedures and must pass the safety orientation test. There is a strong emphasis placed on the opportunity to participate in the school to work program. Students continue their house building and remodeling experiences with a strong emphasis placed on completing the competency program.

#### **CA4R (A,B,C) Grade 12 Related**

**6.0 credits**

This course is designed to instruct students in the more advanced aspects of the carpentry construction field. Topics covered include advanced framing, job site safety and maintenance, estimating, site preparation, code requirements, purchasing/billing, job supervision and scheduling. Students also work towards completion of the narrative portion of the Senior Project

## **COSMETOLOGY**

Cosmetology students receive comprehensive training in all areas of hairdressing and the related fields needed to qualify for both the state licensing examination and employment as a cosmetologist. Students also learn how to manage a salon, start a business and deal effectively with clientele. Curriculum includes inventory control, record keeping and salon based technology, personal hygiene and good grooming, bacteriology, sterilization and sanitation. Anatomy and physiology play an important part in the program.

### **CAREER OPPORTUNITIES:**

Upon graduation, students are employable as:

Hair Stylist	Manicurist
Hairdresser	Nail Technician
Make-up Artist	Aesthetician
Hair Colorist	Cosmetologist

### **COSMETOLOGY GRADUATES HAVE BEEN EMPLOYED BY THE FOLLOWING COMPANIES:**

Dellaria's Salon, Boston, MA,	Vidal Sassoon's Salon, Boston, MA
James Joseph Salon, Boston, MA	Super Cuts, North Reading, MA
Laschi's, Reading, MA	Creative Expressions, Lexington, MA
Phillip Ciampa, Lexington, Winchester & Wakefield	

### **LICENSES, CERTIFICATIONS, AND AFFILIATIONS:**

Grade 12 students are eligible to take the Operator License examination provided by the Massachusetts Board of Cosmetology (upon completion of the program and requisite training hours).

OSHA 10-hour Occupational Health and Safety General Industry Training

## Course of Study

### Cosmetology

#### **COS            Grade 9 Exploratory**

**2.0 credits**

The Grade 9 Exploratory Program in Cosmetology promotes the understanding of the art and science in making hair, skin, and nails attractive for clients. The following competencies are taught: Shampooing, Zulu knots, Conditioning, Brushing, and Parting the hair, Henna hand make-up, Roller styling, Nail art, Multicultural Concepts of beauty, Dread locks, Face painting on mannequins, Face painting on masks, Afro Styling, Braiding, False beard and mustache, and Stained glass make-up. Students also practice all safety procedures, including sterilization and sanitation precautions as shown by the instructor. The integration of academics and career technical curriculum includes preparation for MCAS examinations with daily math quizzes and daily writing assignments. While Exploratory students do not need to wear a uniform while in shop, they must dress appropriately for the Cosmetology Shop setting.

#### **COSF-16        Grade 9 Shop**

**6.0 credits**

Grade 9 students will study the *History of Cosmetology* and *Safety in the Salon* which includes infection control and sanitation. Students will practice shampooing, brushing, combing, parting and braiding the hair.

#### **CO2            Grade 10 Shop**

**30.0 credits**

Grade 10 Cosmetology students will study the following competencies: *Wet Hairstyling*: Shampooing, conditioning, temporary hair coloring, finger waving, roller sets, pin curl placement, braiding and comb outs; *Blow Drying*: Round brush styling, iron curling, comb-outs, wig and hairpiece styling; and *Facials*: Eyebrow shaping, waxing, manicuring, pedicuring and make-up application. Students will also practice all safety procedures, sterilization and sanitation precautions as shown by the instructor.

#### **CO2R            Grade 10 Related**

**6.0 credits**

Grade 10 Cosmetology Related students will study the following competencies: Cosmetology / The History and Opportunities, Life Skills, Professional Image, Facials, Communication, Infection Control, Properties of Hair and Scalp, Hair Design Principles, Shampooing, Rinsing and Conditioning, Braiding, Wigs and Hairpieces, Histology of Skin, Hair Removal, Facials, Makeup, Nail Structure, Manicuring/ Pedicuring, Anatomy/ Physiology. **Materials Required:** Text book, work books, uniform and shop kit. Students must replace any materials missing from shop kits as needed.

#### **CO3            Grade 11 Shop**

**36.0 credits**

Grade 11 students will study the following competencies: Salon Management, Thermal Hair Styling, Roller Sets, Blow Drying, Haircutting, Permanent Waving, Waxing, Advanced Skin Care and Basic Hair Coloring. The students will practice all safety procedures, sterilization and sanitation precautions as shown by the instructor.

#### **CO3R (A,B,C) Grade 11 Related**

**6.0 credits**

Grade 11 Cosmetology Related students will study the following in theory and practical: Salon Management, Nails/Diseases/Disorders, Thermal Hair Styling, Skin/Diseases/Disorders, Hair Styling, Removing Unwanted Hair, Haircutting, Electricity, Permanent Waving, Chemistry, Facials, Anatomy/Physiology, and Hair Coloring. **Materials Required:** Text book, work books, uniform and shop kit. Students must replace any materials missing from shop kits as needed.

#### **CO4            Grade 12 Shop**

**36.0 credits**

Grade 12 Cosmetology students complete curriculum in preparation for the Massachusetts State Board Examination for their Operators' License. Licensing comprises 50% of the third term grade. Successful licensing allows students opportunities to participate in the Cooperative Education Program (additional eligibility criteria apply). Senior Cosmetology students complete the following competencies: Salon Management/Senior Project; Chemical Hair Relaxing/ Reconstruction, Facials/ Skin Care/ Cosmetics, Hair Coloring/ Special Effects, Color Analysis, Sterilization/ Sanitation, Haircutting, Clinic/Salon Management, Electricity, Client Procedure / Conduct, Anatomy/Physiology, Salon Management, Chemistry, State Board Review/CD Review.

**CO4R (A,B,C) Grade 12 Related****6.0 credits**

Grade 12 Cosmetology Related students prepare and present Senior Projects to a panel of professionals in the field and Northeast faculty. Grade 12 students will also work towards completion of text book and workbooks, study guides, and state board review books. **Materials Required:** Text book, work books, uniform and shop kit. Students must replace any materials missing from shop kits as needed.

## CULINARY ARTS

Culinary Arts is the fastest growing industry in America today. Due to an ever-changing workplace and a newly defined global economy, the demand for highly skilled food service professionals is constantly increasing. Today's customers possess sophisticated tastes and frequently connect food and business. Resorts and vacation areas are geared year round to meet the leisure needs of these business people. Institutional food service professionals are trained to feed the next generation from elementary schools through college.

Northeast's culinary Arts Program fully prepares students to make the choice of entering the workforce or continuing on to further education after high school. Each year of the Culinary Arts Program has a separate content concentration area focusing on three major components of the hospitality industry that is unique to the student's year and grade. In the related classroom culinary students are taught the theory and science for that year's content area. During Shop week students staff and manage the "James Wallace Breakheart Inn", and on site, full service restaurant open daily to the public for lunch. Career technical pathways are full of postsecondary opportunities including but not limited to articulation agreements with select colleges enabling eligible students the opportunity to earn college credits while successfully completing Northeast Culinary courses. This is a tremendous jump start to a career and/or higher education. All Northeast Culinary Arts graduates are trained by professionals to be professionals. The students in the Culinary Arts program are working with the latest state-of-the-art equipment. Through the use of federal funding the district purchased a combination oven. This purchase provides the students with the opportunity to prepare multiple meals, simultaneously. This is the technology being utilized throughout the industry.

### CAREER OPPORTUNITIES:

#### Production:

Baker	Food Preparation Worker
Bartender	
Chef (Restaurant, Catering, Corporate)	
Cook (Line, Prep)	

#### Management:

Owner	
Manager	Assistant Manager
Steward	

#### Service:

Maître 'D	Host or Hostess
Expediter	Cashier
Waiter or Waitress	Bus Person

### ARTICULATION AGREEMENTS:

North Shore Community College, MA	Newbury College, MA
Johnson & Wales College, RI	New England Culinary Institute, VT
Culinary Institute of America, NY	

### NATIONAL CERTIFICATIONS:

OSHA 10-hour Occupational Health and Safety General Industry Training  
National Restaurant Association ServSafe Certificate

## COURSE OF STUDY

### *Culinary Arts*

#### **CUX            Grade 9 Exploratory**

**2.0 credits**

The exploratory program introduces students to dining room services and back of the house production including bakery production, kitchen production, sanitation and safety.

#### **CUXF-16        Grade 9 Shop**

**6.0 credits**

Freshman students execute all the dining room duties while in shop. Students are exposed to all aspects of table service and use of a "Point of Sale" electronic system. Students experience weekly shifts in the kitchen and bakery to acquire the basics of back of the house production. Sanitation, safety, and basic rules and regulations of the industry are also covered.

#### **CU2            Grade 10 Shop**

**30.0 credits**

Curriculum for the Grade 10 students addresses the front of the house with students developing basic kitchen and bakery skills. Content includes customer service, table service, cashier service protocols, using "Point of Sale" electronic system, sanitation and safety procedures, host duties, kitchen and bakery utilities services, cold food production, basic culinary skills, cookies and roll production and basic bakery skills. Students also work towards their national ServSafe sanitation certification.

#### **CU2R            Grade 10 Related**

**6.0 credits**

Grade 10 related students will learn career terminology, kitchen safety, tools and equipment, food items, cooking methods and techniques, basic nutrition and culinary related math and science. Sanitation laws and procedures, health and safety, utility and dining room service topics will be reinforced.

#### **CU3            Grade 11 Shop**

**36.0 credits**

Grade 11 students will be concentrating on cooking and baking throughout the year. Topics will include cooking methods, fruits and vegetables, grains, legumes and starches, marinades, salads and dressings, thickening agents, soups and sauces, cookie production, quick breads, yeast dough, pie production, bakery scaling and basic bench working techniques.

#### **CU3R (A,B,C) Grade 11 Related**

**6.0 credits**

Grade 11 shop themes are reinforced during the related course. Cooking methods, fruit and vegetable identification, grains, starches, soups, stocks, salads and dressings, and baking fundamentals are emphasized. Culinary related math and science skills are developed. Related students will also begin to address their Junior/Senior project requirements.

#### **CU4            Grade 12 Shop**

**36.0 credits**

Grade 12 students will be concentrating on cooking and baking as well as front of the house management techniques. Content area includes advanced cooking and baking skills, merchandising, store management, buffet presentations, meat and seafood fabrication and dining room management. Grade 12 students maintain responsibility for food inventory, ordering, receiving and inspection procedures.

#### **CU4R (A,B,C) Grade 12 Related**

**6.0 credits**

Students will be introduced to meat and seafood identification, meat grading and fabrication, menu planning and design, food ordering procedures, pastry and cake production, management controls and procedures, and advanced culinary related math and science. The Junior/Senior project will be completed.

## **DENTAL ASSISTING**

Dental Assisting is one of the fastest growing careers in Massachusetts. The Northeast program offers a comprehensive curriculum aligned with the MA DESE Dental Assisting framework. Students are given the opportunity to gain knowledge of administrative and clinical dental procedures through academic and practical instruction. The students receive clinical experience at Tufts University School of Dental Medicine. Upon successful completion of their rigorous curriculum, students are prepared to take the Dental Assisting National Board certification exams in radiology and infection control.

### **CAREER OPPORTUNITIES:**

Graduated students have been employed by:

Private Dental Offices

Community Health Clinics

Dental Quest Insurance Company

Tufts School of Dental Medicine

### **COLLEGES AND UNIVERSITY PROGRAMS:**

Dental Assistant Graduates have been enrolled in the following Colleges:

Massachusetts School of Pharmacy

Middlesex Community College

Salem State University

University of Connecticut at Bridgeport

University of Massachusetts Boston

University of New England

### **COLLEGE ARTICULATION AGREEMENT:**

Northern Essex Community College

### **CERTIFICATIONS AND LICENSES:**

American Heart Association BLS, CPR, AED and First Aid

OSHA 10-hour General Industry Training

## Course of Study

### *Dental Assisting*

#### **DAX            Grade 9 Exploratory**

**2.0 credits**

Freshman students are introduced to the Dental Assistant profession. They are exposed to clinical and administrative duties of the dental assistant. Dental career opportunities are explored. Skills include safety, clinical, clerical, and dental laboratory competencies. The freshman students study business math as it relates to operating a dental office. This daily class helps prepare the student for the MCAS exam. Students study the identification of teeth and nutrition as it relates to dental health.

#### **DAXF-16        Grade 9 Shop**

**6.0 credits**

Students begin their dental assisting curriculum during the 4<sup>th</sup> quarter. Competencies include roles and responsibilities of the dental assistant, introduction to radiology, basic clerical and chair side procedures. Students complete the OSHA training program.

#### **DA2            Grade 10 Shop**

**30.0 credits**

Sophomore year the dental assisting student will learn both clinical and clerical skills. The clinical aspect is an introduction to infection control procedures, patient exam preparation, and basic operatory management. The clerical focus is on appointment book scheduling, inventory control, and insurance forms. Sophomore students participate in community service by providing Dental Health Education programs to Northeast's Preschoolers.

#### **DA2R            Grade 10 Related**

**6.0 credits**

Sophomore students study dental charting, oral anatomy, tooth morphology, tooth histology, tooth embryology and nutrition.

#### **DA3            Grade 11 Shop**

**36.0 credits**

Junior year the dental assisting student will focus on restorative materials, dental instruments used in general dentistry, as well as procedures and techniques used in today's offices. Students are introduced to analog and digital radiology; competencies are developed in exposing, developing, and mounting x-rays. Three days a week students will experience an unpaid supervised externship at Tufts School of Dental Medicine. The students receive certification in American Heart Association CPR/AED and Red Cross First Aid. Junior students participate in community service by providing Dental Education programs to local elementary school children.

#### **DA3R (A,B,C) Grade 11 Related**

**6.0 credits**

Junior students study head and neck anatomy and the theory and safety practices of radiography. Juniors also begin work on their Junior/Senior Project.

#### **DA4            Grade 12 Shop**

**36.0 credits**

The senior year student concentrates on expanded functions and radiology health and safety in the dental practice. Students are given lab practice and written assessments to prepare them for the national credential examinations. Senior year students continue their clinical experience three days per week at Tufts School of Dental Medicine. If eligible, students may participate in Cooperative Education. The administrative concentration is on writing office procedure manuals, resume writing, and basic accounting procedures.

#### **DA4R (A,B,C) Grade 12 Related**

**6.0 credits**

Senior students study oral pathology, dental pharmacology and dental office medical emergencies. Students complete and present their Senior Project.



## DESIGN AND VISUAL COMMUNICATIONS

Students with artistic drawing talent will develop essential art skills needed to work in the professional art field and prepare to enter any art college after graduation. They will focus on building a strong professional art portfolio. Students regularly participate in hands-on experiences exploring various art techniques and state-of-the-art computer programs used in art agencies today including *InDesign*, *QuarkXPress*, *Illustrator* and *Photoshop*. Design students are educated in a professional studio environment and develop 21<sup>st</sup> century work habits.

### CAREER OPPORTUNITIES:

Upon graduation, students are employable as:

Animation Artist	Photographer
Artist/Graphic Designer	Photoshop Artist
Children's Book Illustrator	Screen Printer
Computer Animator	Tattoo Artist
Digital Artist/Illustrator/Retoucher	Videographer
Fashion Illustrator	Web Page Designer/Artist
Game Designer/Illustrator	
Graphic Artist	
Multimedia Designer	

### DESIGN AND VISUAL COMMUNICATIONS GRADUATES HAVE BEEN EMPLOYED BY THE FOLLOWING COMPANIES:

Mystic Design, Boston, MA  
Signs by Tomorrow, Woburn, MA

### COLLEGE ARTICULATION AGREEMENTS:

Center for Digital Imaging Arts  
MA State DV Articulation Agreement  
North Shore Community College

### RECENT GRADUATES FROM THE DESIGN AND VISUAL COMMUNICATIONS PROGRAM ARE ENROLLED IN:

The New England Institute of Art, Brookline, MA	Lesley University, Boston, MA
Montserrat College of Art, Beverly, MA	Massachusetts College of Art, Boston
Fitchburg State University, Fitchburg, MA	

### POST - GRADUATE LICENSES, CERTIFICATIONS, & AFFILIATIONS/ PROGRAMS:

OSHA 10-hour Occupational Health and Safety General Industry Training

## Course of Study

### *Design and Visual Communications*

#### **DVX                    Grade 9 Exploratory                    2.0 credits**

Students in this program will learn introductory knowledge of studio safety and basic Design and Visual communications projects. Some of the projects the students will be expected to complete include; creating an advertisement and creating two pieces artwork for a children's book. They will also be exposed to basic photography and Photoshop techniques.

#### **DVXF-16            Grade 9 Shop                    6.0 credits**

Students begin to develop their artistic talents by completing a number of assignments using both freehand drawing and computer based programs such as *InDesign*, *QuarkXpress*, *Illustrator* and *Photoshop*.

#### **DV2                    Grade 10 Shop                    30.0 credits**

Students will develop a variety of art and design skills in their sophomore year. Drawing books will be issued with specific quarterly assignments to promote critical visual problem solving skills. Students study color theory through the use of watercolor, gouache, pastels, and prism color pencils and markers. Typography and practical implementation of design theory, as well as digital and reflective illustrations allows the Design students to work on a variety of graphic design projects and train on up-to-date, industry relevant-software. Students are introduced to preparing, maintaining, critiquing and editing their own professional artist portfolio.

#### **DV2R                Grade 10 Related                    6.0 credits**

This course is the first of three related courses needed to complete the Design and Visual Communications competences and graduate with a certificate in the field. Students will be introduced topics including but not limited to color theory, photography, digital art, desktop publishing, web design, animation, typography and painting.

#### **DV3                    Grade 11 Shop                    36.0 credits**

Students perform Ad Agency-based assignments such as: Corporate ID New Image Design Presentations, Product Ad Campaigns, TV Ad campaign / story boarding, Product Design presentations, and animated promotional Ads. Comprehensive layout presentations and critical critiques are conducted as an important and real process tool to promote inventive, exciting work. Digital photography and studio product lighting, along with QuarkXPress, Photoshop, Illustrator and Flash Computer Programs are used by the art students to produce finished comprehensive presentations.

#### **DV3R (A,B,C) Grade 11 Related                    6.0 credits**

This course is the second of three related courses needed to complete the Design and Visual Communications competences and graduate with a certificate in the field. Students will continue their study of the following topics: color theory, photography, and digital art, desktop publishing, web design, animation, typography and painting.

#### **DV4                    Grade 12 Shop                    36.0 credits**

Critical study in specific focus areas for portfolio refinement and final review is a requirement. Students experience National Art Portfolio Day. College visits are scheduled and financial aid information is disseminated. Seniors write a college letter-of-intent-essay and design and produce a two-fold promotional mailer. A resume, cover letter, and job search / interview strategy plan will be developed in the senior year.

#### **DV4R (A,B,C) Grade 12 Related                    6.0 credits**

This course is the third of three related courses needed to complete the Design and Visual Communications competences and graduate with a certificate in the field. Students will become proficient about the following topics: color theory, photography, and digital art, desktop publishing, web design, animation, typography and painting.

## DRAFTING AND DESIGN

Our homes, the cars we drive, and the products we buy all begin with the art of drafting. Drafting, known as the “language of industry”, is the process of drawing products through a graphic or picture language that can be understood by people worldwide.

The *Mechanical Design* component of the program recognizes that today’s design tools differ from those of the past and offers students a program utilizing the latest 3-dimensional parametric modelers including “SolidWorks.” Daily lectures teach the foundation of design principles. Then, students apply their knowledge to a curriculum-designed project that integrates real world applications. By the program’s completion, students are able to design a mechanical project, piece by piece, by creating 3D models of each component. The students will then assemble the parts and produce a “working drawing” of the model. The 3D model can then be emailed to a CNC (Computer Numerically Controlled) machine in our onsite manufacturing lab to be built as a prototype. This systematic approach walks the students through the entire experience of design from concept to prototype and introduces the different roles that are integral to product design.

The *Electro-Mechanical Drafting* components of the program prepare students to understand the drawing procedures from schematic diagram to PC board. Students will learn to recognize basic electronic symbols and draw schematic diagrams using CAD (Computer Aided Design) programs.

The *Architectural Drafting* component of the program prepares technical drawings for residential and commercial projects. Their drawings and models provide visual guidelines, details and specific dimensions for the construction industry. A major part of the curriculum uses the latest parametric 3D design software to produce drawing plans, elevation, sections, and details. The curriculum also includes architectural styles and history, structural theories, code research, sketching, presentation drawings, and model building.

### **CAREER OPPORTUNITIES:**

Upon graduation, students are employable as:

- Entry-Level CAD
- Drafting Technicians
- Residential/Commercial Design

There are also job opportunities for CAD drafters in manufacturing, surveying, civil engineering, structural engineering, and in real estate.

### **COLLEGE ARTICULATION AGREEMENTS:**

- |                               |                                     |
|-------------------------------|-------------------------------------|
| Middlesex Community College   | New England Institute of Technology |
| North Shore Community College | Ben Franklin Institute              |

### **RECENT GRADUATES FROM THE DRAFTING AND DESIGN PROGRAM ARE ENROLLED AT:**

- |                                   |                                     |
|-----------------------------------|-------------------------------------|
| Boston University                 | Northeastern University             |
| Wentworth Institute of Technology | Boston Architectural Center         |
| Fitchburg State University        | UMASS Boston                        |
| North Shore Community College     | Bunker Hill Community College       |
| Middlesex Community College       | New England Institute of Technology |
| Mass Bay Community College        |                                     |

### **NATIONAL CERTIFICATIONS:**

OSHA 10-hour Occupational Health and Safety Construction Industry Training

## Course of Study

### *Drafting and Design*

#### **DDX                    Grade 9 Exploratory                    2.0 credits**

The CAD design exploratory program introduces the students to today's cutting edge design process. Students begin their week long experience with a design challenge. Students design their own invention in a 3D mode which will be animated and tested for correct fit. When the animation is correct, students make working drawings with proper views and dimensions.

#### **DDXF-16            Grade 9 Shop                    6.0 credits**

Students learn about drafting shop tools and the "shop" environment. Emphasis is on basic drafting practices and principles. Daily lessons incorporate examples from text books, videos, and past practices. The students experience the theories of drafting methods through both individual and group assignments.

#### **DD2                    Grade 10 Shop                    30.0 credits**

This course meshes the time-tested fundamentals of mechanical design with today's most advanced design tools. Lesson topics include Introduction to Design, Sketching and Freehand Technical Design, Basic Geometric Construction, Solid Part Modeling, Assembly Modeling, Orthographic Projection/ Creating Working Drawings, Measurement, Sectional Views, Auxiliary Views, Electronic Drafting and Introduction to Rapid Prototyping. All topics are covered in an easy to understand sequence and delivered in a way that builds knowledge and confidence.

#### **DD2R                Grade 10 Related                    6.0 credits**

The purpose of this course is to present the theories behind the common practices used in the mechanical design field. This course explains the "why" behind the "how to" that are learned in shop. Lessons are carefully planned to align with shop lessons and reinforce concepts necessary to master the skills. Daily lectures are offered in a discussion format.

#### **DD3                    Grade 11 Shop                    36.0 credits**

The purpose of this course is to focus the Drafting and Design student on a variety of architectural projects. The students use *Chief Architect* software program to develop plans, elevations, sections and details on a variety of residential and commercial projects. Students are introduced to architectural theory, layout sketching, building materials, structural requirements, architectural components and building code regulations. Students will be introduced to the following topics: one and two story house design, stair layout, roof design, site design, kitchen and bath design, accessibility regulations and code analysis, commercial design projects. The students are required to develop and maintain a presentation portfolio with all weekly projects including sketches, notes, CAD drawings and models.

#### **DD3R (A,B,C) Grade 11 Related                    6.0 credits**

The purpose of this course is to focus the Drafting and Design student on a variety of architectural concepts, theories and terminologies. The students are introduced to architectural theory, layout sketching, building materials, structural requirements, architectural components and building code regulations. Curriculum also includes one and two story house design, stair layout, roof design, site design, kitchen and bath design, accessibility regulations and code analysis, commercial design projects, plot plans, civil drafting concepts, surveying and mapping. Students are required to develop and maintain a journal complete with weekly assignments, handouts, sketches and notes.

#### **DD4                    Grade 12 Shop                    36.0 credits**

During their senior year, drafting students work on a variety of school approved community projects, larger commercial projects and larger residential projects. Seniors work on developing and practicing competencies that were learned during their junior year. The students are required to complete and present their Junior/Senior project having earlier chosen a mechanical, electro-mechanical or architectural based final project.

**DD4R (A,B,C) Grade 12 Related****6.0 credits**

The Grade 12 related course curriculum engages students in areas of the state competencies that they have not yet experienced while reinforcing previously learned fundamentals. Emphasis is also placed on skills essential for successful completion of the Junior/Senior Project.

## **EARLY CHILDHOOD EDUCATION**

Students develop necessary skills to become educators and care givers for infants, toddlers, and preschool aged children. ECE students assist in Northeast's on-site preschool, as well as in early childhood learning centers in the community. ECE students develop skills to foster appropriate social relationships among the preschoolers and guiding them as they learn through play. Students successfully completing the ECE program become State Certified Preschool Teachers.

### **CAREER OPPORTUNITIES:**

Upon graduation, students are employable as:

- Nanny
- Pre-school Teacher
- Pre-school Teaching Assistant
- Family Day Care Provider

### **EARLY CHILDHOOD EDUCATION GRADUATES HAVE BEEN EMPLOYED BY THE FOLLOWING COMPANIES:**

- KinderCare, Stoneham, MA
- Creative Corner, Winchester, MA
- First Steps, Stonehama, MA
- Chime Time, Melrose, MA
- Little Steps, Melrose, MA

### **COLLEGE ARTICULATION AGREEMENT:**

- North Shore Community College

### **COLLEGE ACCEPTED PROGRAMS:**

- Salem State University
- Wheelock College
- Bay State College
- Lesley University
- Middlesex Community College
- Becker College

### **LICENSES:**

- MA Early Childhood Education and Care: Preschool Teacher and/or Infant/Toddler Certification
- American Heart Association CPR, AED and First Aid
- Childcare Education Institute Online Safety Program Certification
- OSHA 10-hour Occupational Health and Safety General Industry Training

## Course of Study

### *Early Childhood Education*

#### **ECX            Grade 9 Exploratory**

**2.0 credits**

Students participate in hands-on activities introduced to the field of Early Childhood Education and receive exposure to safety topics inside/outside the preschool environment.

#### **ECXF-16        Grade 9 Shop**

**6.0 credits**

Students are actively engaged in the daily activities of the preschool. They are supported in initiating appropriate conversations with the preschool children and assuming an active role in their play. Students are expected to follow shop rules and safety practices as outlined by the preschool and State guidelines.

#### **EC2            Grade 10 Shop**

**30.0 credits**

Students are introduced to planning and implementing daily activities under the supervision of head teachers. The sophomore curriculum includes lesson planning, introduction to careers in Early Childhood Education, and the physical, intellectual, emotional and social development of preschool aged children. Students learn how to appropriately talk to children and impart age appropriate behavior management techniques. Grade 10 ECE students gain an understanding of the importance of learning through play in all areas of the preschool curriculum and develop teamwork skills by working closely with Grade 12 students. Students will also prepare to become OSHA certified by the end of their sophomore year.

#### **EC2R            Grade 10 Related**

**6.0 credits**

Students gain knowledge of the needs of various ages and learn how to supervise young children. Students learn how to determine socially acceptable behavior and handle negative behaviors as well as the signs of child abuse and neglect. Furthermore, students become familiar with age appropriate curriculum planning and implementation, explore the value of play in the preschool setting and become involved in daily activities by extending play.

#### **EC3            Grade 11 Shop**

**36.0 credits**

Students plan, implement, and direct weekly thematic based units. Students also work on bulletin boards, children's portfolios and end of the year preschool evaluations.

#### **EC3R (A,B,C) Grade 11 Related**

**6.0 credits**

Students explore the field of early childhood education through understanding the traits of a quality child care program. They become aware of the characteristics that make up a competent child care professional and learn what is required to operate a child care center effectively. Furthermore, students learn how to set up an appropriate environment for children to learn and understand and implement health and safety practices. Emphasis is placed on organizing and implementing an early learning program and starting their Junior/Senior Project.

#### **EC4            Grade 12 Shop**

**36.0 credits**

In the Senior year, students put into practice their early education and care competencies by overseeing the preschool program. Seniors, while supervised by their instructors, manage the daily activities of the preschoolers. If eligible, students participate in externship programs in early childhood centers in the community. When students are eligible, they are able to work towards the Early Education and Care Infant/Toddler Teacher certification.

#### **EC4R (A,B,C) Grade 12 Related**

**6.0 credits**

Students spend senior year researching the state mandated child care regulations. Additionally, students work to complete their Junior/Senior Project, and build a resume with letters of recommendation.

## **ELECTRICAL**

Students in the Northeast Electrical program will become proficient in electrical wiring, hardware installation and the repair of electrical and related equipment. In addition, the students will become familiar with circuit design, blueprint reading, and the laws and regulations pertaining to the electrical field. Students enrolled in the Electrical program will learn the proper use of hand tools, power tools, hydraulic tools, taps/dies, grinders, and heat tools for bending poly vinyl chloride conduit. They will be introduced to a wide range of specialized wiring within the electrical industry such as fire alarm systems, burglar alarms, signal circuits, television, communications circuits and boilers.

Students who are enrolled in the Electrical program of studies must successfully complete the fundamentals of the electrical curriculum from their sophomore to senior year. The course introduces students to electrical concepts and theories. Upon successful completion of the fundamentals of the electrical course, the students will focus on electrical theory, the National / Massachusetts Electrical Codes, specialty circuits drawing, and mathematics related to the electrical field.

### **CAREER OPPORTUNITIES:**

Upon graduation, students are employable as:

- Electricians
- Electrical Apprentices
- Electrical Power-line Installers and Repairers
- Lineman
- Electrical Warehouse Suppliers
- Telecommunications
- Data Communication Specialists

### **ELECTRICAL GRADUATES HAVE BEEN EMPLOYED AT THE FOLLOWING COMPANIES OR AGENCIES:**

Eversource, Boston, MA	Interstate Electric, Burlington, MA
Joy Electric, Quincy, MA	Dodge Electric, Stoneham, MA
Mass Electric, Boston, MA	IBEW Local 103
Ducom Electric, Wilmington, MA	Tocco Electric, Winchester, MA
All Tech Electric	Suburban Electric

### **COLLEGE ARTICULATION AGREEMENTS:**

- MA State Engineering Tech Articulation Agreement
- Ben Franklin Institute of Technology

### **LICENSES, CERTIFICATIONS, AND AFFILIATIONS:**

The graduate moves upward in the Commonwealth of Massachusetts Electrical license tier system through the accumulation of 1800 working/ 375 classroom hours.  
OSHA 10-hour Occupational Health and Safety Construction Industry Training



## Course of Study

### *Electrical*

#### **ELX            Grade 9 Exploratory**

**2.0 credits**

The Ninth grade exploratory program is an introduction to the electrical shop and trade. Students learn shop and hand tool safety. A series of projects designed to mimic common home wiring gives the student a chance to use some of the trade tools and learn with a hands-on approach to basic residential wiring.

#### **ELXF-16        Grade 9 Shop**

**6.0 credits**

This 9<sup>th</sup> grade program is the start of the student's apprentice training. Students will start the learning process with an introduction to the foundations of the electrical field receiving detailed instruction of safety and tool protocols.

#### **EL2            Grade 10 Shop**

**36.0 credits**

The tenth grade shop program is a basic introduction to proper use of tools, safety precautions and wiring methods, including but not limited to bell wiring, non-metallic sheathed cable, armored cable, surface metal raceway, electric metallic tubing, and ridge metal conduit wiring methods.

#### **EL2R            Grade 10 Related**

**6.0 credits**

Related and theory training for all grades includes review and mastery of Electrical safety practices, the National Electrical Codes, the Massachusetts Electrical Code, blue print reading, electrical math, science, circuit drawing and electrical theory to correspond with their grade level.

#### **EL3            Grade 11 Shop**

**36.0 credits**

The Grade 11 program is structured to include wiring methods consisting of PVC bending, installation and residential services. As with all grade level curriculums, safety and proper use of all tools is reinforced. Eligible students may participate in community based job site activities under the supervision of Northeast instructors.

#### **EL3R (A,B,C) Grade 11 Related**

**6.0 credits**

Related and theory training for all grades include Electrical safety practices, the National Electrical Codes, the Massachusetts Electrical Code, blueprint reading, electrical math, science, circuit drawing and electrical theory to correspond with their grade level.

#### **EL4            Grade 12 Shop**

**36.0 credits**

At this level students learn to trouble-shoot, trace electrical wiring, circuitry and motor control wiring in the shop. Students utilize their safety training of power tools, ladders, pipe bending and wiring skills during new installations within the school and offsite at community based work sites supervised by Northeast instructors. Network and communication wiring is also learned at this level.

#### **EL4R (A,B,C) Grade 12 Related**

**6.0 credits**

Related and theory training for all grades include Electrical safety practices, the National Electrical Codes, the Massachusetts Electrical Code, blueprint reading, electrical math, science, circuit drawing and electrical theory to correspond with their grade level.

## HEALTH ASSISTING

Healthcare is one of the fastest growing industries in the US with a demand for multi-skilled health occupation employees. To meet this challenge, students in the Northeast Health Assistant program study the therapeutic, diagnostic, and administrative areas of the health professions with an emphasis on Nurse Assisting and Medical Office Assisting. Students are given theoretical and practical instruction in the laboratory and clinical experience in area healthcare facilities. The rigorous curriculum is aligned with the standards and requirements of the Department of Public Health and the MA DESE frameworks.

Medical related sciences are integrated into the Health Assistant curriculum. These include anatomy and physiology, nutrition, and biology. Medical Terminology, Introduction to Electrocardiography, Introduction to Phlebotomy and a thirty hour Home Care Aide course are taught during the student's Health Assisting career.

The students are prepared to test for the Massachusetts Department of Public Health certification exam for Nurse Assistants. Many Health Assistant students pursue post-secondary education to continue their education in Nursing or Allied Health.

### **CAREER OPPORTUNITIES:**

Employment opportunities post-graduation:

Certified Nurse Assistant	Home Health Aide
Phlebotomist	EKG Technician
Medical Office Assistant	
Dietary Aide	

### **GRADUATES HAVE BEEN EMPLOYED BY THE FOLLOWING FACILITIES:**

Brigham and Women's Hospital	Mass. General Hospital
Chelsea Soldier's Home	Wingate Nursing Center
Boston Medical Center	Prospect House
East Boston Health Center	Sunrise Healthcare
Burlington Eye Associates	Cambridge Health Alliance
Bear Hill Nursing Home	

### **COLLEGE ARTICULATION AGREEMENTS:**

- North Shore Community College
- MA State Agreement Medical Assisting
- MA State Agreement HA

### **LICENSES AND CERTIFICATIONS:**

- American Heart Association BLS, CPR and AED
- American Red Cross First Aid/CPR/AED
- Department of Public Health Certified Nurse Assistant
- Home Health Aide
- OSHA 10-hour Occupational Health and Safety General Industry Training

## Course of Study

### *Health Assisting*

#### **HAX                    Grade 9 Exploratory                    2.0 credits**

The Health Assistant program offers the exploratory student an overview of healthcare professions and the various occupations available in the field. The students are taught safety in the healthcare environment, CPR, first aid, infection control, basic anatomy and physiology, and nutrition. Freshmen participate in a visit to a local Geriatric Adult Day Health Center. Freshman students in Health Assisting study medical math. Medical math is a competence necessary to be successful as a healthcare employee. The curriculum helps prepare the student for the MCAS exam.

#### **HAXF-16            Grade 9 Shop                    6.0 credits**

Freshman students begin their Health Assistant course of studies in the fourth quarter. The goal for the students in the ninth grade is the attainment of introductory knowledge and pre-care skills necessary to begin the Nurse Aide curriculum. The students volunteer one day each week at an Adult Day Health Center. The Health Assistant curriculum includes roles and responsibilities of the healthcare worker, introduction to nutrition, introduction to geriatrics and understanding dementia. Freshman students complete the ten hour OSHA certification on-line course.

Freshman students are introduced to the language of medicine and their three year sequential course of medical terminology. Students begin studying the basic structure of the human body.

#### **HA2                    Grade 10 Shop                    36.0 credits**

The tenth grade students begin the Nurse Aide curriculum and work in the skills lab, the clinical setting and the classroom. The students are immersed in a course of studies which includes Fundamentals of Nurse Assisting, Medical Office Administration, Therapeutic Nutrition, Gerontology, First Aide and computer skills. The students acquire nurse assisting clinical skills through practice in the nursing laboratory and a supervised internship at Wingate Long Term Care Facility.

#### **HA2R                Grade 10 Related                6.0 credits**

Medical Terminology is a three year sequential course taught in Health Assisting. The course is designed to give the student the knowledge of medical language. Competency in medical terminology is a necessary skill for employment in the healthcare profession. This is an anatomy and physiology systems based course.

During the sophomore year, students study the structure and function of the human body, medical abbreviations, medical word roots, prefixes and suffixes. Students are taught the anatomy and physiology, diagnostic, therapeutic and pathology terms of the special senses, reproductive and integumentary systems.

#### **HA3                    Grade 11 Shop                    36.0 credits**

Junior students participate in a one semester rigorous nurse aide training and review course which includes a lab component. Students apply their skills in the clinical area at Chelsea Soldier's Home and Glen Ridge Nursing Care Center. Students are under the direct supervision of a Registered Nurse instructor. Upon successful completion of the Nurse Assistant course, the student is eligible to take the Massachusetts Certification Exam to be licensed as a Certified Nurse Assistant and placed on the Department of Public Health's Registry of licensed CNA's.

The junior student also participates in a one semester Medical Office Assistant course. Administrative skills and clinical procedures are practiced in the lab and developed in the clinical setting at East Boston Neighborhood Health Center. During the eleventh grade the students also study Introduction to Electrocardiography, and are certified in American Heart Association CPR/AED. Students who successfully complete the Nurse Aide course with a B average are eligible for college credits through our articulation agreement with local community colleges.

#### **HA3R (A,B,C) Grade 11 Related                    6.0 credits**

During the second year of medical terminology, junior students study the anatomy and physiology, diagnostic, therapeutic and pathology terms of the cardiac, muscular, skeletal and urinary systems. Students begin their research for the Junior/Senior Project graduation requirement.

**HA4****Grade 12 Shop****36.0 credits**

Seniors in the Health Assistant program participate in a supervised clinical internship three days a week at Whidden Hospital where they develop advanced nurse assisting skills. The students study pathology and treatment of the patient in acute care. Students complete a Home Health Aide course, an Introduction to Phlebotomy course and the NEFE financial curriculum. Senior students in Health Assisting, if eligible, may participate in the Cooperative Education program.

**HA4R (A,B,C) Grade 12 Related****6.0 credits**

During the third year of Medical Terminology, senior students study the anatomy and physiology, diagnostic, therapeutic and pathology terms of the respiratory, digestive, endocrine and nervous systems. Students work throughout the year researching and completing the Senior Project. Students who maintain an overall B average for the three year course are eligible for three credits from North Shore Community College through the Health Assisting articulation program with the college.

## **HEATING, VENTILATION AND AIR CONDITIONING/REFRIGERATION**

The Northeast Heating, Ventilation, Air Conditioning / Refrigeration program teaches the skills essential to the entry-level technician. The HVAC/R program incorporates a blend of interactive lectures and hands-on laboratory exercises to develop meaningful knowledge and skills that students can put to immediate use on the job. Small class size ensures a free flow exchange of real world experiences with state of the art products and emerging theories. Hands on sessions in our fully equipped lab allow students to hone their operating and troubleshooting skills.

### **CAREER OPPORTUNITIES:**

Upon graduation, students are employable as:

- Air Conditioning Service Technician
- Commercial Service Technician
- HVAC Mechanic/Technician
- Oil Burner Installer/Mechanic/Technician
- Refrigeration Technician

### **HEATING, VENTILATION AND AIR CONDITIONING/REFRIGERATION GRADUATES HAVE BEEN EMPLOYED BY THE FOLLOWING COMPANIES:**

- Brooks and Brooks HVAC
- Better Comfort Systems HVAC
- SG Torrice HVAC
- National Mechanical Service HVAC
- Excel Mechanical Service HVAC

### **COLLEGE ARTICULATION AGREEMENTS:**

- Ma State Agreement HVAC
- Massasoit Community College
- New England Institute of Technology

### **LICENSES, CERTIFICATIONS, AND AFFILIATIONS:**

- EPA 608/609 Refrigerant Certifications
- R410 Refrigerant Certification (ESCO)
- OSHA 10-hour Occupational Health and Safety Construction Industry Training

## Course of Study

### *Heating, Ventilation and Air Conditioning/Refrigeration*

#### **HVX            Grade 9 Exploratory**

**2.0 credits**

The HVAC/R Exploratory Program is designed as a one week overview of the several disciplines within this trade. Students will explore the many career opportunities in the Heating, Ventilation, and Air Conditioning, and Refrigeration fields.

#### **HVXF-16        Grade 9 shop**

**6.0 credits**

Grade 9 students will be taught: Safety in the Shop, Refrigeration Fundamentals, Compressors, System Components, Basic Piping, Basic Electricity, Test Equipment & Methods, and Refrigerators

#### **HV2            Grade 10 Shop**

**30.0 credits**

Grade 10 students will develop skills in Residential Energy Systems, New Construction, Building Envelope, Ventilation, Window Units, Motor Controls and Drives, Five Wire Thermostats and Blueprint Reading.

#### **HV2R          Grade 10 Related**

**6.0 credits**

The purpose of this course is to prepare the HVAC/R student with the knowledge of theoretical background that applies to the basic principles of the industry. The course of instruction will provide a sound basis for the student to gain the necessary entry level skills. In the sequence of courses, this course is the first in a sequence of three. Students will be introduced to the following topics: Tools and Equipment, Tubing and Piping, Heat, Theory, Refrigeration and Refrigerants, OSHA, Domestic Refrigeration and Electrical Controls.

#### **HV3            Grade 11 Shop**

**36.0 credits**

Grade 11 students will develop skills in: Commercial Refrigeration, Advance Controls, Split Systems, Water Chillers, Reclaiming and Recovery License, Water Towers, Pneumatic Controls, Automotive AC License, and Solar Energy.

#### **HV2R (A,B,C) Grade 11 Related**

**6.0 credits**

The purpose of this course is to prepare the HVAC/R student with the knowledge of theoretical backgrounds that applies to the Refrigeration / Air-conditioning aspect of the industry. In the sequence of courses this is the second of the three courses. Students will be introduced to the following topics: 608 Federal Clean Air Act, Junior/Senior Project and Refrigeration System Components, (condensers, metering devices, evaporators, multiple evaporators, pressure switches, compressors, electrical controls, thermostats, etc.).

#### **HV4            Grade 12 Shop**

**36.0 credits**

Grade 12 students will develop skills in Steam and Hot Water Boilers, Oil Burners, Oil Storage and Distribution, Boiler Water Chemistry, Gas and Oil Furnaces, Heat and Cooling Load Calculation, Prep for State Oil and Burner Licensing.

#### **HV4R (A,B,C) Grade 12 Related**

**6.0 credits**

The purpose of this course is to prepare the HVAC/R student with the knowledge of theoretical background that applies to the heating aspect of the industry. In the sequence of courses, this course is the third of three. Students will be introduced to the following topics: 410A Refrigerant, Heat Pumps, Gas and Oil Heating, Calculating Heat Loads, (all in the light commercial and residential areas.)

## METAL FABRICATION

The primary goal of the Metal Fabrication shop is to provide the education necessary for students to become entry-level workers in the metal fabrication, welding, and sheet metal fields. Qualification and certification standards are based on AWS (*American Welding Society*) guidelines. The Northeast Metal Fabrication program is registered with the AWS as an Educational Institution Member and participates in the AWS **S.E.N.S.E** (*Schools Excelling through National Skill Standards Education*) program. This national standard provides guidelines for minimal learning objectives, performance conditions, evaluation, and learning objectives necessary to accomplish welder training.

Students will learn a variety of welding and cutting processes including: Shielded Metal Arc; Gas Tungsten Arc; Flux Cored Arc; standard and dual shield; Gas Metal Arc; Gas Welding. Cutting processes that are taught include: Carbon Arc; Plasma Arc; Flame cutting. As part of the program, students will learn to use state-of-the-art power equipment: shears; bending brakes; rollers; saws; a variety of bench and hand tools. Students will be taught to use these tools to cut, bend, and shape materials such as steel, stainless steel and aluminum. Applications of shop machinery are project based.

Shop-related classroom activities include, but are not limited to safe practices; shop math; basic electricity; blueprint reading; weld-symbol identification; and weld theory; as well as career related writing and communication skills. Additionally, students are given 10 hours of OSHA training and receive an OSHA safety certificate upon successful completion of the exam. The shop and related curriculum are correlated and exceed AWS recommendations. Students who complete the training program pass seven workmanship qualification tests using a variety of welding and cutting processes, pass two welder certification tests, and achieve a minimum score of 70 on the written examination, will be issued a national certificate from the AWS.

### **CAREER OPPORTUNITIES:**

Upon graduation, students are employable as:

- Body Welders
- Spot Welders
- Steel Welders
- Underwater Welders
- Metal Fabricator

### **LICENSES, CERTIFICATIONS, AND AFFILIATIONS:**

American Welding Society (AWS) Welder Certificate  
OSHA 10-hour Occupational Health and Safety Construction Industry Training

## Course of Study

### *Metal Fabrication*

#### **MFX            Grade 9 Exploratory**

**2.0 credits**

Grade 9 exploratory students will be introduced to trade orientation; personal and shop safety; basic shielded metal arc welding; and ornamental fabrication.

#### **MFXF-16        Grade 9 Shop**

**6.0 credits**

Students will continue to study personal and shop safety; basic shielded metal arc welding and ornamental fabrication. The students will also be introduced to shop math, the ruler, basic metal arc welding and oxyacetylene welding and cutting

#### **MF2            Grade 10 Shop**

**30.0 credits**

Grade 10 students learn welding shop safety as it relates to newly introduced topics and competencies including but not limited to oxyacetylene (welding ,brazing and cutting ), shielded metal arc welding, layout and fixtures, hand rolling, hand tools, material handling, power shear, powered ironworker, and gas metal arc welding.

#### **MF2R            Grade 10 Related**

**6.0 credits**

During the Grade 10 related course, students continue to study Oxyacetylene Welding and Shield Metal Arc with nationally recognized Hobart materials including safety precautions for oxyacetylene welding and cutting and shield metal arc, in conjunction with **AWS SENSE** Workmanship Qualification standards, Destructive testing using AWS standard bend testing, and Destructive testing using AWS standard break testing. The students will also prepare for successful completion of the OSHA 10 hour construction program certification.

#### **MF3            Grade 11 Shop**

**36.0 credits**

Grade 11 students will continue to learn welding shop safety as they experience lessons in Gas tungsten arc welding (steel, stainless and aluminum). Students will develop skills with Basic and CNC brake operations, powered rollers, cut off milling, plasma arc cutting, carbon arc cutting, advance metal forming, metal finishing, OSHA certification, and fabricating projects from blueprints. Understanding and compliance with welding code is emphasized.

#### **MF3R (A,B,C) Grade 11 Related**

**6.0 credits**

Grade 11 students study: Shielded Metal Arc Welding Advanced #2 and continue all position welding. Instruction in surfacing of steel, macro etching welds, guided bend-testing welds, Gas Tungsten Arc Welding is provided. Fundamentals of application, all position welding practice on mild steel, all position welding practice on aluminum is also addressed. The students will also be introduced to the plasma cam and will begin their work on the Junior/Senior Project.

#### **MF4            Grade 12 Shop**

**36.0 credits**

Grade 12 students will learn flux core arc welding, dual shield welding, basic metallurgy; testing and inspecting methods and procedures, hard facing, pipe welding (up and down), pipe fitting layout, CNC plasma cutting, portable welding, and structural and maintenance welding. Grade 12 students will strive for completion of the AWS S.E.N.S.E. program requirements.

#### **MF4R (A,B,C) Grade 12 Related**

**6.0 credits**

Highlights of the Grade 12 related curriculum includes a review and expansion of safety procedures and health precautions, as well as information on all position welding using dual shield, Air Carbon Arc Cutting and Gouging, The students complete work on their Junior/Senior Projects culminating in an oral presentation.



## **PLUMBING AND PIPEFITTING**

Plumbers are highly skilled, licensed craft persons who perform the design, layout and installation of water supply, sanitary drainage and hydronic heating systems. Learning activities for students include installation practices, science of the trade, blueprint reading, code compliance, cost profiles and business practices for both plumbing and pipefitting. Students are taught to use a variety of hand and power tools, culminating in the extensive participation in the community based work projects, the student house building program and/or the Cooperative education program (when eligible and available). Graduating students receive hours accumulated through the program towards Massachusetts licensing requirements.

### **CAREER OPPORTUNITIES:**

Upon graduation, students are employable as:

- Plumber
- Pipefitter
- Steamfitter
- Pipelayer

### **PLUMBING AND PIPEFITTING GRADUATES HAVE BEEN EMPLOYED BY THE FOLLOWING COMPANIES:**

- Cummings Properties, Woburn, MA
- F.W. Webb
- Heritage Heating & Plumbing, Stoneham, MA
- Local 12 Boston Plumbers Union, Boston, MA
- Seaver Plumbing & Heating, Woburn, MA
- Hackett Bros. Plumbing & Heating, Lynn, MA
- Kennedy Mechanical, Inc., Woburn, MA
- Houghton Plumbing & Heating, Stoneham, MA

### **LICENSES, CERTIFICATIONS, AND AFFILIATIONS:**

The graduate moves upward in the Commonwealth of Massachusetts Plumbers license tier system through the accumulation of 1700 working/ 300 classroom hours.

Corzan FlowGuard Godl Pipe and Fitting Certification

VIEGA National Certificate: ProPress and PEX Training

OSHA 10-hour Occupational Health and Safety Construction Industry Training

## Course of Study

### *Plumbing and Pipefitting*

#### **PLX            Grade 9 Exploratory**

**2.0 credits**

Grade 9 students will explore topics including safe use of tools and equipment during an introduction to plastic pipe and fittings, copper pipe and fittings and cast iron pipe and fittings. Drain waste and vent systems along with the water distribution systems will also be reviewed.

#### **PLXF-16        Grade 9 Shop**

**6.0 credits**

The Grade 9 course is designed to introduce and orient the student to the plumbing field by performing tasks that a person would experience in the Plumbing field. Students also participate in an introduction to the concepts covered in the 10 hour of OSHA certification examination.

#### **PL2            Grade 10**

**30.0 credits**

Grade 10 students' instruction begins with shop safety instructions and lessons in the proper use of tools. Topics to follow include introduction to plumbing blueprints; installing and testing drainage waste and vent piping; installation and testing of water supply piping and installing water heaters and fuel gas systems.

#### **PL2R            Grade 10 Related**

**6.0 credits**

The purpose of this course is to prepare students for attainment of a license in the plumbing field. Students will study plumbing theory including science, safety, mathematics, and plumbing code compliance.

#### **PL3            Grade 11 Shop**

**36.0 credits**

Grade 11 students will continue to master safety protocols and procedure while being introduced to residential hydronic heating. Eligible students may participate in off-site projects including the house building program (when available). Students may also be assigned to various shop projects and maintenance projects within the building.

#### **PL3R (A,B,C) Grade 11 Related**

**6.0 credits**

Eleventh Grade students will learn various methods of installation used in today's industry. Students will assemble drainage, water, and gas supply systems as prescribed by the Massachusetts State Code.

#### **PL4            Grade 12 Shop**

**36.0 credits**

Grade 12 students will continue to learn advanced shop safety and proper use of tools. Students will continue progression to advanced areas of the plumbing and heating industry. The offsite Cooperative Education Program may be available to eligible students.

#### **PL4R (A,B,C) Grade 12 Related**

**6.0 credits**

Grade 12 students will learn how to sketch and read mechanical drawings and will design plumbing systems applying all of the competencies learned in tenth and eleventh grades. Grade 12 students will also complete requirements consistent with the Junior/Senior Project

## **Robotics and Automation**

Robotics and Automation Technology is growing profession which combines components of engineering (mechanical & electrical), computer science and programming. There is an emphasis on problem solving in the design, debugging, and troubleshooting of systems. Students learn Computer Aided Design Drawing (CAD) as well as rapid prototyping through 3-D printing. The program includes hands-on and theoretical curriculum that covers analog and digital control electronics. Also included are Programmable Logic Controllers (PLCs) and their use in automation and manufacturing.

This curriculum incorporates elements and principles of mathematics, physics and chemistry as they apply to the design and operation of electromechanical systems. Robotic systems are utilized for many applications in manufacturing and assembly, defense, space and underwater exploration, and the constantly changing service applications. Students will have the opportunity to compete in numerous SkillsUSA District, State and National competitions while progressing through this program.

Career opportunities in Robotics and Automation continue to play an increasing role in manufacturing and the manufacturing industry trained professionals who can improve processes, design and develop new machines and products, and manage repairs and operations.

Students completing this program will have a strong background preparing them to go on to college for an engineering degree or move on to a career as a technician.

### **CAREER OPPORTUNITIES:**

Upon graduation, students are employable as:

- Robotics Technicians
- Industrial Automation Maintenance Technicians
- Field Service Technicians
- Plant Maintenance Technicians
- Electronics Assembly Technicians

### **ROBOTICS AND AUTOMATION GRADUATES HAVE BEEN EMPLOYED BY THE FOLLOWING COMPANIES:**

**This is a new program (2017-2018). The Class of 2020 will be the first graduates.**

### **LICENSES, CERTIFICATIONS, AND AFFILIATIONS:**

- Fanuc Robotics
- Yaskawa Motoman Robotics
- SMB Mechatronics
- OSHA 10-hour Occupational Health and Safety Construction Industry Training

## Course of Study

### *Robotics and Automation*

**RAX                      Grade 9 Exploratory                      2.0 credits**

Grade 9 students are introduced to the Robotics and Automation field and its many career opportunities. Basic electrical concepts and circuits are introduced and demonstrated in the shop. Through the hands-on construction of simple electronic projects, microcontrollers and educational robots, students learn proper hand tool use. Students also perform activities and exercises exposing them to computer programming and robotic fundamentals.

**RAXF                      Grade 9 Shop                      6.0 credits**

Grade 9 students continue with basic electrical concepts and circuits after the shop has been chosen. Students continue to perform activities and exercises using computer and robotic fundamentals. OSHA safety certification is performed and safe operating practices in shop are discussed in detail.

**RA2                      Grade 10 Shop                      30.0 credits**

Grade 10 students cover AC/DC electronic circuits and components, including the use of Ohm's Law, Watt's Law, and Kirchhoff's Laws and network theorems in the study of series, parallel, series/parallel and voltage divider circuits. Study continues through the more advanced topics of AC/DC electronics, including the use of such components as capacitors, resistors, transistors, diodes, inductors and LED's. Students are also introduced to integrated circuits such as the 555 timer and 4017 decade counter. Students will be introduced to mechanical concepts and fluid power.

**RA2R                      Grade 10 Related                      6.0 credits**

Grade 10 students are introduced to industrial DC circuits and components while learning the proper industrial wiring and layout techniques. Use of proper hand tooling and electronic test equipment is taught for troubleshooting skills. Combining their knowledge of discrete electronic components, and integrated circuits, projects are wired and completed using breadboarding techniques. Students learn to program a PLC (programmable logic controller) and apply the program to real world simulation exercises. Student will also build projects using proper fabrication and soldering techniques.

**RA3                      Grade 11 Shop                      36.0 credits**

Grade 11 students build upon their knowledge of both semiconductor and digital components and circuits. Projects are chosen to enable student proficiency in the construction and trouble-shooting of digital and analog circuits. Students will design, layout and fabricate their own printed circuit boards. Students will work in the robotics and mechatronics areas through use of actual factory trainers by constructing real world scenarios using PLC programming combined with electric pneumatic and hydraulic power.

**RA3R (A,B,C) Grade 11 Related                      6.0 credits**

Grade 11 students move from the introduction to basic semiconductor devices and digital concepts to more advanced circuits. The students spend time on semiconductor devices and circuits, including the study of diodes, LEDs, bipolar junction transistor BJTs, field effect, transistor FETs, operational amplifiers and rectifiers. Students discover how these devices are used in power supplies, voltage regulators, small and large signal amplifiers, oscillators and control circuits. Another focus is digital devices and circuits, ranging from binary and hexadecimal numbering systems and basic gates to more advanced devices and circuits such as flip-flops, shift registers, and binary counters. Truth tables, timing diagrams, Boolean algebra and Karnaugh Maps will be used in analyzing of digital circuits. Students are also introduced to Microprocessors, microcontrollers, and programmable logic devices. Students will learn fluid power such as pneumatics and hydraulics.

**RA4                      Grade 12 Shop                      36.0 credits**

Grade 12 students become more proficient in projects covering advanced semiconductors and digital electronics. Advanced manufacturing scenarios using PLCs, mechatronics trainers, and industrial robots. The knowledge gained throughout previous courses will be used to complete projects to industry standards. Students who are eligible for co-op spend their shop weeks gaining valuable on-the-job training at various manufacturing firms.

**RA4R (A,B,C) Grade 12 Related****6.0 credits**

Grade 12 students continue the study of the semiconductors and digital electronics started in Junior year. Advanced semiconductor topics in the areas of amplifiers, oscillators, and switching and control circuits are studied. Students get more involved with microcontrollers, programmable logic devices and advanced topics in industrial automation. Students will continue with the study of mechanical concepts. Students prepare for careers by learning employability skills, automation career, and portfolio/resume preparation.

# NORTHEAST METROPOLITAN REGIONAL VOCATIONAL SCHOOL

## ADMISSION POLICY

August 14, 2008

### INTRODUCTORY STATEMENT

Northeast Metropolitan Regional Vocational School (Northeast) is a selective vocational technical high school that serves a twelve community district including: Chelsea, Malden, Melrose, North Reading, Reading, Revere, Saugus, Stoneham, Wakefield, Winchester, Winthrop, and Woburn. An admission process is necessary in vocational technical schools where space is a limiting factor. Vocational technical laboratories (shops) are designed and equipped to serve a specific maximum number of students safely. Consequently, a complex of such laboratories lacks both the space and flexibility to accommodate the possible needs and/or interests of all applicants. Therefore, a selection process is necessary. All applicants to grades nine through twelve at Northeast Metro Tech High School will be evaluated using the criteria contained in this Admission Policy.

The following policy, in compliance with Massachusetts General Law (M.G.L.) Chapter 74 Vocational Technical Education Regulations (CMR 603 4.03 (6) is an official school document as approved by the Northeast Metropolitan Regional Vocational School Committee on August 14, 2008.

### EQUAL EDUCATIONAL OPPORTUNITY

Northeast Metropolitan Regional Vocational School admits students and makes available to them its advantages, privileges and courses of study without regard to race, color, sex, religion, national origin, sexual orientation or disability.

Applicants with disabilities and those applicants with limited English proficiency will be provided with the full range of assistance during the entire application and admission process.

Upon the request of an applicant of limited English proficiency, a qualified representative from the school will assist the applicant in completing the necessary forms and provide interpreting services during the entire application and admission process.

Applicants with disabilities may voluntarily self-identify for the purpose of requesting reasonable accommodations during the entire application and admission process.

Information on limited English proficiency and disability submitted voluntarily by the applicant, for the purpose of receiving assistance and accommodations during the application and admission process, will not affect admission to the school.

### ELIGIBILITY

Northeast Metropolitan Regional Vocational School will determine the number of openings for grades 9-12. Any eighth, ninth, tenth or eleventh grade student who is a resident of the Northeast Metropolitan Regional School District (Chelsea, Malden, Melrose, North Reading, Reading, Revere, Saugus, Stoneham, Wakefield, Winchester, Winthrop, Woburn) who expects to be promoted to the grade they seek to enter by their local district is eligible to apply for fall admission or admission during the school year subject to the availability of openings at Northeast Metropolitan Regional Vocational School. Only ninth grade students will be accepted for entry for January admissions to replace withdrawn students. All applicants will be evaluated using the criteria contained in this Admission Policy and may be denied admission if their discipline record contains infractions involving weapons, illegal drugs, assault on a staff member, or school threats.

Priority for admission is given to Northeast Metropolitan Regional Vocational School District residents according to the District Agreement. The sending school or the parent/guardian may be asked to provide written documentation of residency if deemed necessary by the Northeast Administration.

Students who are not residents of the Northeast Metropolitan Regional Vocational School District are eligible to apply for fall admission, provided they expect to be promoted to the grade they seek to enter by their local district and expect to pass courses in English language arts or the equivalent and mathematics for the school year preceding their enrollment at Northeast. Non-resident students will be evaluated using the criteria contained in this Admission Policy and may be denied admission if their discipline record contains infractions involving weapons, illegal drugs, assault on a staff member, or school threats. Nonresident applicants must follow the process outlined in the Nonresident Student Enrollment section on page 3 of this policy.

Transfer students from other vocational technical schools are eligible to apply for fall admission or admission during the school year to grades 9-12 at Northeast provided they expect to be promoted to the grade they seek to enter by their local district and expect to pass courses in English language arts or the equivalent and mathematics for the school year preceding their enrollment at Northeast. Transfer applications will be evaluated according to the provisions of this Admission Policy and may be denied admission if their discipline record contains infractions involving weapons, illegal drugs, assault on a staff member, or school threats.

### **School Choice**

The Northeast Metropolitan Regional Vocational School Committee has authorized five (5) grade 9 seats for School Choice applicants during the fall admission cycle. The Northeast School Committee will vote by March 1<sup>st</sup> of each year if changes in the School Choice policy are to be made for the admissions cycle for the following school year. All school choice applicants will be evaluated and ranked using the criteria set forth in this Admissions Policy.

Students who begin their enrollment as School Choice students may remain as School Choice students throughout their enrollment at Northeast providing they continue to reside outside of the District.

Students who begin their enrollment as District residents and move outside of the District during their enrollment, may either request to become School Choice students or apply to attend Northeast as a nonresident student according to the *Vocational Technical Education Nonresident Student Tuition Process* pursuant to M.G.L. c.74. (See Nonresident Student Enrollment below.)

Students who begin their enrollment as District residents and move outside of the District during their enrollment, who request to become School Choice students at Northeast, may be allowed to do so providing they continue to reside outside of the District.

All School Choice students must be able to arrange transportation to school or to a District bus stop.

### **Nonresident Student Enrollment**

A nonresident student seeking admission to Northeast in grades 9, 10, 11, and 12 under M.G.L. c.74, Sections 7 and 7C must follow the admission process outlined in this Admission policy. All nonresidents will be evaluated and ranked using the criteria set forth in this Admissions Policy.

Students who begin their enrollment as District residents and move outside of the District during their enrollment, who request to remain at Northeast as nonresidents under M.G.L. c. 74, Section 7 and 7C will be allowed to do so providing that they obtain approval from the Superintendent of the student's District of Residence in accordance with the MA Department of Education *Guidelines for the Vocational Technical Education program Nonresident Student Tuition Process*.

In all cases, nonresident applicants must file a *Chapter 74 Vocational Technical Nonresident Student Tuition Application* with the Superintendent of the student's district of residence in accordance with the MA Department of Education Guidelines for the *Vocational Technical Education Program Nonresident Student Tuition Process* pursuant to M.G.L. c. 74.

If the student's parent/guardian finds that the decision of the Superintendent of the District of Residence is contrary to law, regulations, Board of Education or Department of Education policy, the application may be forwarded to the Department of Education for review within 10 business days of its receipt from the

District of Residence in accordance with the *Guidelines for the Vocational Technical Education Program Nonresident Student tuition Process* pursuant to M.G.L. c. 74.

M.G.L. c. 74 Section 8A requires that transportation be provided by the municipality of residence to students admitted to Northeast as nonresidents under M.G.L. c.74, Sections 7 and 7C.

### **ORGANIZATIONAL STRUCTURE**

Northeast Metropolitan Regional Vocational School is a public regional vocational technical school located at 100 Hemlock Road in Wakefield, Massachusetts. Northeast is accredited by the New England Association of Schools and Colleges and committed to providing quality vocational technical programs.

It is the responsibility of the Northeast Superintendent Director to supervise the administration of the policies and procedures required to admit and enroll applicants in conformity with this Admission Policy.

Northeast has an Admission Committee appointed by the Superintendent-Director. The committee consists of:

- Administrator of Student Services
- Special Education Administrator
- Dean of Students
- School Adjustment Counselor

Responsibilities of the Admissions Committee include:

- determination of standards for admission
- development and implementation of admission procedures
- processing of applications
- ranking of students
- acceptance of students according to the procedure and criteria in the admission policy
- establishment and maintenance of a waiting list of acceptable candidates

The Administrator of Student Services is responsible for receiving all applications for admissions and communicating application status information to parents, students and referring school districts.

### **Northeast Metropolitan Regional Vocational School District Agreement:**

The Northeast Metropolitan Regional Vocational School District governs the admission of school district residents. Each member town's number of seats in the ninth grade class will be calculated annually according to the ratio of that town's grade 9-12 enrollment (private and public) as compared to the total 9-12 grade enrollment in the District, according to October 1 data as reported by each community Superintendent of Schools. The enrollment ratio will be applied to the total number of available seats to determine each member town's quota. (Example: Community enrollment = a, total district enrollment = b. Community quota is calculated as follows:  $a/b = c \times \text{total district seats available}$ . Then,  $c \times 325$  (district seats) = d (quota))



Applications for fall admission are due into the Admissions Office by the previous March 1<sup>st</sup>. Based on the number of applications received by the March 1<sup>st</sup> deadline, the Admissions Committee will determine the number of vacancies unclaimed by member communities (surplus enrollment).

Seventy-five percent (75%) of the surplus enrollment will be distributed in the first round of acceptances in April of each year. The remaining twenty-five percent (25%) of the surplus enrollment will be distributed by May 15<sup>th</sup> of each year. Distribution of additional surplus enrollment seats due to decline of acceptance will be done in accordance with the selection process outlined in Section VIII of this Admission Policy.

### **RECRUITMENT PROCESS**

The Northeast Metropolitan Regional Vocational School District disseminates information about the school through a variety of methods. The Recruitment Coordinator is responsible for coordinating all recruitment activities.

Visitations with an informational video presentation to 8th grade classes in local schools by Northeast staff from October to November are scheduled.

An Open House during the fall is scheduled. Prospective students and their parent(s)/guardian(s) have an opportunity to visit all vocational-technical programs and speak with teachers as well as view a presentation about all offerings.

Parent(s)/guardian(s) may schedule individual visits at a mutually convenient time.

Brochures, CD's, and Programs of Study, which describe the vocational technical programs including academic courses, graduation requirements, sports, cooperative education, and special education resources, are distributed during the 8th grade visitations, the Open House, and through individual mailings when requested.

After school vocational exploratory days are offered to 8<sup>th</sup> grade students encouraging students to visit vocational areas and participate in hands-on activities.

A Counselor's Breakfast is held each fall to give all sending school counselors and principals an opportunity to visit Northeast. At that time, updated information is provided regarding the Admissions process, questions are addressed and an opportunity to tour the facility is offered.

In January, an evening Coffee Hour is offered to meet with parents who did not participate in the Open House or who have specific questions regarding admissions or enrollment.

Recruitment personnel will visit individual middle schools to address small groups of parents who have specific questions regarding admissions or enrollment.

### **APPLICATION PROCESS**

#### **APPLICATION PROCESS FOR FALL ADMISSION TO THE NINTH, TENTH, ELEVENTH AND TWELFTH GRADES**

**In the fall of each year, Northeast accepts the grade 9 class and a number of grade 10 students to replace students who have withdrawn or to fill openings in available career technical areas. School counselors should contact the Admissions Office to identify the availability of eleventh and twelfth grade openings before initiating the application process with inquiring students.**

1. Students interested in applying to Northeast Metropolitan Regional Vocational School for fall admission to the ninth, tenth, eleventh, or twelfth grades must:
  - a. obtain an application from their local school Guidance Counselor as early in the school

year as possible. If application is unavailable at local school, contact the Northeast Admission Office, 100 Hemlock Road, Wakefield, MA 01880 (781)-246-0810 to request to have one mailed.

- b. return the completed application form to their local school Guidance Counselor by the deadline set by the Guidance Counselor.
2. It is the responsibility of the local school Guidance Counselor to:
    - a. complete the school portion of the application form.
    - b. forward the completed applications to the Admissions Office at Northeast by March 1st. Complete applications include:
      - Completed application form (including required signatures) along with copies of grade reports, attendance/tardy records, and full discipline records for the previous full year and the current year through the midpoint of the year.
      - For applications to grade 9 (fall admission), the final averages of grade 7 as well as grades to date from terms 1 & 2 of grade 8 in English language arts, social studies, math and science from the local school report card/transcript are required. For applications to grade 10, 11, and 12 (fall admission) the final grade averages of the previous school year and grades to date for terms 1 & 2 of the current school year in English language arts, social studies, math and science from the local school report card/transcript is required.
      - For applications to grade 9 (fall admission), the total number of grade 7 and terms 1 & 2 grade 8 unexcused absences and tardies from the local school report card/transcript are required.
      - For applications to grades 10, 11, and 12 (fall admission) the sum of the previous school year and terms 1 & 2 current school year unexcused absences and tardies from the local school report card/transcript is required.
    - (iv) For applications to grade 9 (fall admission), the discipline record of grade 7 and terms 1 & 2 grade 8 identifying behavioral infractions and discipline actions taken from the local school district. For applications to grades 10, 11, & 12 (fall admission) the discipline record of the previous school year and terms 1 & 2 of the current school year identifying behavioral infractions and discipline actions taken from the local school district.
    - (v) For applications to grade 9, 10, 11, & 12 (fall admission), the local school Guidance Counselor's or Principal's recommendation is required.
  3. If incomplete applications are received, the following procedures will be followed:
    - The Admission Office at Northeast Metro Tech High School will notify the local school Guidance Counselor responsible for submitting the application that the application is incomplete and will request completion.
    - The applicant's parent(s)/guardian(s) will be notified by the Northeast Admission Office in the event that the problem is not resolved by the local school Guidance Counselor.
    - If after notifying the local school Guidance Counselor and parent(s)/guardian(s), the application remains incomplete for ten school days, the application will be voided.

### **APPLICATION PROCESS FOR ADMISSION TO THE NINTH, TENTH, ELEVENTH AND TWELTH GRADES FOR THE CURRENT SCHOOL YEAR**

**Northeast accepts grade 9 applicants in January of each year to replace students who have withdrawn. School counselors should contact the Admissions Office to identify the availability of current school year openings for grades 10, 11, and 12 before initiating the application process with inquiring students.**

1. Students interested in applying to Northeast Metropolitan Regional Vocational School for admission for the current school year must:
  - a. obtain an application from their local school Guidance Counselor.
  - b. return the completed application form to their local school Guidance Counselor by the deadline set by the Guidance Counselor.

2. It is the responsibility of the local school Guidance Counselor to:
  - a. complete their portion of the application form.
  - b. forward the completed applications to the Admissions Office at Northeast Metropolitan Regional Vocational School. Complete applications include:
    - (i) completed application form (including required signatures)
    - (ii) For applications to grades 9, 10, 11, & 12 (admission during the school year) the current school year to the date of the application marks in English language arts, social studies, math and science from the local school report card/ transcript are required.

For applications to grades 9, 10, 11, & 12 (admission during the school year) the current school year to the date of the application total unexcused absences and tardies from the local school report card/transcript are required.

For applications to grades 9, 10, 11, & 12 (admission during the school year) the discipline record identifying behavioral infractions and discipline actions taken from the local school district for the prior school year and current school year to the date of the application are required.

For applications to grades 9, 10, 11, & 12 (admission during the school year) the local school Guidance Counselor or Principal's recommendation is required.
3. If incomplete applications are received, the following procedures will be followed:
  - The Northeast Metropolitan Regional Vocational School Admission Office will notify the local school Guidance Counselor responsible for submitting the application, that the application is incomplete and will request completion.
  - The applicant's parent(s)/guardian(s) will be notified by the Northeast Admission Office in the event the problem is not resolved by the local school Guidance Counselor.
  - If after notifying the local school Guidance Counselor and parent(s)/guardian(s), the application remains incomplete for ten school days, the application will be voided.

### **LATE APPLICATIONS**

Applications received for fall admissions after March 1st and before August 1st will be evaluated using the same criteria as other applications. The composite scores of late applicants will then be integrated in rank order on the established waiting list. For grade 9, review of applications for April acceptances will include all applications received by March 1st. Review for May 15th acceptances will include applications received by May 1st. Final acceptances to fill declined seats will be completed by August 15th and will include review of applications received by August 1st. When a waiting list of at least 50 students has been established, no additional names will be added to the waiting list after August 1st. An applicant who applies after August 1st, when the waiting list is 50 or more names, will receive a letter indicating that there is no space available. If upon school opening, accepted students decline, those seats will be refilled from the waiting list by September 15th. Upper class applications received by March 1st will be reviewed by May 1st after vocational openings for the next school year have been identified.

### **WITHDRAWN STUDENTS**

Students who withdraw from Northeast Metropolitan Regional Vocational School and who are attending another high school may reapply to Northeast for fall or current year admission following the procedures contained in this admission policy and will be evaluated using the criteria contained in this Admission Policy. Withdrawn students who are not attending another high school may reapply to Northeast for fall admission only. Space availability in the vocational area will be a factor of readmission. Applications submitted by students who have withdrawn from Northeast will be evaluated according to the provisions of this Admission Policy and may be denied admission if their discipline record contains infractions involving weapons, illegal drugs, assault on a staff members, or school threats.

## **SELECTION CRITERIA**

Completed applications are processed by the Admission Committee using weighted admissions criteria. Each applicant will be assigned a score derived by obtaining the sum of the sub-scores of the following criteria (scholastic achievement, attendance, school discipline/conduct, counselor recommendation):

### **A. Scholastic Achievement: Maximum 30 points**

<b>Grade Averages</b>	<b>Points</b>
A (90 – 100)	30
B (80 – 89)	20
C/C+ (75 – 79)	15
C- (70 – 74)	10
D (65 – 69)	05
F (00 – 64)	00

For applications to grade 9 (fall admission), the final average of grade 7 and grades from terms 1 & 2 of grade 8 in English, social studies, mathematics and science from the local school report cards are used. For applications to grades 10, 11, & 12 (fall admission) the final average of the previous school year and grades from terms 1 & 2 of the current school year in English, social studies, mathematics and science from the local school report cards are used. For applications to grades 9, 10, 11, & 12 (admission during the school year) grades from the current school year to the date of the application in English, social studies, mathematics and science from the local school report cards are used. Points are assigned to each subject area identified above for each school year and then averaged to obtain a scholastic achievement grade not to exceed 30 points.

### **B. Attendance: Maximum 30 points**

<b>Number of Unexcused Absences and Tardies</b>	<b>Points</b>
0 – 10	30
11 – 20	20
21 – 30	10
31 – 40	5
41 plus	0

For applications to grade 9 (fall admission), the sum of grade 7 and terms 1 & 2 grade 8 total unexcused absences and tardies from the local school report card/transcript are used. For applications to grades 10, 11, & 12 (fall admission) the sum of the previous school year and terms 1 & 2 current school year total unexcused absences and tardies from the local school report card/transcript are used. For applications to grades 9, 10, 11, & 12 (admission during the school year) the current school year to the date of the application, total unexcused absences and tardies from the local school report card/transcript are used.

**C. School Discipline/Conduct: Maximum 30 points**

<b>Discipline/Conduct Rating</b>	<b>Points</b>
No Discipline Incidents	30
1 -3 Minor Incidents	20
4 – 6 Minor Incidents / 1 Suspension	10
2 Suspensions	5
More than 2 Suspensions	0

For applications to grade 9 (fall admission), the full discipline records of grade 7 and terms 1 & 2 of grade 8 from the local school administrative office are used. For applications to grades 10, 11 and 12 (fall admission) the discipline records of the previous school year and terms 1 & 2 of the current school year from the local school administrative office are used. For applications to grades 9, 10, 11 and 12 (admission during the school year) the previous school year and current school year discipline record to the date of the application from the local school administrative office are used.

**D. Local Guidance Counselor's Recommendation: Maximum 10 points**

<b>Rating</b>	<b>Points</b>
Excellent	10
Above Average	8
Average	6
Below Average	4
Poor	2

After each sub-score (for scholastic achievement, attendance, school discipline/conduct, counselor recommendation) is calculated, the points are totaled for each applicant. A maximum total of one hundred (100) points can be earned.

## **SELECTION PROCESS**

The Admission Committee at Northeast Metropolitan Regional Vocational School will examine, discuss and make recommendations for action on the applicants.

The Admission Committee considers scholastic achievement, attendance, school behavior, local Guidance Counselor's recommendations. Applications are reviewed, processed and assigned points by grade level.

Acceptable candidates shall be those who achieve at least a minimum "Total Rating Score" of 50 points, as determined by the Admissions Committee.

After a point total for each applicant has been determined, all applicants are placed in order of their "point total" and town of residence. School Choice applicants are placed in rank order. Applicants are then accepted in order of the point total they have achieved until quota is met. The applicant with the highest point total is accepted first, the applicant with the second highest point total is accepted second, and so on until all seats are filled. All applicants are accepted, declined, or placed on a waiting list. If openings occur to place a town below their quota, the seats are filled by accepting applicants from the waiting list from that town.

The distribution of surplus enrollment seats will be determined by utilizing the same enrollment ratios that determine the initial quotas. Applicants, like those accepted earlier, are accepted in order of their place on the waiting list determined by the total points given according to the selection criteria. Late applicant scores will be integrated in rank order and accepted in order of their place on the waiting list.

All applicants for Grade 9 whose applications are received by Northeast Metropolitan Regional School District by March 1 are notified of their status by a letter to their parents/guardians and their local school Guidance Counselor by mid-April. Applicants whose applications are not received by Northeast by March 1st will receive a letter informing them of their status within one month of receipt of their application.

Upper class applications received by March 1<sup>st</sup> will be reviewed by May 1st after vocational openings for the next school year have been identified. Students will be considered for their first three vocational choices as indicated on their applications. Space availability in vocational areas will be a determining factor in selection. Letters regarding admission status will be sent to students and parents by June 1st of each year. In the event that there are more acceptable students than spaces available, a waiting list will be maintained. The waiting list will be listed by career technical area and students will be listed according to point totals.

**All letters of acceptance will be conditional pending submission of final grades and promotion status.**

## **ENROLLMENT**

In order to enroll at Northeast Metropolitan Regional Vocational School for the fall, applicants must have been promoted to the grade they wish to enter by their local school district. In addition, they must have passed courses in English language arts or the equivalent and mathematics for the school year immediately preceding their enrollment at Northeast. The Northeast Admissions Department will request final report cards/transcripts of all accepted students to verify promotion and passing final grades.

If accepted students fail English or math as a final grade, they must attend summer school and present a certificate that indicates they have successfully passed the failed course(s) to retain their seat.

**Prior to the first day of school, in accordance with Massachusetts State Law, updated Immunization Records must be received in the Northeast Nurse's Office for students to begin their enrollment.**

All accepted students will be scheduled to take the Stanford 9 Achievement test for academic class placement purposes. Testing will be offered in April/May, June, and August. Late accepts or students who missed testing dates will be tested during school in September. Once enrolled, all new students to Northeast will participate in the Kuder Vocational Assessment system.

### **VOCATIONAL TECHNICAL PROGRAM PLACEMENT**

All ninth graders who enroll in Northeast Metro Tech High School participate in a vocational technical exploratory program designed to help them learn about their talents and interests relative to a variety of different vocational-technical programs. On their applications, students list their top 8 exploratory choices. They are scheduled to explore each of those eight choices and seven additional vocational areas for one week through the first three terms of the school year, a total of 15 weeks of an Exploratory Program.

An evaluative rubric is used by each exploratory teacher to fairly assess all students as they rotate through the exploratory program. Students are evaluated and scored on a 100 point scale by vocational teachers during each week in each shop placement. The scoring scale used assigns points as follows: 10-12 Poor, 13-15 Fair, 16-18 Good, 19-20 Excellent.

The students are evaluated for performance in the Related Theory and Shop areas in the following categories: Related Theory – (1) completion and performance on class assignments, tests, and/or homework; and (2) class behavior; Shop – (3) performance on shop assignments; (4) shop behavior; and (5) shop safety (demonstration of proper use of tools, instruments, materials or supplies). Five points are deducted from the total score for each day absent. A make-up process for the exploratory program will be available to students.

The maximum point total for each exploratory week is 100 points. The maximum possible point total for the exploratory program is  $(15 \times 100) = 1500$  points. The passing grade for each exploratory week is a 65.

At the end of the fifteen-week exploratory period, each student selects his/her program of choice by rank ordering (from high interest to low interest) all of the shops they have explored where passing grades (65 or above) have been received.

The computer then sorts all student choices attempting to give each student their first choice. The rank order of students entering each shop is based on the numerical grade earned from the exploratory week. If a shop enrollment reaches capacity and is closed to a student, the computer attempts to assign the student to his/her second choice, third choice, etc. until placed. If students are tied in points to enter a shop, the tie is broken by the total number of exploratory points earned throughout their entire exploratory program. If a tie remains, the academic grade point average will be used to break the tie.

Students who wish to transfer from one shop to another during the school year may apply for transfer. Transfer requests will be considered subject to the availability of openings in the requested shops. Each transfer applicant will be interviewed and counseled individually to determine the appropriateness of the transfer for the particular student.

### **REVIEW and APPEALS**

#### **Student Not Accepted into School/Placed on Waiting List**

The applicant's parent(s)/guardian(s), upon receipt of a letter from Northeast Metropolitan Regional Vocational School indicating that the applicant was not accepted or placed on a waiting list, may request a review of the decision by sending a letter requesting a review to the Administrator of Student Services within thirty days of the receipt of the letter. The Administrator of Student Services will respond in writing to the letter with the findings of the review within thirty days.

If after the review, the parent/guardian wishes to appeal the findings of the review they may do so by sending a letter requesting that they be scheduled to appear before the Superintendent-Director to appeal the Administrator of Student Services' findings. The Superintendent-Director will respond in writing to the parent/guardian with a scheduled date for the appeal within thirty days of the receipt of the letter. After hearing the appeal, the Superintendent-Director will respond in writing with a decision on the appeal within thirty days of the meeting when the appeal was presented.

**Student Not Accepted into Selected Vocational Shop Area/Placed on Shop Waiting List**

The applicant's parent/guardian, upon receipt of written notification from Northeast Metropolitan Regional Vocational School indicating that the applicant was not accepted or placed on a waiting list for a particular program (shop)(major), may request a review of the decision by sending a letter requesting a review to the Principal/Deputy-Director within thirty days of the receipt of the letter. The Principal/Deputy-Director will respond in writing to the letter with the findings of the review within thirty days.



## ATHLETIC PROGRAM

The Northeast Metro Tech athletic program offers a wide array of activities for both boys and girls and encourages participation, skill development, and a positive competitive philosophy. Late afternoon transportation is provided when after school practices or events are scheduled to enable students to become involved. The following list identifies the sports available throughout the year:

Baseball	(Freshman, JV, Varsity)
Basketball - Boys	(Freshman, JV, Varsity)
Basketball - Girls	(Freshman, JV, Varsity)
Cheerleading	(Football, Basketball, Hockey)
Cross Country Track	(Co-ed Varsity)
Football	(Freshman, JV, Varsity)
Golf	(Varsity)
Hockey	(JV, Varsity)
Indoor Track & Field	(Co-ed Varsity)
Lacrosse - Boys	(JV, Varsity)
Lacrosse – Girls	(Varsity (2019), JV)
Soccer - Boys	(Freshman, JV, Varsity)
Soccer - Girls	(Freshman, JV, Varsity)
Softball	(Freshman, JV, Varsity)
Swimming - Co-ed	(Varsity)
Outdoor Track & Field	(Co-ed Varsity)
Volleyball - Girls	(Freshman, JV, Varsity)

An intramural program of sports and activities is run in the fall and the spring for students who are interested in participating in activities on a less competitive level. For addition information see our website at [www.northeastmetrotech.com](http://www.northeastmetrotech.com) or contact the Athletic Director at 781-246-0810 x1251.

## **CLUBS AND ACTIVITIES**

### **CLASS OFFICERS AND ADVISORS**

Each of the four classes at Northeast elects four officers on an annual basis: president, vice president, secretary, and treasurer. Class officers, together with a faculty advisor for each class, are responsible for the extracurricular activities of the class throughout the year.

### **EQUITY CLUB**

Northeast offers a school-based support group that provides students with a place to meet and talk about issues related to sexual orientation. The group works to create a positive school climate, making Northeast a safe place for all students.

### **NATIONAL HONOR SOCIETY**

The Northeast Honor Society is an academic society known as the Northeast Artisans. The purpose of the chapter is to create enthusiasm for scholarship, to stimulate a desire to render service, to promote leadership, and to develop character in the students of secondary schools. Regular meetings will be held during the school year. The chapter will determine one or more service projects each year. All projects will fulfill a need within the school or community and each member will be responsible for choosing and participating in a service project which reflects his or her particular talents or interests in addition to chapter-wide activities. Student members must fulfill a minimum of forty hours of community service per year.

### **NATIONAL VOCATIONAL TECHNICAL HONOR SOCIETY**

Northeast Metro Tech has a chapter in the National Vocational - Technical Honor Society. The chapter strives to promote the ideals of honesty, service, leadership, and skill development among America's future work force; to reward scholastic achievement in occupational, vocational and/or technical education; to assist Society members in their pursuit of career and educational goals; to help build and maintain a stronger, more positive image for vocational and technical students, programs and schools in the local community and throughout the nation; to encourage the practice of high responsibility among the membership; to help member schools to initiate and maintain strong working partnerships with local institutions of business, industry and commerce. Regular meetings are held throughout the year and the chapter will determine the service projects it will sponsor throughout the year. All members are to participate in at least one of these projects to fulfill their commitment of community service.

### **SKILLS USA**

The Skills USA is a national student organization at Northeast specifically for trade, technical, and health occupation students. It is an organization designed for and run by vocational students. Skills USA offers prestige and recognition through a program of awards and contests which start at class and shop level and lead through state and national competition. Some skill areas even have international competition. Skills USA advisors are found in each trade area and all students are encouraged to become members. Skills USA encourages a strong work ethic and an opportunity for students to learn more about their strengths in their trade/career areas. For more information visit [www.SkillsUSA.org](http://www.SkillsUSA.org)

### **STUDENT COUNCIL**

The Student Council is made up of representatives from all four classes and a faculty advisor is appointed by the principal to provide guidance and leadership. Students interested in becoming members fill out applications and the existing council members vote to accept new members. The president, vice president, secretary, and treasurer are elected by the council membership and these four elected officers compromise the executive board which meets with the principal to discuss school issues on an as needed basis. The Student Council's primary responsibility is to promote school spirit and unity and to represent the entire student body with regard to school issues to the

faculty and the administration. Two council members represent Northeast at monthly meetings of the Massachusetts Student Council Association and the president attends and participates at the monthly Northeast School Committee meetings.

**STUDENTS AGAINST DESTRUCTIVE DECISIONS (SADD)**

The Northeast Chapter of SADD works to promote safe decisions regarding drug and alcohol use and safe driving. Students are involved in peer training activities and are planning positive events that students can be involved in without peer pressure to use drugs or alcohol. Northeast students are working to promote a safe environment at Northeast and to use positive peer pressure to help kids make good decisions.

## **SUPPORT SERVICES**

### **KICK-OFF MENTORING PROGRAM:**

Northeast has a peer mentoring program to provide support for freshmen by upper class mentors. The mentors design and run the first day of school for freshmen. They also meet with freshmen throughout the year to provide support and to discuss teen issues

### **NON-TRADITIONAL SUPPORT PROGRAM**

A support program around the issue of gender equity has been established to work with students of all grades. Workshops are conducted for all freshmen identifying the benefits and concerns associated with choosing non-traditional careers. For all sophomores, workshops are presented that focus on the issue of sexual harassment and identifying in-school and employment procedures to follow if faced with such concerns. For sophomores, juniors, and seniors, the Guidance Department conducts support groups for students who are enrolled in vocational shops that represent non-traditional choices (i.e., girls in construction trades, boys in cosmetology or health careers).

### **PEER MENTORING PROGRAM**

This program provides educational assistance to students having difficulty with one or more academic or career technical subjects and is overseen by an interdisciplinary team of teachers. Students who have been successful in specific subject areas may also assist in providing academic support. This service is designed to supplement after school assistance provided by the classroom teachers.

### **PEER MEDIATION PROGRAM**

Northeast provides a peer mediation program, under the direction of a full time coordinator. This program provides training to upper class students in conflict resolution and leadership skills. Trained mediators help other students resolve disputes. A mediator is a neutral person who helps people come to their own agreement about how they want to resolve a problem. Mediation is voluntary and confidential.

**NORTHEAST METRO TECH HIGH SCHOOL**

**2018-2019**

<b>Period</b>	<b>Trimester 1</b>	<b>Trimester 2</b>	<b>Trimester 3</b>
<b>7:45</b>	Warning Bell	Warning Bell	Warning Bell
<b>1</b> 7:55-8:52			
<b>2</b> 8:55-9:52			
<b>3</b> 9:55-10:52			
<b>4</b> 10:55-12:31 (includes 30 minute lunch)			
<b>5</b> 12:34-1:31			
<b>6</b> 1:34-2:30			