

# Eastern Michigan University

## College of Engineering and Technology

Program Growth and Expansion  
Engineering and Technology Complex – Phase II



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## Engineering and Technology Complex

### Documenting the need:

- Rightsizing and enhancing educational space for existing students (Phase I - Underway)
- Expanding space for new students, new courses and new programs (Phase II – Capital Outlay Request)
- Shortage of engineers and technology professionals in Michigan

## Engineering and Technology Complex

- Rightsizing space for existing students
- Expanded and enhanced learning environments

University	College Enrollment	Building Gross Area	Gross Area per Student
Oakland University	1400	127,000 GSF	91
Cleveland State University	2900	290,00 GSF	100
Western Michigan University	2900	323,000 GSF	112
Eastern Michigan University (Current)	2300	169,000 GSF	74
Eastern Michigan University (Proposed)	3800*	380,000 GSF **	100

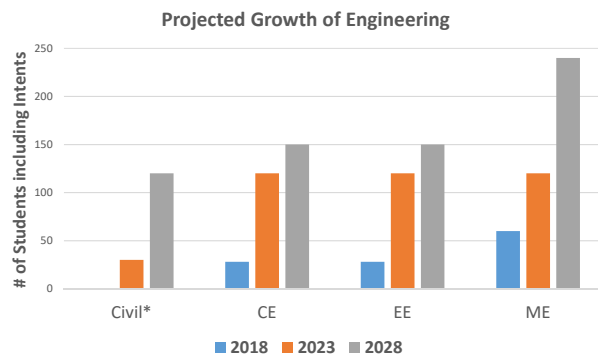
\* Based on projected growth through 2028

\*\* Based on full buildout of College of Engineering and Technology Master Plan

## Engineering Growth and Expansion

### Engineering Programs

- Mechanical Engineering began in Fall 2017
- Electrical & Computer Engineering began in Fall 2018
- Civil Engineering program will begin Fall 2020

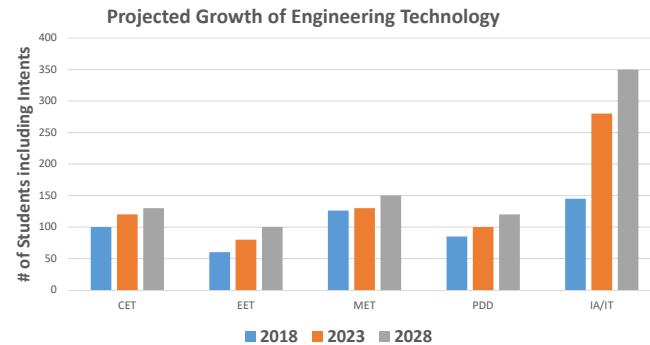


Civil = Civil Engineering (proposal stage)  
 CE = Computer Engineering  
 EE = Electrical Engineering  
 ME = Mechanical Engineering

## Engineering Technology Growth and Expansion

### Projected Growth

- Engineering Technology Programs
- Information Assurance and Cyber Defense
- Information Technology



CET = Computer Engineering Technology  
 EET = Electronics Engineering Technology  
 MET = Mechanical Engineering Technology  
 PDD = Product Design and Development  
 IA/IT = Information Assurance & Cyber Defense, Information Technology

## Engineering and Technology Complex

- Existing conditions
- Building systems and components
- Educational environment

## Engineering and Technology Complex

**PHASE I: Sill Hall –  
Currently Under  
Construction (\$40M)**

**PHASE II: Jones Hall –  
State Capital Outlay  
Request (\$40M)**



## Engineering and Technology Complex

- Conceptual Plans (Multi-phase implementation)
- Renovate existing spaces
- Creation of Engineering and Technology micro-campus
- Create new spaces
- New teaching and learning methods
- New technology
- Current and future trends

## Engineering and Technology Complex

### **Phase I: Sill Hall Renovation (\$40M)**

- Project requested as State Capital from FY2019 (Ranked 3<sup>rd</sup> – Not Funded)
- Demand for new engineering and technology programs accelerated need for improvements
- EMU funded project in December 2017 – Currently under construction (No new program space)

## Engineering and Technology Complex

Phase I:  
Sill Hall Renovation  
\$40M

Opening Fall 2020



CONCEPTUAL RENDERING

TD5

## Engineering and Technology Complex

Phase I:  
Sill Hall Renovation  
\$40M

Opening Fall 2020



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## Engineering and Technology Complex

### **Phase II: Jones Hall Renovation and Expansion**

- State Capital Outlay request for FY2020
- Ranked 3<sup>rd</sup> in university State Capital Outlay request scoring
- Continued growth of current and new programs requires expansion
- \$40M Project Cost

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## Engineering and Technology Complex

### Phase II – Jones Hall

- Repurpose former residence hall, currently closed
- Create new high-tech Engineering and Technology lab spaces
- Enhance space for student-faculty and student collaboration



Jones Hall  
Phase II  
From Southeast

## Engineering and Technology Complex

### Phase II – Jones Hall

- Renovate Jones Hall
- Unused spaces
- Large “courtyard” infilled to create new lab space





## Engineering and Technology Complex

### Existing Conditions

- Jones Hall (1948)
- Closed since 2005
- Original building systems
- Insufficient electrical and mechanical services
- Inefficient energy usage
- \$23M in deferred maintenance needed



## Engineering and Technology Complex

### Existing Conditions in Closed Building (Jones)

- Water infiltration has damaged interior finishes
- The original building was a dormitory. This layout can be adapted for academic offices and collaborative spaces





## Engineering and Technology Complex

### Existing Conditions in Closed Building (Jones)

- Outdated and failed mechanical systems
- Severely limited climate control
- Inadequate ventilation
- Undersized and insufficient electrical service and distribution



## Engineering and Technology Complex

### Existing Conditions in Closed Building (Jones)

- Original interior finishes
- Failing building envelope
- Lack of ADA compliance



## Engineering and Technology Complex

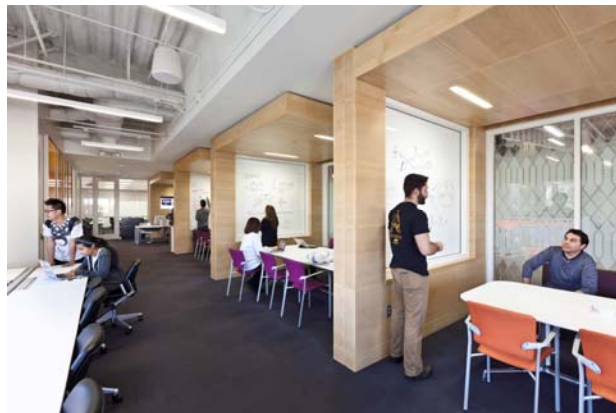
### Program and Design Drivers

- Evolution in Teaching Methods
- Changes in Student Living/Learning Environments
- Advancements in Technology
- Current and Future Trends

## Design and Education Criteria

### Evolution in Teaching Methods

- Interactive spaces
- Active learning



## Design and Education Criteria

### Changes in Student Living/Learning Environments

- Creative “Makers Spaces”
- Hands on learning
- Beyond the Classroom learning



## Design and Education Criteria

### Advancements in Technology

- Virtual reality
- 3D visualization

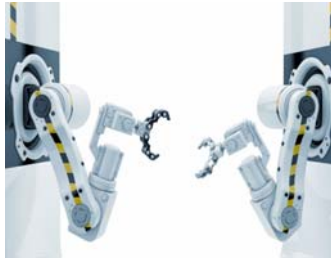


- 3D printing
- Advanced modeling techniques

## Design and Education Criteria

### Advancements in Technology

- Advanced manufacturing
- Autonomous vehicles
- Drone technology
- Robotics



## Design and Education Criteria

### Current and Future Trends

- Enhanced cyber security
- Information Assurance



## What this Means for Michigan

- There is a strong demand for engineers and technology professionals in the State
- Michigan universities only meet 40% of the demand for engineers and Technology Professionals
- Eastern continues collaboration with community colleges, leading the State with over 140 articulation agreements

## What this Means for Michigan

- Michigan engineers will work on this project, in planning, design and in construction
- Nearly 90% of EMU College of Engineering and Technology students are from Michigan
- Nearly 90% of EMU College of Engineering and Technology graduates STAY and work in Michigan
- EMU College of Engineering and Technology graduates fill needed STEM vacancies in the job market.

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