

**Departmental/Program Major Courses (120 credits)**

**Required Major Courses (59 credits)**

- \_\_\_\_\_ (3) MET 10200 – Production Specifications
- \_\_\_\_\_ (3) MET 11100 – Applied Statics
- \_\_\_\_\_ (1) MET 11300 -- Mechanics Applications
- \_\_\_\_\_ (3) Materials and Processes Selective
- \_\_\_\_\_ (3) MET 23000 -- Fluid Power
- \_\_\_\_\_ (3) MET 24500 – Manufacturing Systems
- \_\_\_\_\_ (3) MET 28400 – Introduction to Industrial Controls
- \_\_\_\_\_ (3) MFET 24800 -- Introduction to Robot Systems
- \_\_\_\_\_ (3) MFET 34400 – Automated Manufacturing Processes
- \_\_\_\_\_ (3) MFET 37400 – Manufacturing Integration
- \_\_\_\_\_ (3) CNIT 10500 or CNIT 15501 – Introduction to Software Dev Concepts
- \_\_\_\_\_ (3) ENGT 18000—Engineering Technology Foundations
- \_\_\_\_\_ (1) ENGT 18100—Engineering Technology Applications
- \_\_\_\_\_ (3) Manufacturing Selective

**ROET Courses- (21 credits, included in required major courses total)**

- \_\_\_\_\_ (3) Mechatronics/Controls Selective
- \_\_\_\_\_ (3) Manufacturing/Controls Selective
- \_\_\_\_\_ (3) ECET 32700 – Data Acquisitions and Signal Processing
- \_\_\_\_\_ (3) ECET 33700 – Analog Signal Processing
- \_\_\_\_\_ (3) ECET 43000 – Electronics Product and Program Management
- \_\_\_\_\_ (3) ECET 46000 – Project Design and Development
- \_\_\_\_\_ (3) MFET 34800 – Industrial Robots and Motion Control

**Other Departmental/Program Course Requirements (57 credits)**

- \_\_\_\_\_ (3) Freshman Speech Selective (Choose from **COM 11400**, SCLA 10200, **COMM R110**) (*satisfies Oral Communication for core*)
- \_\_\_\_\_ (3) Communications Selective (Choose from COM 31500, **COM 32000**, COM 41500, EDPS 31500)
- \_\_\_\_\_ (3) Technical Writing Selective (Choose from **ENGL 42100**, ENGL 42400, **ENG W231**)
- \_\_\_\_\_ (3) TLI 33400 – Engineering Economics
- \_\_\_\_\_ (3) MA 16010 - Applied Calculus I (*satisfies Quantitative Reasoning for core*)
- \_\_\_\_\_ (3) MA 16020 - Applied Calculus II
- \_\_\_\_\_ (3) ECET 22400 – Electronic Systems
- \_\_\_\_\_ (3) ECET 38001 --- Global/Professional Issues or **TLI 35600 Global Tech Leadership**
- \_\_\_\_\_ (3) CHM 11100 – General Chemistry or **CHEM C101** or **CHEM C105**
- \_\_\_\_\_ (4) PHYS Selective (choose from **PHYS 21800**, PHYS 22000, PHYS 17200) (*satisfies Science for core*)
- \_\_\_\_\_ (3) TECH 12000 - Design Thinking in Technology (*satisfies Information Literacy and Science, Technology & Society for core*)
- \_\_\_\_\_ (3) Science Selective
- \_\_\_\_\_ (3) Freshman Composition Selective (choose ENGL 10600 or 10800, **ENG W131**) (*satisfies Written Communication for core*)
- \_\_\_\_\_ (3) Human Cultures: Humanities Foundation Selective (*satisfies Human Cultures Humanities for core*)
- \_\_\_\_\_ (3) Human Cultures: Behavior/Social Sciences Foundation Selective (*satisfies Human Cultures: Behavioral Sciences for core*)
- \_\_\_\_\_ (3) Humanities/Social Science Elective
- \_\_\_\_\_ (2) Computer Graphics Technology Selective (choose from **CGT 11000** , CGT 16300, or **IT 10500**)
- \_\_\_\_\_ (3) Statistics/Quality Selective (choose between **STAT 30100** or **IT 34200 (TLI 31600 Statistical Quality Control)**)
- \_\_\_\_\_ (3) Technical Elective
- \_\_\_\_\_ (0) Professional Selective
- \_\_\_\_\_ (0) Intercultural Selective

**Free Electives (4 credits)**

**University Core Requirements**

Human Cultures: Behavioral/Social Sciences	<input type="checkbox"/>	_____	Science	<input type="checkbox"/>	<b>PHYS 21800</b>
Human Cultures: Humanities	<input type="checkbox"/>	_____	Science	<input type="checkbox"/>	<b>CHEM 11100</b>
Information Literacy	<input type="checkbox"/>	<b>TECH 12000</b>	Science, Technology & Society	<input type="checkbox"/>	<b>TECH 12000</b>
Oral Communication	<input type="checkbox"/>	<b>COM 11400</b>	Written Communication	<input type="checkbox"/>	<b>ENG W131</b>
Quantitative Reasoning	<input type="checkbox"/>	<b>MA 16010</b>			

The student is ultimately responsible for knowing and completing all degree requirements.  
myPurduePlan is the knowledge source for specific requirements and completion.

Fall 1 <sup>st</sup> Year	CR	GR	Fulfilled by	Spring 1 <sup>st</sup> Year	CR	GR	Fulfilled by
Materials and Processes Selective	3			MA 16010 Applied Calculus I * (Prereq: ALEKS score of 75)	3		
Computer Graphics Selective CGT 11000 Technical Graphics Com	2			MET 11100 Applied Statics (Prereqs: ENGT 18000)	3		
Freshman Composition Selective* <b>*ENG W131 Reading, Writing, &amp; Inquiry I</b>	3			MET 10200 Production Specifications (Prereqs: CGT Selective and ENGT 18000)	3		
ENGT 18000 ENG Tech Foundations	3			Humanities Foundation Selective*	3		
ENGT 18100 ENG Tech Applications	1			CNIT 10500 or <b>CNIT 15501 Introduction to</b>	3		
TECH 12000 Design Thinking in Tech.*	3			<b>Software Development Concepts</b>			
<b>TOTAL CREDIT HOURS</b>	<b>15</b>			<b>TOTAL CREDIT HOURS</b>	<b>15</b>		

Fall 2 <sup>nd</sup> Year	CR	GR	Fulfilled by	Spring 2 <sup>nd</sup> Year	CR	GR	Fulfilled by
MA 16020 Applied Calculus II (Prereq: MA 16010 with a grade of C- or better)	3			MFET 24800 Introduction to Robotics (Prereq: CNIT 15501)	3		
ECET 22400 Electronic Systems (Prereq: MA 16010)	3			MET 28400 Intro to Industrial Controls (Prereq: ECET 22400)	3		
MET 24500 Manufacturing Systems (Prereqs: (Materials Processes Selective and Computer Graphics Selective)	3			CHM 11100 General Chemistry <b>*CHEM C101 Elementary Chemistry I or</b> <b>*CHEM C105 Principles of Chemistry I</b>	3		
Physics Selective* <b>PHYS 21800 General Physics I</b>	4			MET 11300 Mechanics Applications (Prereq: MET 11100)	1		
Freshman Speech Selective* <b>COM 11400 Fundamentals of Speech</b>	3			Technical Elective	3		
<b>Com</b>				Free Elective	3		
<b>TOTAL CREDIT HOURS</b>	<b>16</b>			<b>TOTAL CREDIT HOURS</b>	<b>16</b>		

Fall 3 <sup>rd</sup> Year	CR	GR	Fulfilled by	Spring 3 <sup>rd</sup> Year	CR	GR	Fulfilled by
Communications Selective <b>COM 32000 Small Group Com</b>	3			MFET 37400 Mfg Integration I (Prereq: MET 28400)	3		
MFET 34400 Automated Mfg Processes (Prereq: MET 24500)	3			ECET 32700 Instrument & DAQ Design (Prereqs: ECET 22400, MA 16010, PHYS Sel.)	3		
ECET 33700 Analog Signal Processing (Prereq: ECET 22400 + MA 16020)	3			MET 23000 Fluid Power (Prereqs: (MET 11100 or PHYS 22000) and MA 16010)	3		
Behavioral/Social Science Foundation Selective*	3			Manufacturing Selective	3		
Statistics or Quality Selective	3			Humanities/Social Science Elective	3		
<b>TOTAL CREDIT HOURS</b>	<b>15</b>			<b>TOTAL CREDIT HOURS</b>	<b>15</b>		

Fall 4 <sup>th</sup> Year	CR	GR	Fulfilled by	Spring 4 <sup>th</sup> Year	CR	GR	Fulfilled by
ECET 43000 Electrical and Electronic Product and Program Management	3			ECET 46000 Project Design and Development (Prereq: ECET 43000)	3		
MFET 34800 Ind Robots/Motion Ctrl (Prereq: MET 28400)	3			ECET 38001 Global Prof Issues in ET <b>TLI 35600 Global Technology Leadership</b>	3		
Technical Writing Selective	3			Science Selective*	3		
Mechatronics/Controls Selective	3			Manufacturing/Controls Selective	3		
IET 45100 or <b>TLI 33400 Economic Analysis</b> <b>for Technology Systems</b>	3			Free Elective	1		
<b>TOTAL CREDIT HOURS</b>	<b>15</b>			<b>TOTAL CREDIT HOURS</b>	<b>13</b>		

\*Fulfills University core.

- 120 semester credits and a 2.0 Graduation GPA are required for the Bachelor of Science degree.
- Students must earn a "D-" or better in all courses.
- Courses at Purdue University may only be attempted a maximum of three (3) times, including W, WF, I, IF and all graded attempts.
- 32 credit hours of 300-level or higher courses must be completed at Purdue University.
- Complete a Professional Requirement.  Complete an Intercultural Requirement.

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The student is ultimately responsible for knowing and completing all degree requirements.  
myPurduePlan is knowledge source for specific requirements and completion.

\*\*\*\*\* Updated 4/20/2018

## FALL 2018

### 2018-2019 ROBOTICS ENGINEERING TECHNOLOGY SUPPLEMENTAL INFORMATION

All prerequisites must be met.

**Bold** denotes Columbus location course offering

\*Indicates IUPUC course offering for Columbus location only.

See Student Services Coordinator for course availability.

#### FRESHMAN COMPOSITION SELECTIVE+

ENGL 10600 First-Year Composition

ENGL 10800 Accelerated First-Year Composition

ENGL 10100 English Composition I

**\*ENG W131 Reading, Writing, & Inquiry I**

#### MATERIALS & PROCESSES SELECTIVE

**MET 14300 Materials and Processes I**

**MET 14400 Materials and Processes II**

#### FRESHMAN SPEECH SELECTIVE

**COM 11400 Fundamentals of Speech Communication**

**\*COMM R110 Fundamentals of Speech Communication**

SCLA 10200 Transformative Texts, Critical Thinking and Communication II: Modern World

#### COMMUNICATION SELECTIVE

COM 31500 Speech Communication of Technical Information

**COM 32000 Small Group Communication**

COM 41500 Discussion of Technical Problems

EDPS 31500 Collaborative Leadership: Interpersonal Skills

#### TECHNICAL WRITING SELECTIVE

**ENGL 42100 Technical Writing**

**ENG W231 Professional Writing Skills**

ENGL 42400 Writing For High Technology Industries

#### COMPUTER GRAPHICS SELECTIVE

**CGT 11000 Technical Graphics Communications**

CGT 16300 Graphical Communications and Spatial Analysis

**IT 10500 Intro to Engineering Design (PLTW)**

#### TECHNICAL SELECTIVE

- any 3xxxx or higher ECET course which is not currently required on the plan of study.

CGT 32600 Graphics Standards for Product Definition

CGT 42300 Product Data Management

CGT 42600 Industry Applications of Simulation And Visualization

FNR 30110 Sustainable Forest Products Manufacturing

**IT 33000 Industrial Sales and Sales Management (TLI 34300)**

**IT 34500 Automatic Identification And Data Capture (TLI 31300)**

**IT 35100 Advanced Industrial Safety and Health Management (TLI 33520 + TLI 33610)**

**IT 38100 Total Productive Maintenance (TLI 33620)**

**IT 43400 Global Transportation And Logistics Management (TLI 44275)**

**IT 44200 Production Planning (TLI 43530)**

**IT 48300 Facility Design for Lean Manufacturing (TLI 43540 + TLI 48800)**

MET 30200 CAD in the Enterprise

MET 33400 Advanced Fluid Power

**MET 34600 Advanced Materials in Manufacturing**

MET 43200 Hydraulic Motion Control Systems

MET 43600 Pneumatic Motion Control Systems

MGMT 45500 Legal Background For Business I

**OLS 28400 Leadership Principles (TLI 25300)**

**TLI 31300 Tech Integration: Bar Codes to Biometrics**

**TLI 33620 Total Productive Maintenance**

**TLI 44275 Global Transportation And Logistics Management**

#### STATISTICS OR QUALITY SELECTIVE

**STAT 30100 Elementary Statistical Methods**

**TLI 31600 Statistical Quality Control**

#### PHYSICS SELECTIVE

**PHYS 21800 General Physics I**

PHYS 22000 General Physics

PHYS 17200 Modern Mechanics

#### SCIENCE SELECTIVE

BIOL 11000 Fundamentals of Biology I

BIOL 20300 Human Anatomy and Physiology

**\*BIOL K101 Concepts of Biology I**

CHM 11200 General Chemistry II

CHM 11600 General Chemistry

**\*CHEM C101 Elementary Chemistry I**

**\*CHEM C105 Principles of Chemistry I**  
**PHYS 21900 General Physics II**

PHYS 22100 General Physics  
PHYS 24100 Electricity and Optics

**MECHATRONICS SELECTIVE**

MET 43200 Hydraulic Motion Control Systems  
MET 43600 Pneumatic Motion Control Systems  
**MET 48200 Mechatronics**

MET 58100 Design for Mechatronics  
**MFET 34800 Advanced Industrial Robotics**

**CONTROLS SELECTIVE**

ECET 27400 Wireless Communications  
ECET 35901 Computer Based Data Acquisition Applications  
ECET 49900 Appl Comp Vision Sensing & Auto  
MET 33400 Advanced Fluid Power  
MET 43200 Hydraulic Motion Control Systems  
MET 43600 Pneumatic Motion Control Systems

**MET 48200 Mechatronics**  
MFET 29200 Projects in Automation, Robotics, and Mechatronics  
MFET 39200 Advanced Projects in Automation, Robotics, and Mechatronics

**TLI 31300 Tech Integration: Bar Codes to Biometrics**

**MANUFACTURING SELECTIVE**

AT 27200 Introduction To Composite Technology  
AT 30802 Aircraft Materials Processes  
AT 47200 Advanced Composite Technology  
CGT 32600 Graphics Standards For Product Definition  
CGT 42300 Product Data Management  
CGT 42600 Industry Applications Of Simulation And Visualization  
ECET 27000 Electronics Prototype Development And Construction  
ECET 49900 Applied Comp Vision Sensing & Auto  
**IT 38100 Total Productive Maintenance (TLI 33620)**  
**IT 43400 Global Transportation And Logistics Management (TLI 44275)**  
**IT 44200 Production Planning (TLI 43530)**

**IT 48300 Facility Design For Lean Manufacturing (TLI 43540 + TLI 48800)**

MET 30200 CAD In The Enterprise  
MET 34900 (Stringed Instrument Design and Manufacture  
**MET 45100 Manufacturing Quality Systems**

MFET 29200 Projects in Automation, Robotics, and Mechatronics  
MFET 39200 Advanced Projects in Automation, Robotics, and Mechatronics

**MFET 49900 (Technology, Innovation and Culture in Bavaria (Study Abroad)**

**TLI 33620 Total Productive Maintenance**

**TLI 44275 Global Transportation And Logistics Management**

**HUMANITIES FOUNDATIONAL SELECTIVE:** (6 credits)

see <http://www.purdue.edu/provost/initiatives/curriculum/course.html>

**BEHAVIORAL/SOCIAL SCIENCE FOUNDATIONAL SELECTIVE:**

see <http://www.purdue.edu/provost/initiatives/curriculum/course.html>

**HUMANITIES/SS ELECTIVE:**

Any 2xxx or higher course in Psychology, Sociology, English, History, Political Science, Philosophy, Anthropology, Economics, or a foreign language. Art history, art appreciation, music appreciation or theater appreciation are acceptable.

**\*ANTH A200 to ANTH A599**

**\*ECON E200 to ECON E599**

**\*ENG G200 to ENG G599**

**\*ENG L200 to ENG L599**

**\*ENG W200 to ENG W599**

**\*HER H100 Art Appreciation**

**\*HIST A200 to HIST A599**

**\*HIST H200 to HIST H599**

**\*HIST K200 to HIST K599**

**\*PHIL P200 to PHIL P599**

**\*POLS Y200 to POLS Y599**

**\*PSY B200 to PSY B599**

**\*SOC R200 to SOC R599**

**FREE ELECTIVE:** Any non-remedial course

**PROFESSIONAL REQUIREMENT:**

The SOET Professional Experience requirement is intended to document those experiences which help expose SOET students to the expectations of their profession prior to graduation. This may occur through industrial experience, technical or administrative involvement with community service, military service, et cetera. Approval has been granted for the following experiences. Additional experiences may also satisfy this graduation requirement. Requests for approval should be submitted to the SOET Curriculum Subcommittee Chair for consideration, allowing at least four academic weeks for review and response.

**Table 1: Approved Professional Experiences**

Approval by	Experience
Automatic	Any TECH Professional Practice course (co-op, intern, etc.)
Automatic	MET 29900 Internship for Credit
Automatic	Industry-sponsored senior capstone
Automatic	EPICS courses, minimum of two
Automatic	Lab Assistant (satisfactory completion of a minimum of one lab division for one term; e.g., ECET 29900 or MET 39200)
Advisor	Any approved internship (assuming student and/or employer provide documentation)
Advisor	Military service (ROTC, reservist, active duty, veteran)
Faculty	Other undergraduate research experiences (e.g., employed in the AEL as lab technician)
Faculty	Independent study – by petition to ensure the project meets the spirit of the requirement
Faculty	Professional society/club activities (e.g., led the Solar Racing team) - by petition
Faculty	Any approved employment

**INTERCULTURAL REQUIREMENT:**

	<b><i>Polytechnic minimum global requirement</i></b>
<b>Step 1:</b>	____ Complete the Pre-test Intercultural Development Inventory Assessments (1 <sup>st</sup> year)
<b>Step 2</b>	____ Complete <b>one (1)</b> of the following global experiences: <ul style="list-style-type: none"><li>○ Participate in a Purdue University international capstone, collaborative project, <b>or</b></li><li>○ Participate in an international internship (international location), <b>or</b></li><li>○ Participate in Faculty-led Study Abroad program, <b>or</b></li><li>○ Participate in a full semester abroad program, <b>or</b></li><li>○ Complete 3 credit hours from the Polytechnic list of recommended Global/ Cultural courses.</li></ul>
<b>Step 3:</b>	____ Complete the Post-test Intercultural Development Inventory Assessments (4 <sup>th</sup> year)
	NOTE FOR TRANSFER/CODO STUDENTS: Transfer and CODO students with less than 75 credit hours remaining to complete their Polytechnic Plan of Study are exempt from Step 1 (taking the IDI Pre-test).  * Global experiences must take place during the time of enrollment in the Polytechnic to complete Step 2. Experiences that have taken place prior to a student’s initial enrollment will not serve to complete Step 2. Intercultural competencies gained on experiences prior to Polytechnic enrollment will be captured as baseline data on a student’s IDI.

Visit [purdue.edu/Columbus](http://purdue.edu/Columbus) > Graduation Requirements for Polytechnic list of recommended Global/Cultural courses.