

Academy of Medical Arts and Engineering



Programs of Study
2014-2015

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General McLane School District Mission Statement

*Meeting students where they are
to empower them to become all they are capable of being.*

PHILOSOPHY AND PURPOSE OF THE ACADEMY

The Academy of Medical Arts and Engineering was created to prepare students for careers in medicine and engineering. Through partnerships with local businesses, hospitals and universities, Academy classes will be enriched with hands-on activities designed to provide students with quality live-learning experiences. Acceptance into the Academy is based upon both the student's achievement in freshman-level accelerated courses, and the willingness to commit to the rigorous academic challenges presented through Academy coursework. Academy students will be required to take a prescribed curriculum, participate in specific, Academy-related activities, and complete shadowing experiences with the Academy partners. The Academy will accept a maximum of twenty freshmen students each year.

ACADEMY PARTNERS

- LECOM
- Edinboro University
- Gannon University
- Penn State Behrend
- Millcreek Community Hospital,
- Great Lakes Automation
- Great Lakes Case and Cabinet
- H&H Machined Products
- C & J Industries
- NuTech
- Deiss & Halmi Engineering,
- UPMC Hamot

Academy of Medical Arts and Engineering

Medical Arts Courses

Required Core Courses

English

- English 9 Accelerated or Advanced
- English 10 Accelerated or Advanced
- English 11 Accelerated or Advanced
- English 12 Accelerated or Advanced

Mathematics

- Algebra II Accelerated
- Geometry Accelerated
- Advanced Algebra & Trig Accelerated
- AP Calculus AB

Science

- Biology I Accelerated
- Chemistry 1 Accelerated
- AP Chemistry II
- Biology II Accelerated
- Anatomy
- Physics I Accelerated (Optional for nursing)

Social Studies

- US History I Acc
- US History II Acc
- Civics and Economics

Required Electives for Medical Students

- Ethics & Cultural Competence
- Public Speaking

Recommended Electives Medical Students

- Three credits of foreign language (Spanish I & II are preferred by some schools)
- AP Calculus II BC

Other Courses Required for Graduation

Health & Physical Education

- Health 9 & PE 9
- PE 10 /DE 10
- Health 11 & PE 11
- PE 12

Art (1.0 required for graduation)

Computer (1.0 required for graduation)

Career Choices (0.5 required for graduation)

Other Electives

Medical Activities

- Grade 10:
 - Attend four to six (4–6) programs during extended advisory or activity period.
 - Participate in field trips such to the medical simulations labs or site visits to partner facilities
- Grades 11 and 12:
 - Attend four to six (4–6) programs during extended advisory or activity period.
 - Junior girls will attend the Behrend Women in Science & Engineering Day in November
 - Attend the Rotary Ethics Conference for Juniors in March
 - Participate in field trips such as site visits to partner facilities
 - Participate in two shadow experiences, one in the junior year and one in the senior year, at a hospital or medical facility and at LECOM medical school.
 - Serve a 40-hour volunteer period at a partner facility, or other approved facility, between January of the junior year and March of the senior year.

Academy of Medical Arts and Engineering

Engineering Courses

Required Core Courses

English

- English 9 Accelerated or Advanced
- English 10 Accelerated or Advanced
- English 11 Accelerated or Advanced
- English 12 Accelerated or Advanced

Mathematics

- Algebra II Accelerated
- Geometry Accelerated
- Advanced Algebra & Trig Accelerated
- AP Calculus AB
- AP Calculus II BC

Science

- Biology I Accelerated
- Chemistry 1 Accelerated
- AP Chemistry II
- Physics I Accelerated
- Physics II Accelerated

Social Studies

- US History I Acc
- US History II Acc
- Civics and Economics

Computer (1.0 required for graduation)

- Mathematical Programming 1
- Engineering Design 1

Required Electives for Engineering Students

- Ethics & Cultural Competence
- Public Speaking
- Engineering Experience

Other Electives for Engineering Students

- Engineering Design II
- Engineering Design III
- Two or more credits of foreign language

Other Courses Required for Graduation

Health & Physical Education

- Health 9 & PE 9
- PE 10 /DE 10
- Health 11 & PE 11
- PE 12

Art (1.0 required for graduation)

Career Choices (0.5 required for graduation)

Other Electives

Engineering Activities

- Grade 10:
 - Attend four to six (4–6) programs during extended advisory or activity period.
 - Participate in field trips such as *Manufacturing Day* or site visits to partner facilities
- Grades 11 and 12:
 - Attend four to six (4–6) programs during extended advisory or activity period.
 - Junior girls will attend the Behrend Women in Engineering Day in November
 - Attend the Rotary Ethics Conference for Juniors in March
 - Participate in field trips such as *Manufacturing Day* or site visits to partner facilities
 - Participate in J.E.T.S, Robobots, Technology Ingenuity Challenge or a similar activity approved by the Director of the Academy.
 - Participate in two shadow experiences, one in the junior year and one in the senior year.
 - Serve a 40-hour volunteer period at a partner facility, or other approved facility, between January of the junior year and March of the senior year.

Sample Application



Academy of Medical Arts and Engineering

The Academy of Arts and Engineering was created to prepare students for careers in medicine and engineering. Through partnerships with local businesses, hospitals and universities, Academy classes will be enriched with hands-on activities designed to provide students with quality live-learning experiences.. Acceptance into the Academy is based upon both the student's achievement in freshman level accelerated courses, and their willingness to commit to the rigorous academic challenges presented through Academy coursework. Academy students will be required to take a prescribed curriculum, participate in specific, Academy-related activities, and complete shadowing experiences with the Academy partners. The Academy will accept a maximum of twenty freshmen students each year.

You are being invited to apply to the Academy of Arts and Engineering because of your academic success during your freshman year.

The application has four parts that you must complete entirely.

- 📍 Part 1: General Information
- 📍 Part 2: Course Credit Check
- 📍 Part 3: The Essay
- 📍 Part 4: The Agreement

If you are interested in participating in the Academy, you must complete the application that follows and return it to Mrs Scaletta in Room 502 by May 27, 2014. No applications will be accepted after that date.

For office use only.

D.O.S. _____



Student Information and Application

Please print clearly using black or blue ink.

Part 1: General Information

Name: _____ Grade: _____ D.O.B. _____

Cell Phone #: _____ Advisor _____

At this time, I am

- Definitely interested in Engineering
- Definitely interested in Medical Arts
- Undecided between the two
- I am not interested in either at this time

If you checked engineering, do you have a specific engineering interest? (Check all that apply.)

- Chemical or petroleum engineering
- Plastics engineering
- Mechanical engineering
- Bio or biomedical engineering
- Electrical engineering
- Industrial engineering
- Civil engineering
- No specific field of engineering yet

If you checked medical, do you have a specific medical arts interest? (Check all that apply.)

- Nursing
- Physical therapy
- Physicians assistant
- Primary care physician
- Surgeon
- Specialties: Oncology, anesthesiology, orthopedics, pediatrics, radiology
- Dentistry
- Veterinary medicine
- Chiropractics

🎧 Did you attend any of the Academy Speakers Series sessions during Activity Period? If yes, which ones?

🎧 List any school-sponsored activities or sports in which you participated. (Be sure to include marching band and Broadway dinner if applicable.)

🎧 List any activities or sports in which you participated that are not school-sponsored.

🎧 List any community service or volunteer activities in which you are involved.

🎧 Do you have a part-time job or are you planning to apply? Yes No
🎧 If yes, please list your employer or where you plan to apply.

Academy of Medical Arts and Engineering Credit Check Sheet: Engineering Students

English (4.0)

English 9	Adv	Acc	_____	1.0
English 10	Adv	Acc	_____	1.0
English 11	Adv	Acc	_____	1.0
English 12	Adv	Acc	_____	1.0

Total Credits Earned: _____

Social Studies (3.0)

US History I Acc	_____	1.0
US History II Acc	_____	1.0
Civics and Economics	_____	1.0

Total Credits Earned: _____

Math (5.0)

Algebra II Accelerated	_____	1.0
Geometry Accelerated	_____	1.0
Advanced Alg. & Trig Acc	_____	1.0
AP Calculus AB	_____	1.0
AP Calculus II BC	_____	1.0

Total Credits Earned: _____

Science (5.0)

Biology I Acc	_____	1.0
Chemistry I Acc	_____	1.0
AP Chemistry II	_____	1.0
Physics I Acc	_____	1.0
Physics II Acc	_____	1.0

Total Credits Earned: _____

Required Academy Courses (1.5)

Ethics & Cultural Competence <i>(Required)</i>	_____	0.5
Public Speaking <i>(Required)</i>	_____	0.5
Engineering Experiences <i>(Required)</i>	_____	0.5

Total Credits Earned: _____

Computer (1.0)

Mathematical Programming I	_____	0.5
Engineering Design I	_____	0.5

Total Credits Earned: _____

Health (1.0)

Health 9 Coed	_____	0.25
Health 9 G/B	_____	0.25
Health 11 Coed	_____	0.25
Health 11 G/B	_____	0.25

Total Credits Earned: _____

Physical Education (1.75)

PE 9 G/B	_____	0.25
PE 9 Coed	_____	0.25
PE 10/DE 10	_____	0.5
PE 11 G/B	_____	0.25
PE 11 Coed	_____	0.25
PE 12	_____	0.5

Total Credits Earned: _____

Career Choices (0.5)

Total Credits Earned: _____ 0.5

Foreign Language (2.0)

_____	_____	1.0
_____	_____	1.0

Total Credits Earned: _____

Art (1.0)

_____	_____	0.5
_____	_____	0.5

Total Credits Earned: _____

Other Elective Credits (6.25)

Engineering Design II <i>(Suggested)</i>	_____	0.5
Engineering Design III <i>(Suggested)</i>	_____	0.5
Math Connections <i>(Suggested)</i>	_____	0.5
_____	_____	
_____	_____	
_____	_____	
_____	_____	
_____	_____	
_____	_____	

(Note: 6.25 credits of unrestricted electives are available.)

Total Credits Earned: _____

GM Total Number of Credits: _____

(28 needed for graduation)

Keystone Algebra 1 Prof Adv

Keystone Biology 1 Prof Adv

Keystone Literature Prof Adv

Part 3: Essay

- Please submit a two-page, typed and double spaced essay explaining why you think you will be successful as an academy student and as a professional engineer or medical professional. Be sure to reference examples of your work ethic.

Part 4: Agreement

If accepted to the academy, I understand that:

1. I will complete the course requirements as outlined in the Academy course outline.
2. I will attend Speaker Series programs and other activities for Academy students held during Activity Period.
3. I will participate in Academy sponsored field trips.
4. I will be required to maintain at least a B in my core subjects (English, math, science and social studies) as well as the academy specific courses.
5. I will maintain a good work ethic that includes completing homework and assignments with high quality.
6. I understand that RCI and Dual Enrollment courses do not fulfill the course and credit requirements of the Academy or General McLane High School.
7. I will be required to participate in at least two shadowing experiences, one in the junior year and one in the senior year. I will be responsible for my own transportation.
8. I am required to complete 40 hours of unpaid apprenticeship at a partner facility between January of my junior year and March of my senior year. I understand I will be responsible for my own transportation.
9. I understand that shadow experiences, volunteer service, and field trips will have dress code requirements as outlined by businesses, hospitals, etc. I agree to abide by those dress guidelines.
10. Medical Academy Only: I understand that I will visit a cadaver lab and have the opportunity to view and touch human organs.
11. Engineering Academy: I understand I will be visiting engineering facilities, including the production floor.
12. I will participate in one or more of the following extra-curricular activities:
 - Engineering: JETS (if qualified); Robobots; Technology Ingenuity Challenge; Behrend Women in Engineering (girls only); or a similar activity approved by the Dean of the Academy.
 - Medical: Key Club, Technology Ingenuity Challenge, Pennsylvania Junior Academy of Science, Environaut, or a similar activity approved by the Dean of the Academy.
10. I understand that I can withdraw at any time and choose not to pursue the curriculum and activities of the Academy of Medical Arts and Engineering. I understand that if I choose to withdraw, I cannot re-enter at a later date and no recognition of participation will be given at commencement or on my transcript.

Student Signature

Parent Signature

Date

Date