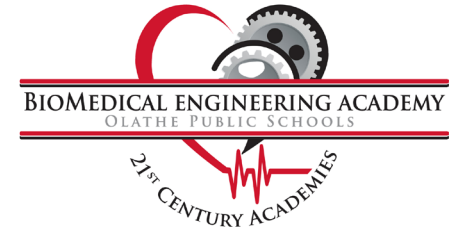




USD #233 Individual Plan of Study
 Electronic file located in Xello - "Course Planner"
 Located at Olathe South
<https://www.olatheschools.org/Page/10576>
 Twitter: @OlatheBIOeng
 Apply at: 21stcentury.olatheschools.com

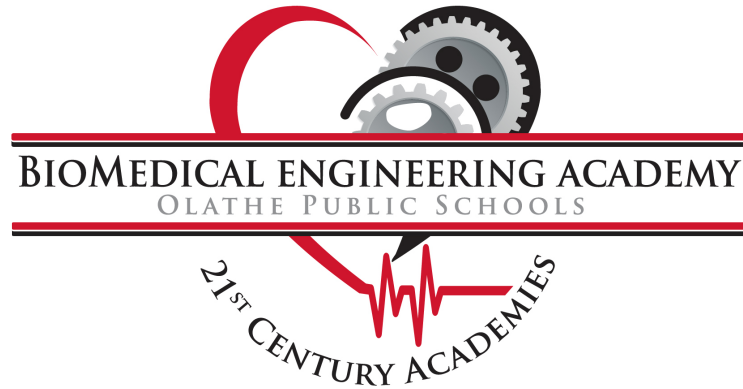
BioMedical Engineering Academy



| Graduation Requirements | 9th Grade | Credits | 10th Grade | Credits | 11th Grade | Credits | 12th Grade | Credits | Y 13 |
|--|--|----------|--|----------|---|----------|---|-----------|------|
| English (x4 credits) | English I OR Honors English I | 1 | English II OR Honors English II | 1 | English III OR AP English Language | 1 | English IV OR College Prep English OR AP English Literature | 1 | |
| Math (x3 credits) | Must take 1.0 math 9th gr year as recommended by facilitator & math teacher | 1 | Must take 1.0 math 10th gr year as recommended by facilitator & math teacher | 1 | Must take 1.0 math 11th gr year as recommended by facilitator & math teacher | 1 | Must take 1.0 math 12th gr year as recommended by facilitator & math teacher | 1 | |
| Science (x3 credits) (1 Life; 1 Physical; 1 Elective) | Honors Biology | 1 | Honors Chemistry | 1 | Students will select 2 of the following courses, one for each 11th & 12th grade year: Anatomy & Physiology College or AP Biology College or AP Chemistry Physics or AP Physics I AP Environmental Science Genetics & Biotechnology I & II | | 2 | | |
| Social Studies (x3 credits) (1 World; 1 US; 0.5 Govt; 0.5 elective) | World History OR Honors World History | 1 | Student Choice | .5 | US History OR AP US History | 1 | US Govt OR AP US Govt | .5 | |
| PE/Health (1 credit) | PE Concepts OR Cheer/Drill Team OR Strength & Conditioning AND Health | 1 | <i>Optional: P.E. Concepts AND/OR Health may be taken online through eAcademy if space is needed in student's schedule. This can be scheduled during the summer or as an 8th hour during the school year - grades 10-12 only. Other online classes are available at eacademy.olatheschools.com</i> | | | | | | Y 14 |
| Fine Arts (1 credit) (Visual or Performing) | Student choice - any year(s) 1+ | | | | | | | | |
| World Lang/App'l Comm (1 credit) | Student choice - any year(s) 1+ College-bound students should enroll in 2 years of the same World Language. | | | | | | | | |
| Life Skills: Consumer & Personal Finance (0.5 credit) | May take Consumer and Personal Finance during 10th 11th or 12th grade .5 | | | | | | | | |
| Practical & Consumer (1 credit) | Students fulfill 1.0 Practical & Consumer graduation requirement through 21st Century Academy Courses | | | | | | | | |
| Technology (0.5 credit) | | | Computer Programming I OR Engineering Drafting /CAD I | .5 | | | | | |
| Individual Focus (6 credits) <i>21st Century Academy Coursework</i> | Introduction to BioMedical Engineering | 1 | BioMedical Engineering I | 1 | BioMedical Engineering II | 1 | BioMedical Engineering Senior Capstone | 1 | |
| Total Credits: (24 total needed for graduation) | 9th grade total: | 7 | 10th grade total: | 7 | 11th grade total: | 7 | 12th grade total: | 3+ | |

NOTE: Credits beyond requirements in any category will fall under individual focus.

Students may earn an endorsement on their transcript for completing all Academy requirements, including successful completion of coursework, outside-the-classroom learning opportunities, field experiences, and capstone projects. Refer to the Academy's Endorsement Requirements provided by facilitator or found on the web at www.21stcentury.olatheschools.com



Engineering Solutions for Health Care Needs

Who We Are:

At the intersection of the medical and engineering fields, BioMedical Engineering is for students who want to learn how to design and create products to help people across a range of human health challenges. Students in this Academy will study a wide variety of biomedical engineering topics including prosthetics, heart valves and replacements, drug delivery systems, bioethics, developing medical sensors using computer technology (including 3D printing and Arduinos), the biomechanics of injuries and how they are treated, career exploration, and more. BioMedical Engineers are the people behind nearly every tool and implantable device used in medicine. Successful students in this Academy typically prefer to work in a group and collaborate with others, can (or like to) work with their hands to create physical products and models, are very creative thinkers, are highly resilient when faced with challenges, have a strong work ethic, have good time management, and meet deadlines.

- Four years of specialized hands-on courses using the latest technology to prepare for entry into a variety of engineering or medical related careers like medicine, orthopedic surgery, nursing, bioimaging, pharmacy, mechanical engineering, chemical engineering, physical therapy, or bioengineering.
- Collaborative teams learn in-depth human anatomy as well as engineering-design to take on real life challenges in health care. Students will focus on topics such as disabilities (natural or caused by injury) as well as the equipment related to a physical disability/injury, surgical instruments (equipment and techniques), implantable medical devices, and design future solutions to existing health care needs.
- Engage across several engineering disciplines with medical interventions and devices

What We Do:

- Collaborative “team” approach to learning in all BioMedical Engineering courses
- Hands on learning, model building, creating and modifying current medical product designs
- Network with industry professionals who are inventing, developing, and bringing to market a wide range of medical techniques and devices. Students also connect and collaborate with medical professionals, research students, and university professors to further their learning experiences in the Academy
- Opportunities to visit and learn firsthand what BioMedical Engineering is all about through interactive and engaging field trips to research hospitals, universities, and biomedical companies
- Compete in exciting and high level local, regional, national competitions and design challenges

BioEngineering@olatheschools.org • 913.780.7160 • Twitter:  @OlatheBIOeng

Explore careers in this field with the Occupational Outlook Handbook at <https://www.bls.gov/ooh/>