

**Pre-Engineering Program**  
**Henry Ford College**  
**List of suggested electives**

**Major-specific electives**

Merit: Courses listed below transfer to at-least one or more engineering majors in nearby Universities (U of M – Dearborn, Wayne State)

- ENGR-130: Introduction to Engineering (all majors)
- ENGR-201 Science of Materials (mechanical, industrial, and manufacturing, civil)
- ENGR-232 Statics (mechanical, industrial, and manufacturing, civil)
- ENGR-233 Dynamics (mechanical)
- ENGR-240 Circuits (electrical, computer, and robotics)
- BIO-131: Introduction to Biology
- BIO-152: Cells and Molecular Biology (WSU only)
- BAC 131: Introduction to Financial Accounting (industrial at U of M)
- BAC 132: Introduction to Managerial Accounting (industrial at U of M)
- MATH 275: Discrete Mathematics (computer at U of M)
- CHEM-142 General Chemistry II (U of M only: industrial, manufacturing, and mechanical)
- CHEM 241: Organic Chemistry I
- CHEM 242: Organic Chemistry II
- CHEM 243: Microscale Organic Chemistry Laboratory I
- DRAF-120: Introduction to CAD (U of M only: industrial, manufacturing, and mechanical)

**Career oriented electives**

Merit: Companies prefer Engineering Students for Co-op and internship. However, a minimum set of skills is needed to perform well at workplaces. You can gain minimum sets of skills by taking any category of courses below.

- SCO-190: Co-op in Science
- SCO-290: Co-op in Science
- CATIA Certificate*
  - DRAF-123: Introduction to CATIA V5
  - DRAF-125: CATIA V5 Level II
  - DRAF-127: CATIA V5 Level III
- UG NX Certificate*
  - DRAF-131: UG NX Level 1 - Introduction
  - DRAF-132: UG NX Level II - Intermediate
  - DRAF-133: UG NX Level III - Advanced
  - DRAF-134: UG NX Level IV – Applications
- SolidWorks Certificate*
  - DRAF-122: SolidWorks Level I - Introduction
  - DRAF-124: SolidWorks Level II - Advanced
  - DRAF-126: SolidWorks Level III – Applications
- ELEC-245: Programmable Controllers

- ELEC 255 Instrumentation Systems
- ACT-116: Basic Architectural CAD
- ACT 124: Construction Systems 1
- MTT 100: Machine Tool Processes I
- MTT 140: Introduction to CNC
- MTT-145: CNC Operations
- *Computer Networking Academy Certificate*
  - CNT-110: CCNA: Networking I
  - CNT-120: CCNA: Networking II
  - CNT-210: CCNA: Networking III
  - CNT-220: CCNA: Networking IV
- CIS-122: Web Internet Technologies
- CIS-126: XHTML/HTML/CSS Web Programming
- CIS-172: JavaScript
- CIS-222: Web Database Development with PHP
- CIMWD-100: Weld Joint Design and Preparation (Safety/Joint Design)
- CIMWD-101: Weld Joint Design and Preparation (Welding Code, Weld Measurement, and Hand Tools)
- CIMWD-102: Weld Joint Design and Preparation (Material Cutting, Grinding, and Fabrication)
- CIMWD-130: Gas Metal Arc Welding (Flat and Horizontal)
- CIMWD-131: Gas Metal Arc Welding (Vertical and Overhead Welding)

For more information, contact Dr. Hassan Nameghi, Pre-Engineering Department Chair at [hnameghi@hfcc.edu](mailto:hnameghi@hfcc.edu) .