

EAHS Science and Career Technology

Course Offerings



The Science and Technology departments at East Aurora High School believes that all students benefit from a diverse tech education. As a result we offer a variety of classes that are designed to appeal to the many interests of our student body at each stage of the education.

Did You Know...

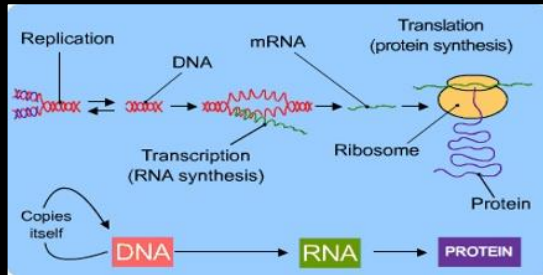
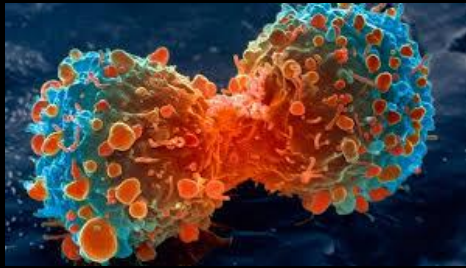
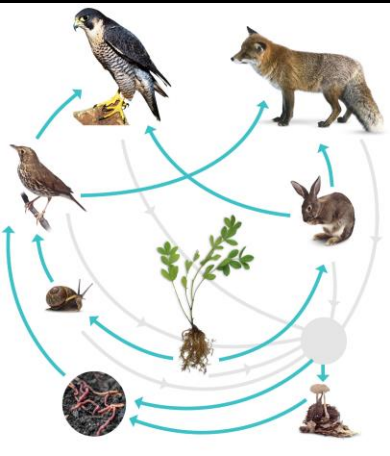
**According to US News Best Jobs Rankings,
26 of the Top 30 Jobs are in a STEM Related Field!**

<https://money.usnews.com/careers/best-jobs/rankings/the-100>



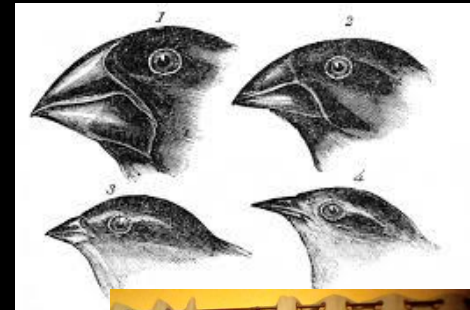
Pre-AP Biology

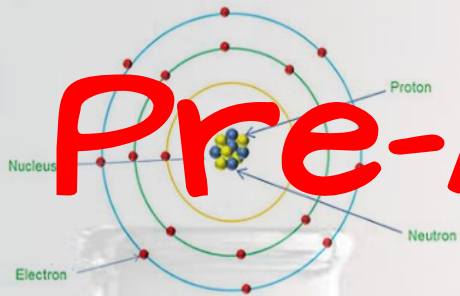
Biology is the study of living things and their relationships with the nonliving world. This two semester introduction to Biology takes a hands-on approach to the study of life. Students will conduct investigations that will support understanding on topics such as the structure and function of organisms, matter and energy in organisms and ecosystems, interactions in ecosystems, inheritance and variation of traits, unity and diversity of life, and natural selection and evolution.



Topics Covered Include:

- Ecology
- Genetics
- Evolution
- DNA & RNA
- Cell Cycle and Cancer
- Photosynthesis
- Cellular Respiration





Pre-AP

CHEMISTRY

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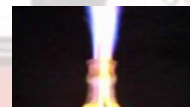
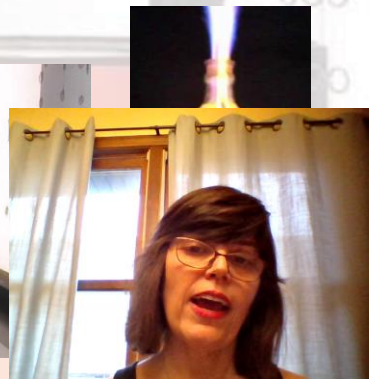
Students will interpret laboratory data in order to write and solve equations, participate effectively in conversation and collaboration with partners, and express ideas clearly and persuasively.

Students enrolled in chemistry will experience an active, laboratory based, problem solving learning environment. Students will also enhance their ability to successfully communicate results verbally and in written form.

This course is appropriate for 10th grade (and up) students who have a good working knowledge of Algebra.

Topics Covered

- Matter
- The Atom and the Nucleus
- Nuclear Chemistry
- Electrons and Ions
- The Periodic Table
- Covalent/Ionic Bonding
- Chemical Reactions
- The Mole
- Stoichiometry
- Gas Laws





Are you interested in getting a college degree?

Physics

AP
Environmental
Science

Fulfill the Science 2 credit requirement



7 Myths About High School Physics



MYTH NO. 1

Physics will lower students' GPAs and hurt their chances of getting into college.

FACT: Colleges want to see that students have taken a challenging curriculum, and a B in physics is often better than an A in a less challenging course.

"College admission is never just about the GPA. A transcript with physics is better than one without it."

*—Vikki Otero, Senior Assistant Director,
University of Colorado Admissions Office*

MYTH NO. 2

Students won't miss out on future opportunities or experiences if they don't take physics.

FACT: Physics answers questions about the world that no other field can. In addition, not taking physics closes doors to a huge number of potential careers.

MYTH NO. 3

Only the most mathematically advanced students can handle physics.

FACT: Physics can be taught at a variety of levels for students with different mathematical backgrounds.

All students should have the chance to spark their curiosity with physics.



MYTH NO. 4

Physics is for boys.

FACT: Over 600,000 girls take high school physics each year, nearly half of the nation's enrollment.

MYTH NO. 5

Students don't need to take physics in high school because they can just take it in college.

FACT: Research shows that students who have taken high school physics do better in college physics courses, which are required for a large number of degree paths.

MYTH NO. 6

Physics knowledge has little relevance to the world we live in or to most jobs.

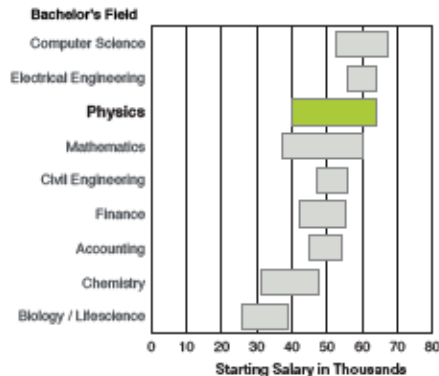
FACT: Physics is fundamental to every other science and to most major technological innovations of the past century. Moreover, physics teaches critical thinking and problem solving skills that are useful no matter what a student goes on to do.

MYTH NO. 7

The only careers you can have with a physics degree are to be a professor or teach high school.

FACT: Physics opens doors to a wide variety of excellent careers. Physics majors have high employment rates and are among the best paid of all college graduates.

Typical Salary Offers by Campus Recruiters



Typical salaries
Source: American



Physics

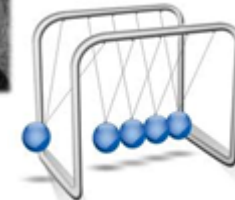
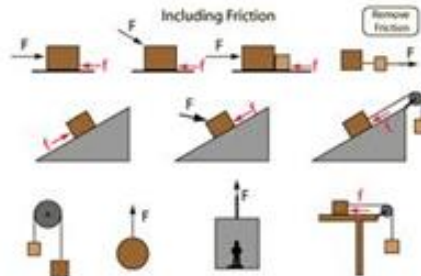
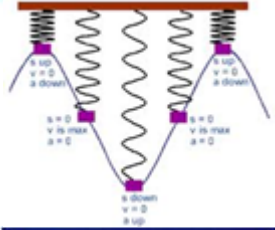
Areas of Study:

- Linear Motion
- Projectile Motion
- Dynamics (Forces)
- Energy
- Momentum
- Waves/Sound
- Electricity

This class is intended for students that are interested in continuing their knowledge about science and who plan on attending college.

This class focuses on hands-on learning through collaborative laboratory experiments.

There is an emphasis on applying concepts to real world situations as opposed to memorization of facts.



AP Environmental



5 Alternative Energy Sources For Your Home



Turning to alternative energy sources is a great investment in

The most common science AP course taken by non-science majors like business, finance, political science, and pre-law majors. Also great for those interested in Environmental Science or Environmental Engineering.

The goal of the course is to understand the interrelationships of the natural world, to identify and analyze environmental problems both natural and human-made, to evaluate the relative risks associated with these problems, and to examine alternative solutions for solving them.

Honors Elective

Learn about the World and Issues that you hear about every day -- and EARN COLLEGE CREDIT WHILE IN HIGH SCHOOL!

PERFECT FOR NON-SCIENCE MAJORS WHO WANT COLLEGE CREDIT!



Careers Related to the Environmental Science Field

- Environmental Scientists
- National Park Service
- Preserves Environmental
- Agriculture and Natural Resource Conservation
- Environmental Engineers
- Forestry Careers
- Geologist
- Green Jobs
- Zoologist



AP Student Expectations

College teachers expect you to be in class every day. No excuses. EAHS teachers expect the same. There will not be time in class to “catch up” if you are absent.

Do your assignments

Much of the time in class will be devoted to labs and activities. Therefore, much of the material will be assigned as independent work that you are expected to complete on your own time (just like in college).

Be an active learner

This means doing the assignments as they are given and coming to discuss. Ask questions when necessary.

TAKE THE AP EXAM!





Are you interested in
medical fields?



Medical Field Options



Introduction to
Health
Occupations



Health
Occupations
Clinical (CNA)

Fulfill the Career
and Technical 1
credit requirement

Medical
Terminology

Human
Anatomy &
Physiology

Microbiology

Fulfill the Science 2 credit requirement

AP Biology

AP Chemistry

Forensic

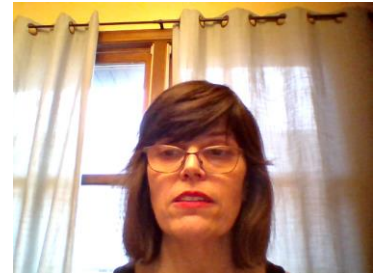


Introduction to Health Occupations

Year Long Elective: Open to Students In grades 9-11

- In this course you will learn about:
 - the personal characteristics of health care professionals
 - legal and ethical aspects of health care
 - disease transmission
 - various careers in health care (w/ lab experiences related to the careers)

PROJECTED GROWTH FROM 2021 TO 2031		
JOB	AVERAGE ANNUAL SALARY	TYPICAL EDUCATION NEEDED FOR ENTRY LEVEL
1 Nurse Practitioners	\$120,680 46%	Master's degree
2 Nurse Anesthetists and Nurse Midwives	\$123,780 40%	Master's degree
3 Physician Assistants	\$121,530 28%	Master's degree
4 Medical and Health Services Managers	\$101,340 28%	Bachelor's degree
5 Epidemiologists	\$78,830 26%	Master's degree
6 Occupational Therapy Assistants and Aides	\$61,520 25%	Associate degree
7 Home Health and Personal Care Aides	\$29,430 25%	High school diploma or equivalent
8 Physical Therapist Assistants and Aides	\$49,180 24%	Associate degree
9 Substance Abuse, Behavioral Disorder, and Mental Health Counselors	\$48,520 22%	Bachelor's degree
10 Speech-Language Pathologists	\$79,060 21%	Master's degree
11 Massage Therapists	\$46,910 20%	Post-secondary non-degree award
12 Veterinary Technologists and Technicians	\$36,850 20%	Associate degree
13 Veterinarians	\$100,370 19%	Doctoral or professional degree



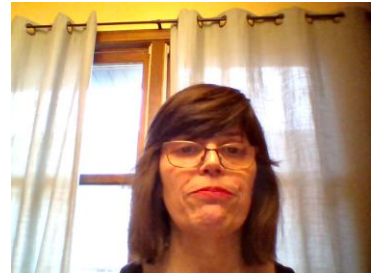
Health Occupations Clinical

Year Long Elective: Open to Students In grades 11-12

Get CNA certification while in school!

- You must get your own transportation to Waubonsee (for classes) and Rush Copley (for clinicals on other days).
- Classes can last longer than the EAHS school day.
- Attendance is MANDATORY! You will be dropped from the course if you are absent
- Must purchase the course books, scrubs, and stethoscope
- Must be fingerprinted
- Must have a Social Security Number

Offered at Waubonsee Community College for 2 periods



Medical terminology: One Semester

Year Long Elective: Open to Students In grades 11-12

Designed to teach word elements of roots, combining forms, suffixes, and prefixes, definitions, spelling and the use of correct abbreviations of medical terms to prepare you for medical fields like coding, nursing, etc.

Dual Credit with Waubensee Community College



Human Anatomy and Physiology

Detailed study of the parts
and functions of the body.

You should take this class if you
are thinking of a career in
healthcare, veterinary care,
physical therapy, or just have an
interest in the human body.

Juniors and
Seniors

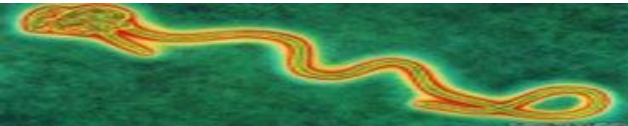
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Honors Microbiology

In this year-long course you will learn about:

- The many types of microbes
how microbes survive
- The role microorganisms play in human health and life.
- The economic implications of microbes around us including in food preparation, preservatives, spoilage, and disease



College Experience
High School Setting

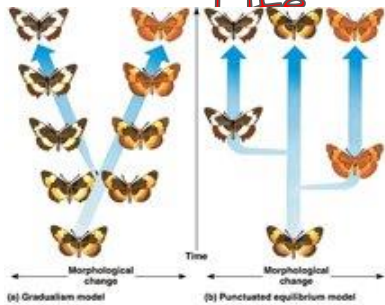
AP Biology

1 Period +
AP Guided Study = 2
Honors credits

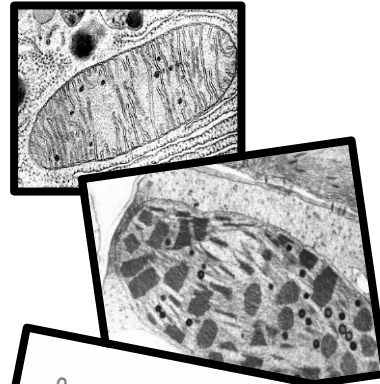
Information
and
Living
Systems



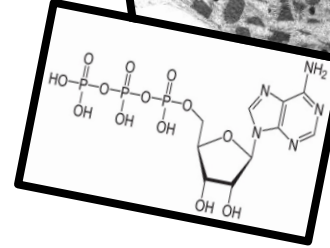
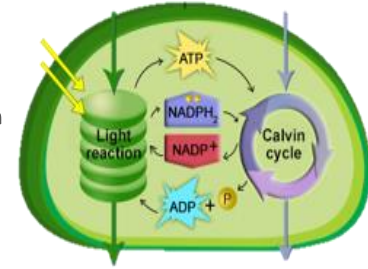
Evolution:
Diversity and unity of
Life



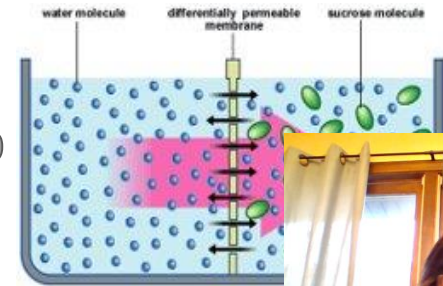
Energy and Matter
in Living Systems



Interaction
of
Living
Things



Modern Lab
Techniques



Take Your Biological Knowledge to the Next

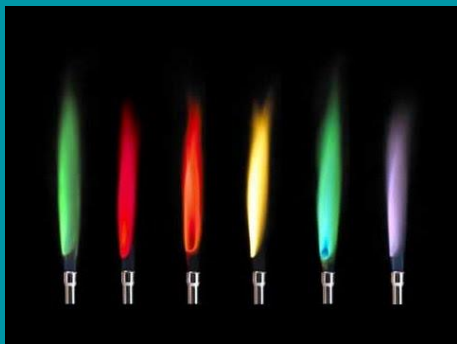


College Experience
High School Setting

AP CHEMISTRY

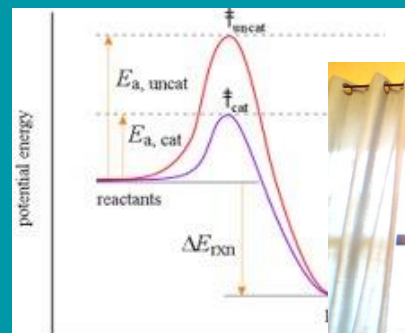
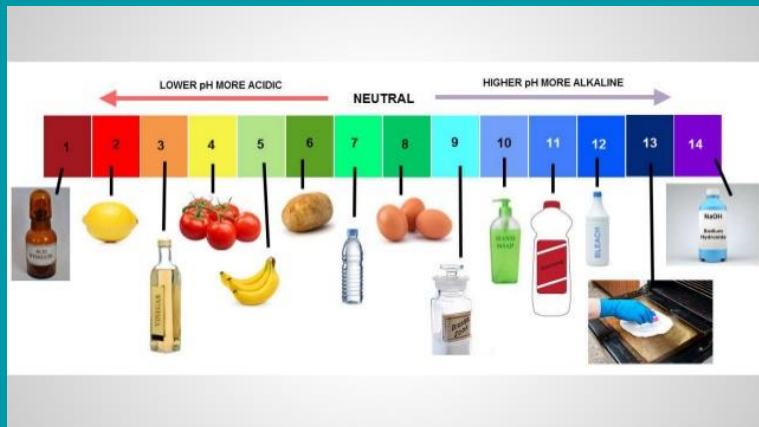
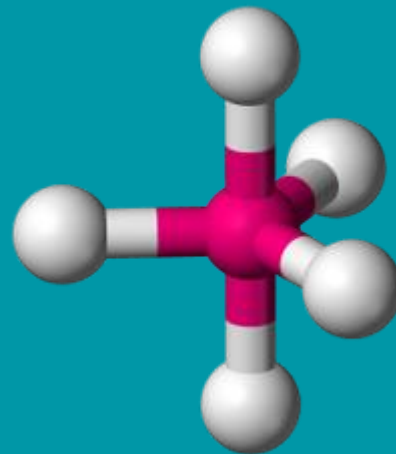
Potential Careers

Chemical Engineer
Medical (Dr's, nurse, PT,
Dentistry)
Food science



Topics Covered

Advanced Stoich.
Aqueous Solution
Reactions
Thermochemistry
Advanced Periodic
Trends
Advanced Bonding
Intermolecular Forces
Kinetics
Equilibrium
Acids and Bases
Free Energy & Entropy
Redox Reactions
Electrochemistry



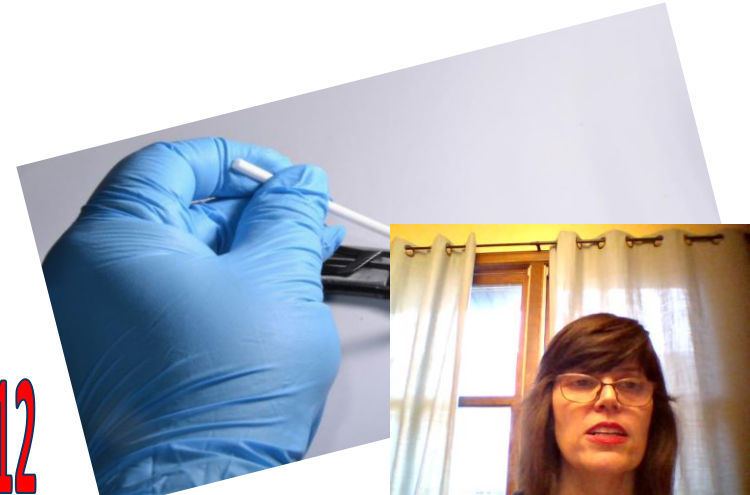
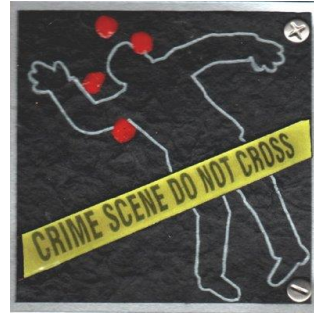
Forensic Science



- Incorporates components from all the other sciences: biology, chemistry, and physics.



- 1 semester course
- History of Forensic
- Crime scenes
- Physical evidence
- DNA analysis
- Hair and fiber analysis
- Drug analysis



Semester Long Elective for Grades 11-12



Do you like to design things?

Fulfill the Career and Technical Education credit requirements (1 credit required)



Engineering



Engineering

AP Physics I



AP Physics

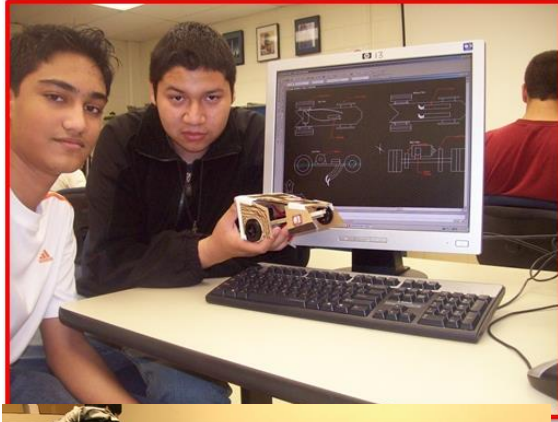
Fulfill the Career and
Technical 1 credit
requirement

Fulfill the Science 2
requirement



Introduction to Engineering

Year-long Elective Open to All Students Grade 9-12



Introduction to Engineering is a high school level foundation course that introduces students to the engineering profession. Students will learn a common approach to the solution of engineering problems, and engineering design process. Students will progress from completing structured activities to solving open-ended projects and problems that require them to develop planning, documentation, communication, and other professional skills.



AP Physics 1

*Foundation for ALL engineering & Science majors!

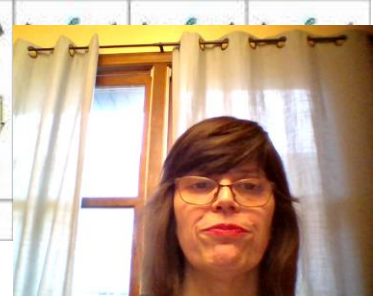
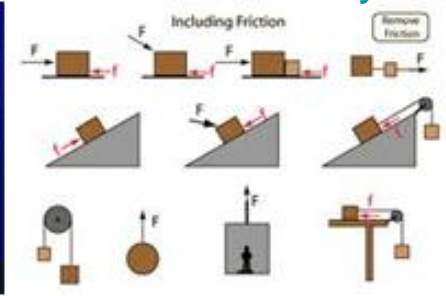
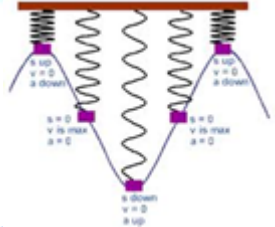
*Ideal for ALL college bound students!

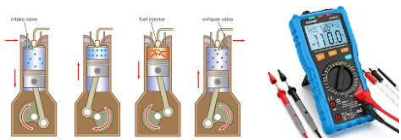
Areas of Study:

- Linear Motion
- Projectile Motion
- Dynamics (Forces)
- Energy
- Momentum
- Rotational Motion
- Waves/Sound
- Electricity

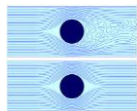
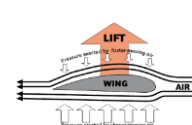
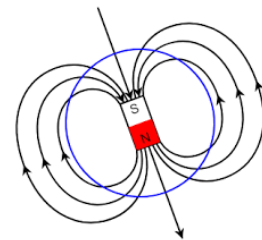
This class is intended for students that are interested in taking a college level class that covers topics in 1st semester college physics like: forces, motion, and momentum

This Honors credit course will expose you to the rigor that will come with *collegescience* classes.





AP Physics 2



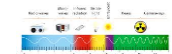
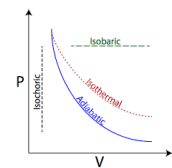
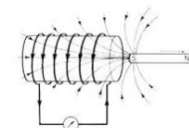
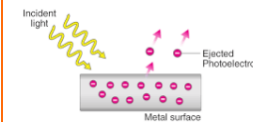
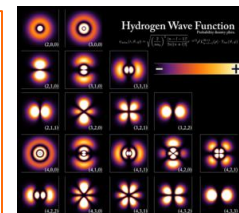
*For physics minded students interested in continuing their studies of physics.

*You should have completed AP Physics 1

Areas of Study:

- Fluids: Pressure & Force
- Thermodynamics
- Electric Force, Field, Potential
- Electric Circuits
- Magnetism & Electromagnetic Induction
- Geometric & Physical Optics
- Quantum, Atomic, & Nuclear Physics

Students will study in depth topics that are covered in a 2nd semester freshmen college level physics courses like: thermodynamics, electricity, and magnetism are covered.



Future Career Paths:

- Engineers
- Architects
- Computer Science
- Medical Field
- Biological Sciences
- And many more....



Do you like to work with your hands?



Fulfill the Career and Technical Education credit requirements (1 credit required)





Automotive Technology

Intro to Autos

Auto Shop Operations:
Brakes and Suspension

Auto Shop
Operations: Engine
Service and
Powertrain
Manage



Fulfill the Career and Technical Education credit requirement
(1 credit required)

Introduction to Autos

Semester Long Electives: Open to All Students Grade 9-11

Students will.....

- How to safely use and operate equipment to maintain cars. This includes equipment for: tire service and repair, lubrication, oil changes, cooling systems, and balancing
- This course is required for before students can take any other Autos courses.



Auto Shop Operations: Brakes and Suspension

Semester Long Electives: Open to Students in Grade 9-12 who took Intro to Autos

(Double blocked for 1 semester)

Students will.....

- learn advanced use of auto tools.
- learn how to safely use machines designed to repair and replace Brakes and Suspension



Auto Shop Operations: Engine Service and PowerTrain Management

Dual Credit with Waubensee Community College

Students will.....

- learn advanced use of auto tools.
- learn how to safely use machines that are used to repair Engine





Home Repair, Construction, and Trades

Introduction
to Home
Repair



Construction
& Building
Trades I



Construction &
Building Trades
II



Fulfill the Career and Technical Education credit requirements (1 credit required)

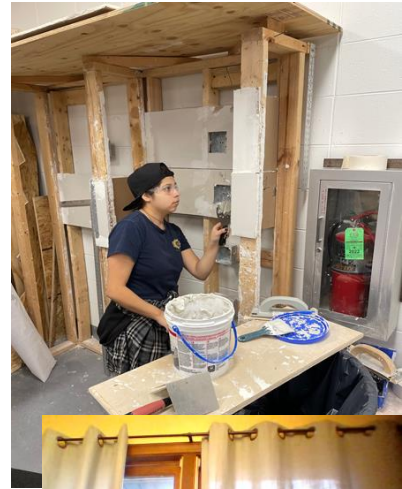
Introduction to Home Repair, Construction, and Trades

Semester Long Electives: Open to All Students Grade 9-12



Students will.....

- learn how to safely use machines to do learn about how to do plumbing, landscaping, tiling and build/fix walls in homes
- learn to read a set of plans.
- Build Projects.



Construction and Building Trades I & II

Year Long Electives for 10th-12th Grade Students who took Introduction to Home Re

(Double blocked courses: Building Trades II requires Building Trades I)

Students will.....

- learn more advanced techniques in home repair and building
- learn to read a set of plans.
- Work on local projects that involve both repairing and making new fixtures like sheds, benches, etc.





Woods

Introduction
to Woods



Woods I



Woods II

Fulfill the Career and Technical Education credit requirement
(1 credit required)



Introduction to Woods

Semester Long Electives: Open to All Students Grade 9-12



Students will.....

- learn basic use of power tools.
- learn how to safely use basic stationary power machines.
- learn to read a set of plans.
- Build a Project.



Woods I (year) & Woods II (year-long)

Open to All Students Grade 10-12 who took Introduction to Woods & Woods I

Students will.....

- learn advanced use of power tools.
- learn how to safely use basic stationary power machines.
- learn to read a set of plans.
- build a Project.





Electronics

Introduction
to Electronics



Advanced
Electronics

Fulfill the Career and Technical Education credit requirement
(1 credit required)



Introduction to Electronics

Semester Long Electives: Open to All Students Grade 9-12

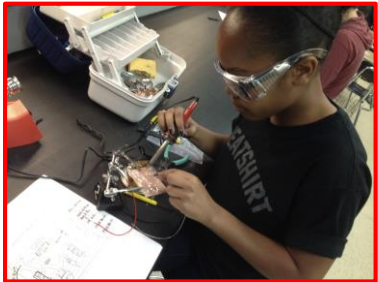
This project based class exposes students to skills and tools of the electronics and engineering fields. Students will learn how to read schematic diagrams and solder.

Advanced Electronics

Year Long Elective: Open to All Students Grade 10-12

Prereq: Intro to Electronics

Students will build a variety of robots and go into more depth mentioned in the introductory





Blueprint reading options

Technical
Drafting

Introduction
to Blueprint
Reading

Introduction
to
Manufacturing

Fulfill the Career and Technical Education credit requirement
(1 credit required)

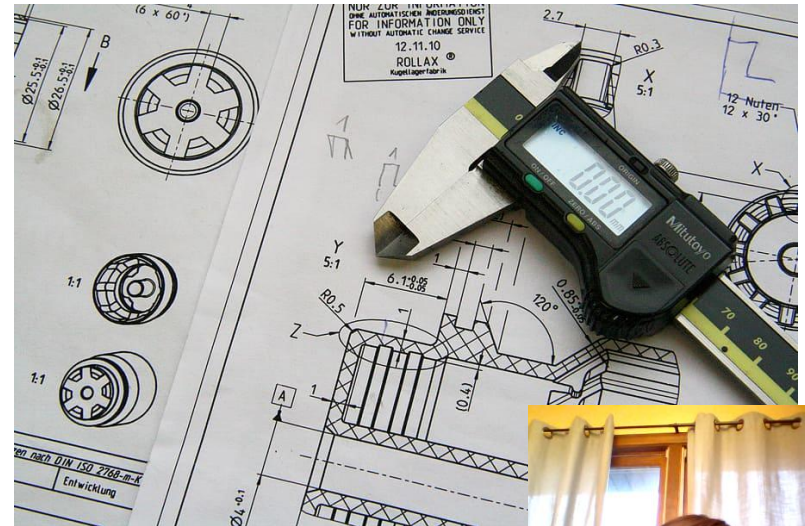


Introduction to Blueprint Reading

Semester Long Electives: Open to All Students Grade 9-12

Students will.....

- Learn to read blueprints.
- Build a Project from those plans using industry tools



Introduction to Technical Drafting

Semester Long Electives: Open to All Students Grade 9-12

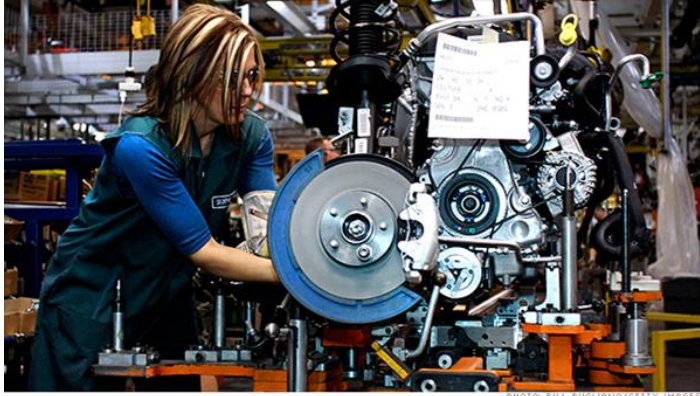
Students will.....

- learn to read a set of plans.
- design their own plans
- Build a Project from those plans using industry tools



Introduction to Manufacturing

Semester Long Electives: Open to All Students Grade 9-12



Students will.....

- learn about the wide variety of manufacturing machines.
- learn to read a set of plans.
- Build a Project





Welding

Welding I



Welding II



Fulfill the Career and Technical Education credit requirement (1 credit required)

Welding I & II

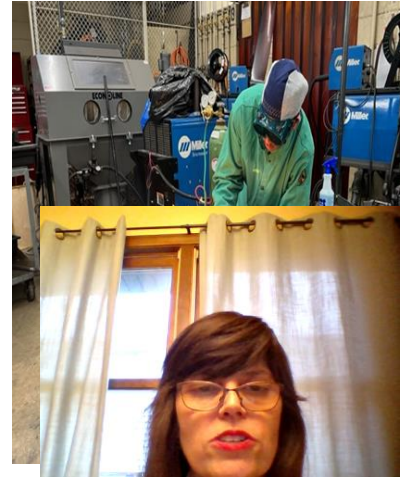
Year Long Electives Open to all students in grades 10-12

(Double blocked class)

Students will.....

- learn about employability skills like: to read a set of plans.
- learn advanced use of welding tools and different types of Welding to do Projects on metals

Dual Credit with Waubensee Community College





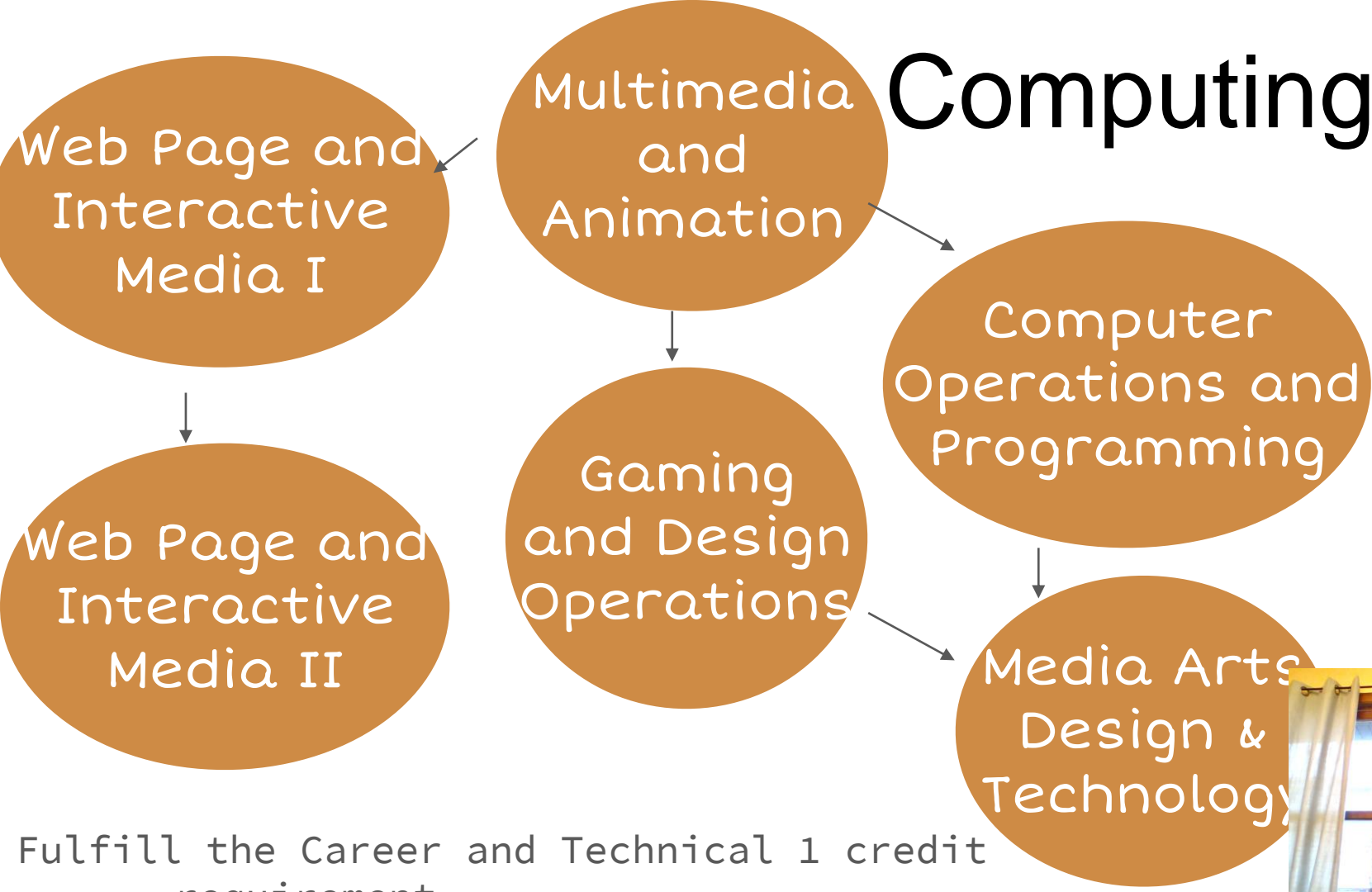
Do you like computers?

Fulfill the Career and Technical Education credit requirements (1 credit required)





Computing

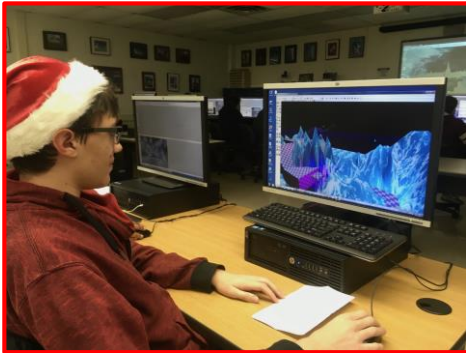


Fulfill the Career and Technical 1 credit requirement

Multimedia and Animation

Semester Long Electives: Open to All Students Grade 9-12

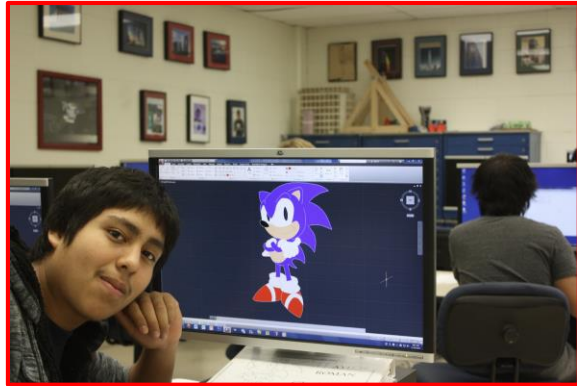
This course introduces students to three areas: coding in Python and JavaScript, physical computing with microbit and MakeCode, and animation with Adobe Animate.



Students will focus on coding and Designing Interactive Media content.



Web Page & Interactive Media I



Semester Long Electives: Open to All Students Grade 9-12

Web Design & Development is a project-based course that will prepare students to plan, design, create, and maintain web pages and sites.

Web Page & Interactive Media II

Semester Long Electives: Open to All Students Grade 9-12



Students will expand upon the skills learned in Web Design & Development in a project-based environment. Students will delve into more advanced CSS coding by using various ways to take data from web pages and incorporate data collection into their sites. Students will independently design, develop, and implement functional



Gaming and Design Operations

Semester Long Electives: Open to All Students Grade 11-12 (at the REC)

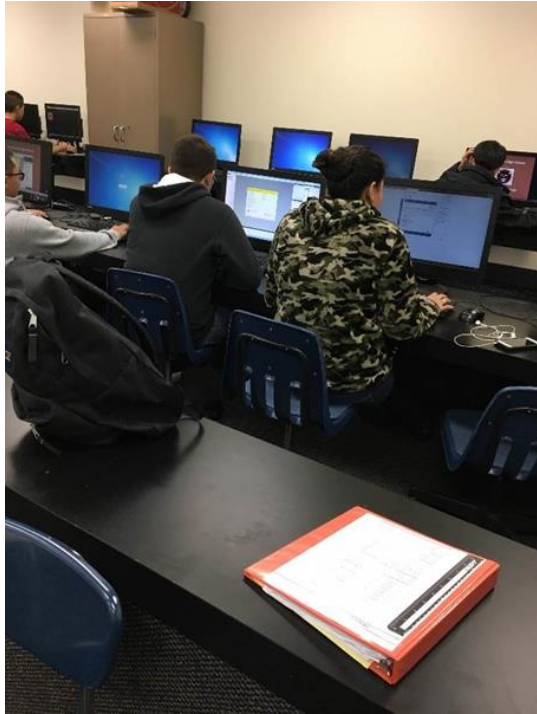
Game Development is a beginner course aimed at teaching students the 3-dimensional practical and conceptual framework of character and scene development for gaming. Video game design is a perfect blend of core content and exciting student engagement in the creation of a video game level.



Computer Operations and Programming

Semester Long Electives: Open to All Students Grade 11-12 (at the REC)

Exposure to foundational knowledge in hardware, software, programming, IT support, and networks are all taught with hands-on activities and project focused tasks. Various forms of technologies will be highlighted to expose students to the emerging technologies impacting the digital world.



Media Arts Design and Technology

Semester Long Electives: Open to All Students Grade 10-12

This capstone course is an intensive course that allows students the opportunity to create portfolio material in their particular area of specialization (audio/video design, web development, game development, or graphic design/ print media).

Students should take this course after taking one of the earlier offerings.





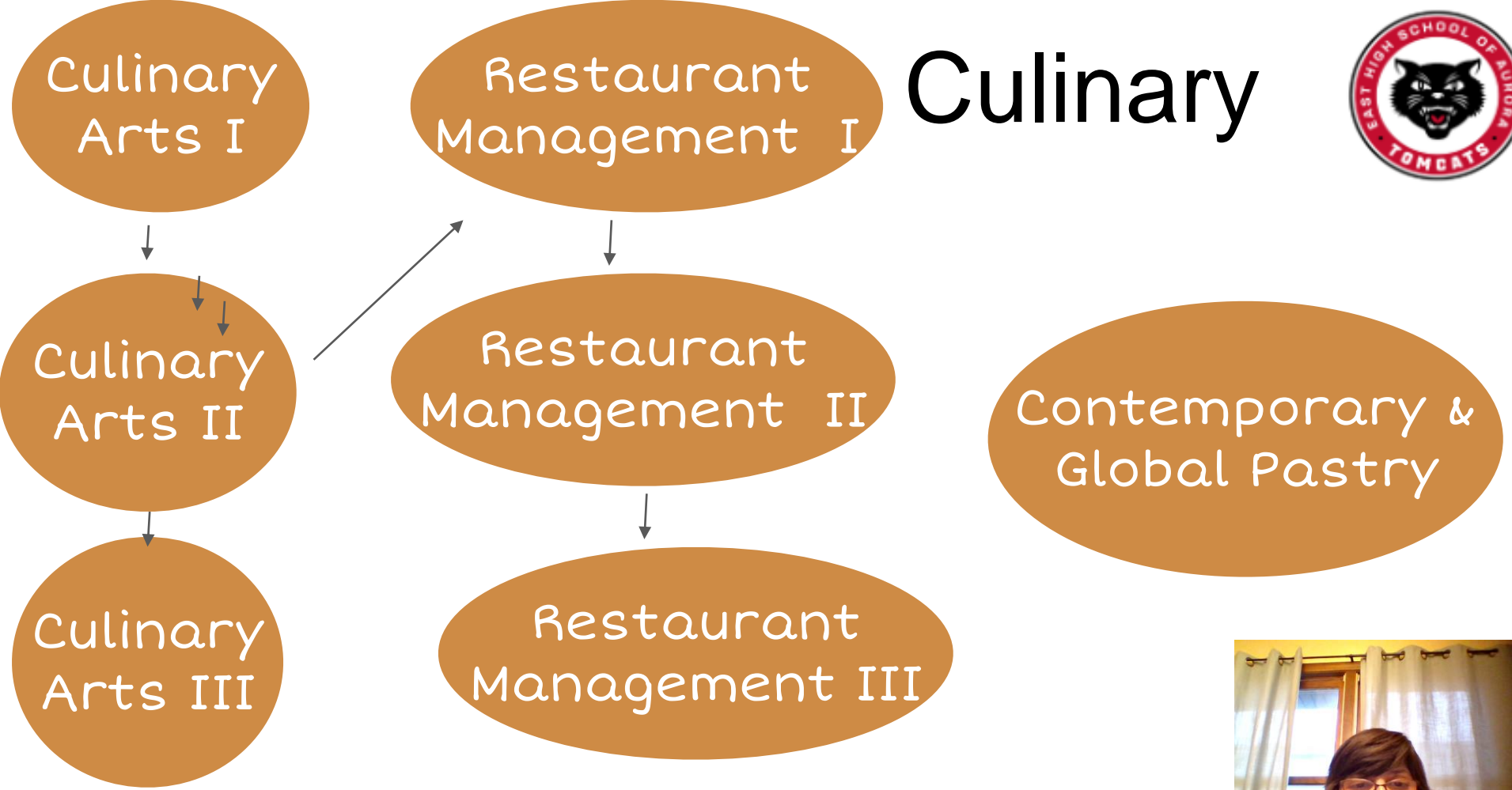
Do you like to cook?

Fulfill the Career and Technical Education credit requirements (1 credit required)





Culinary



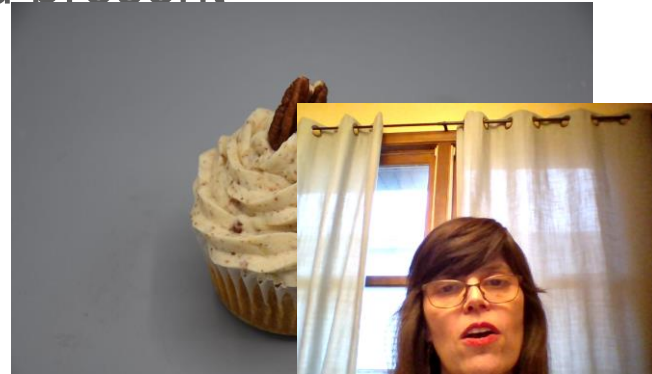
Fulfill the Career and Technical 1 credit requirement



Culinary Arts I & II

Semester Long Electives: Open to All Students Grade 9-12

- You will learn about:
 - Cooking safety to prevent you from getting ill
 - Different cooking techniques
 - Different ways to decorate and present a variety of common foods



Culinary Arts III

Semester Long Electives: Open to Students in Grade 10-12 who took Culinary I & II

- You will cook multiple times a week
- You will learn about:
 - U.S. regional cuisine and global perspectives of international cuisine
 - Nutritional needs, special diets
 - Garnishing food



Restaurant Management I, II & III

Year Long Courses that prepare 10th - 12th grade students to be professional cooks or chefs

RM 1 - Sophomore, Juniors, Seniors (CA 1 & 2 are prereq)

RM 2 & 3- Juniors and Seniors

- Honors course with Articulated Credit
- Test, prepare, and create recipes
- Cater for various events including lunches for teachers
- Work in an industrial kitchen and receive advanced certifications that prepares you for work in the industry (continue to get your associates to become a bachelors to let you manage restaurants)



Contemporary and Global Pastry

Year Long Elective: Open to Students in Grades 11-12 (at the REC)

You will learn about:

- U.S. regional and global (international) perspectives in baking
- Garnishing and decorating pastries

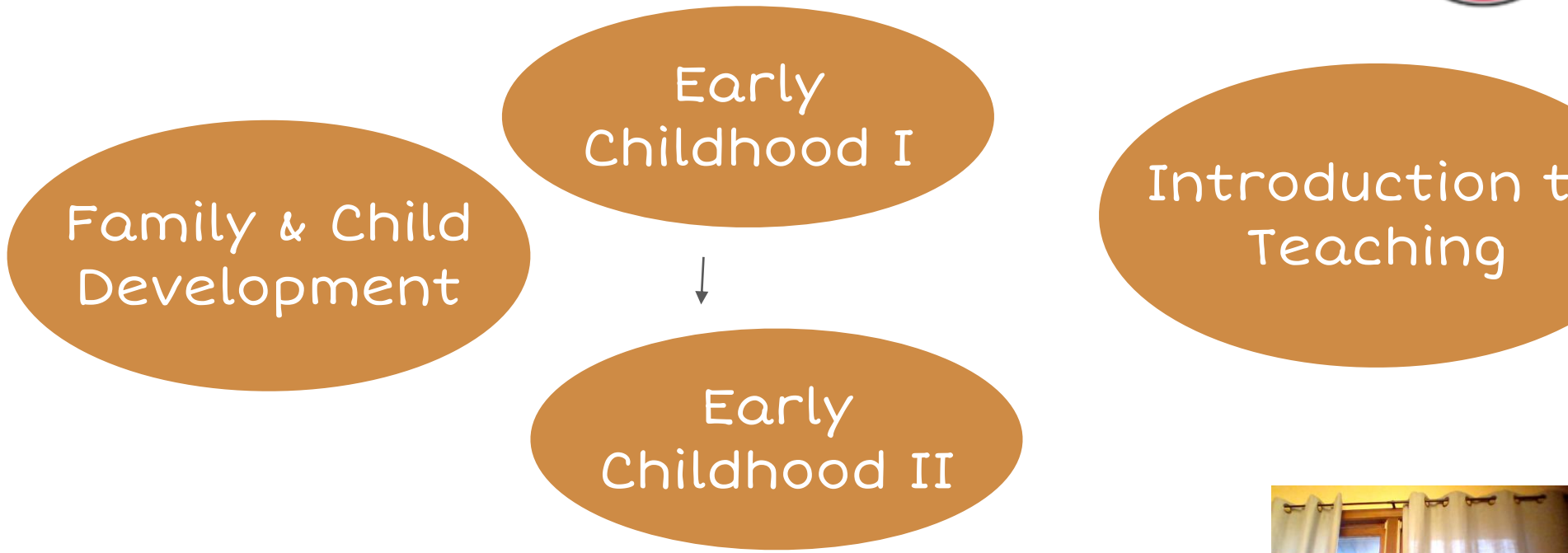




Are you interested in
teaching?



Teaching



Fulfill the Career and Technical 1 credit requirement

Family and Child Development

Year Long Elective: Open to All Students

You will learn about:

- How to develop strong and healthy relationships within families
- Healthy pregnancies and child development
- Current issues affecting children and family
- Stimulating activities for all ages.



Early Childhood Occupations 1 & 2

Year Long Elective: Open to Students in Grades 10-12

- Designed to teach the basic skills that you will need to teach preschool through 2nd grade (including choosing books, crafts, and how to make lesson plans)
- Students will go into elementary classes in the second semester of the course



Introduction to Teaching

Year Long Elective: Open to Students In grades 11-12

- Designed to teach the basic skills that you will need to teach (how to make lesson plans, etc)
- Students will go into elementary or high school classes in the second semester of the course

Dual Credit with Waubonsee Community College



Course Requirements:

- a. To be classified as a Sophomore, a student must have earned a minimum of 5.5 credits
- b. To be classified as a Junior, a student must have earned a minimum of 11 credits
- c. To be classified as a Senior, a student must have earned a minimum of 16 credits

