

Departmental/Program Major Courses (59 credits)

D-“ or better required in all major courses”

Required Major Courses (38 credits)

- _____ (3) MET 10200 – Production Specifications
- _____ (3) MET 11100 – Applied Statics
- _____ (1) MET 11300 – Mechanics Applications
- _____ (3) Materials and Processes Selective (**MET 14300 or MET 14400 Materials and Process I or II**)
- _____ (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 – Introduction to C Programming
- _____ (3) ENGT 18000 – Engineering Technology Foundations
- _____ (1) ENGT 18100 – Engineering Technology Applications
- _____ (3) ¹Manufacturing Selective (**IT 44600 Six Sigma Quality or TLI 43640 Lean Six Sigma**)

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

- _____ (3) ²Mechatronics/Controls Selective (**MET 48200 Mechatronics**)
- _____ (3) ³Manufacturing/Controls Selective (**IT 34500 Auto ID & Data Capture or TLI 31300 Tech Innov. & Integrat'n: Bar Codes & Biometrics**)
- _____ (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) COM 11400 – Fundamentals of Speech Communication (***SPCH-S 121**) (*satisfies Oral Communication for core*)
- _____ (3) COM 32000 – Small Group Discussion
- _____ (3) ENGL 42100 – Technical Writing
- _____ (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
- _____ (3) CHM 11100 – General Chemistry (***CHEM-C 105 + *CHEM-C 125**)
- _____ (4) ⁴PHYS Selective (choose from PHYS 21800, PHYS 22000, PHYS 17200) (***PHYS-P 201**) (*satisfies Science for core*)
- _____ (3) TECH 12000 - Design Thinking in Technology (*satisfies Information Literacy and Science, Technology & Society for core*)
- _____ (3) ⁵Science Selective (***PHYS-P 202**)
- _____ (3) ⁶Freshman Composition Selective (***ENG-W 131**) (*satisfies Written Communication for core*)
- _____ (3) ⁷Human Cultures: Humanities Foundation Selective (*satisfies Human Cultures Humanities for core*)
- _____ (3) ⁸Human Cultures: Behavior/Social Sciences Foundation Selective (*satisfies Human Cultures: Behavioral Sciences for core*)
- _____ (3) ⁹Humanities/Social Science Elective
- _____ (2) ¹⁰Computer Graphics Technology Selective (choose from CGT 11000 , **CGT 16300**, or IT 10500)
- _____ (3) ¹¹Statistics/Quality Selective [choose between **STAT 30100 (*MATH-K 300)**, **IT 34200**, or **TLI 31600**]
- _____ (3) ¹²Technical Elective
- _____ (0) ¹³Professional Selective
- _____ (0) ¹⁴Intercultural Selective

¹⁵Free Electives (4 credits)

- _____ (4) Free Elective (***Apply excess Physics and Chemistry credits here.**)

University Core Requirements *Denotes Richmond Location Course Offering

Human Cultures: Behavioral/Social Sciences	<input type="checkbox"/>	Science	<input type="checkbox"/>	(*PHYS-P 202)
Human Cultures: Humanities	<input type="checkbox"/>	Science	<input type="checkbox"/>	(*CHEM-C105 + C125)
Information Literacy	<input type="checkbox"/>	TECH 12000	<input type="checkbox"/>	TECH 12000
Oral Communication	<input type="checkbox"/>	COM 11400 (*SPCH-S 121)	<input type="checkbox"/>	ENGL 10600 or 10800 (*ENG-W 131)
Quantitative Reasoning	<input type="checkbox"/>	MA 16010		

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

Fall 1 st Year	CR	GR	Sem	Fulfilled by	Spring 1 st Year	CR	GR	Sem	Fulfilled by
ENGT 18000 ENG Tech Foundations	3				MA 16010 Applied Calculus I* (Pre-req: ALEKS score of 75)	3			
ENGT 18100 ENG Tech Applications	1								
MET 14400 Materials and Processes II [Materials and Processes Selective]	3				MET 11100 Applied Statics (Pre-req: ENGT 18000)	3			
CGT 16300 Graph Comm. & Spat Anlys. [¹ Computer Graphics Tech Selective]	2				MET 10200 Production Specifications (Pre-reqs: CGT Selective and ENGT 18000)	3			
TECH 12000 Design Thinking in Tech.*	3				CNIT 10500 Introduction to C Programming	3			
ENG-W 131 (IUE) [⁷ Freshman Composition Selective]	3				⁸ Humanities Foundation Selective*	3			
TOTAL CREDIT HOURS	15				TOTAL CREDIT HOURS	15			

Fall 2 nd Year	CR	GR	Sem	Fulfilled by	Spring 2 nd Year	CR	GR	Sem	Fulfilled by
MET 11300 Mechanics Applications (Pre-req: MET 11100)	1				MET 23000 Fluid Power [Pre-reqs: MET 11100 or PHYS 22000/*PHYS-P 201 (IUE), and MA 16010]	3			
MET 24500 Manufacturing Systems (Pre-reqs: MET 14400 & CGT Selective)	3				MFET 24800 Introduction to Robotic Systems (Pre-req: CNIT 10500)	3			
ECET 22400 Electronics Systems (Pre-req: MA 16010)	3				MET 28400 Intro to Industrial Controls (Pre-req: ECET 22400)	3			
PHYS-P 201, 5 cr (IUE) [⁹ Physics Selective]	4				*PHYS-P 202, 5cr. (IUE) [⁶ Science Selective*]	3			
MA 16020 Applied Calculus II (Pre-req: MA 16010 w/C- or higher)	3				COM 11400 Fund of Speech Communication* *SPCH-S 121 (IUE)	3			
¹⁴ Free Elective [*Apply excess Physics credits here]	1								
TOTAL CREDIT HOURS	15				TOTAL CREDIT HOURS	15			

Fall 3 rd Year	CR	GR	Sem	Fulfilled by	Spring 3 rd Year	CR	GR	Sem	Fulfilled by
MFET 34400 Automated Mfg. Processes (Pre-req: MET 24500)	3				MFET 37400 Mfg. Integration I (Pre-req: MET 28400)	3			
MFET 34800 Ind. Robots/Motion Ctrl (Pre-req: MET 28400)	3				ECET 32700 Instrument & DAQ Design (Pre-reqs: ECET 22400, MA 16010, and PHYS)	3			
ECET 33700 Analog Signal Processing (Pre-reqs: ECET 22400 and MA 16020)	3				ECET 38001 Global Professional Issues in EET	3			
IT 34200 Intro to Statistical Quality or TLI 31600 Statistical Quality Control [¹² Statistics/Quality Selective]	3				IT 44600 Six Sigma Quality (Pre-req: IT 34200) or TLI 436400 Lean Six Sigma (Pre-req: TLI 31600) [¹ Manufacturing Selective]	3			
IT 34500 Auto ID and Data Capture or TLI 31300 Tech Innovation & Integration: Bar Codes & Biometrics [³ Manufacturing/Controls Selective]	3				CHM 11100 General Chemistry* *CHEM-C 105 + CHEM-C 125 (IUE)	3			
TOTAL CREDIT HOURS	15				TOTAL CREDIT HOURS	15			

Fall 4 th Year	CR	GR	Sem	Fulfilled by	Spring 4 th Year	CR	GR	Sem	Fulfilled by
ECET 43000 – Electronic Product and Program Management	3				ECET 46000 – Project Design and Development (Pre-req: ECET 43000)	3			
MET 48200 Mechatronics [² Mechatronics/Controls Selective]	3				¹³ Technical Selective	3			
ENGL 42100 Technical Writing [Pre-req: ENGL 10600/ *ENG-W 131 (IUE)]	3				COM 32000 Small Group Communication [⁴ English/Communication Selective]	3			
⁹ Behavioral/Social Science Foundation Selective*	3				¹⁰ Humanities/Social Science Elective (200-level or higher)	3			
IET 45100 or TLI 33400 Engineering Economics	3				¹⁴ Free Elective [*Apply excess Physics & Chemistry credits here]	3			
TOTAL CREDIT HOURS	15				TOTAL CREDIT HOURS	15			

*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 the Purdue University location conferring the degree.
- Complete a Professional Requirement. Complete an Intercultural Requirement.

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

Revised 5/1/2017 (Effective Fall 2017)

2017-2018 MFET SUPPLEMENTAL INFORMATION

Robotics Engineering Technology major

All prerequisites must be met.

Bold indicates courses offered at Richmond Location.

***Indicates IUE courses for Richmond Location only.**

See Student Services Coordinator for course availability.

¹MANUFACTURING 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 & Visualization
ECET 49900 Applied Comp Vision Sensing & Auto
IT 38100 Total Productive Maintenance
IT 43400 Global Transportation & Logistics Mgmt
IT 44200 Production Planning
IT 44600 Six Sigma Quality

(TLI 43640 Lean Six Sigma)

IT 48300 Facility Design for Lean Manufacturing

MET 30200 CAD in the Enterprise
MET 45100 Manufacturing Quality Systems
MFET 29200 Projects in Automation, Robotics, and Mechatronics
MFET 39200 Advanced Projects in Automation, Robotics, and Mechatronics
TLI 33620 Total Productive Maintenance
TLI 44275 Global Transportation & Logistics Management

²MECHATRONICS 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

³CONTROLS SELECTIVE:

MET 33400 Advanced Fluid Power
MET 43600 Pneumatic Motion Control Systems
MET 43200 Hydraulic Motion Control Systems
MET 48200 Mechatronics

MFET 29200 Projects in Automation, Robotics, and Mechatronics
MFET 39200 Adv Projects in Automation, Robotics, & Mechatronics
TLI 31300 Tech Integration: Bar Codes to Biometrics

⁴PHYSICS SELECTIVE:

PHYS 21800 General Physics
PHYS 22000 General Physics

***PHYS-P 201**
PHYS 17200 Modern Mechanics

⁵SCIENCE SELECTIVE:

BIOL 11000 Fundamentals of Biology I
BIOL 20300 Human Anatomy and Physiology
CHM 11200 General Chemistry II
CHM 11600 General Chemistry

PHYS 21900 General Physics II
PHYS 2210 General Physics
***PHYS-P 202**
PHYS 24100 Electricity and Optics

⁶FRESHMAN COMPOSITION SELECTIVE:

ENGL 10600 First-Year Composition
***ENG-W 131**

ENGL 10800 Accelerated First-Year Composition

⁷HUMANITIES FOUNDATIONAL SELECTIVE: see <http://www.purdue.edu/provost/initiatives/curriculum/course.html>

***ENGL-L 204**
***FINA-A 101, *FINA-A 102**
***FINA-F 100, *FINA-H 100**
***FINA-S 200, *FINA-S 260**
***FREN-F 100, *FREN-F 150,**

***FREN-F 200, *FREN-F 250**
***HIST-H 105, *HIST-H 106**
***MUS-M 174, *MUS-T 101,**
***MUS-Z 393**
***PHIL-P 100, *PHIL-P 120,**

***PHIL-P 140**
***SPAN-S 100, *SPAN-S 150,**
***SPAN-S 200, *SPAN-S 250**
***THTR-T 210**

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⁸BEHAVIORAL/SOCIAL SCIENCE FOUNDATIONAL SELECTIVE: see <http://www.purdue.edu/provost/initiatives/curriculum/course.html>

***ANTH-A 104, *ANTH-E 320**

***ECON-E 103, *ECON-E 104**

***ENG-G 205**

***POLY-Y 103, *POLY-Y 109,**

***POLY-Y 324**

***PSY-P 103, *PSY-P 216**

***SOC-S 100**

***SPCH-S 122**

⁹HUMANITIES/SS ELECTIVE:

Any ***200-level** 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.

***ENG-G 205, *ENGL-L 204**

***FINA-S 200, *FINA-S 260**

***FREN-F 200, *FREN-F 250**

***MUS-Z 393**

***POLY-Y 324**

***PSY-P 216**

***SPAN-S 200, *SPAN-S 250**

***THTR-T 210**

¹⁰COMPUTER GRAPHICS SELECTIVE:

CGT 11000 Technical Graphics Communications

CGT 16300 Graphical Communications and Spatial Analysis

IT 10500 Intro to Engineering Design

¹¹STATISTICS OR QUALITY SELECTIVE:

STAT 30100 Elementary Statistical Methods

***MATH-K 300**

TLI 31600 Statistical Quality Control

¹²TECHNICAL SELECTIVE:

Any 200-level 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 & Visualization

FNR 30110 Sustainable Forest Products Manufacturing

IT 33000 Industrial Sales & Sales Management

IT 34500 Automatic Identification & Data Capture

IT 35100 Advanced Industrial Safety & Health Management

IT 38100 Total Productive Maintenance

IT 43400 Global Transportation & Logistics Management

IT 44200 Production Planning

IT 48300 Facility Design for Lean Manufacturing

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 31300 Tech Integration: Bar Codes to Biometrics

TLI 33620 Total Productive Maintenance

TLI 44275 Global Transportation & Logistics Management

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¹³PROFESSIONAL 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

¹⁴INTERCULTURAL REQUIREMENT:

All students must complete the School of Engineering Technology (Polytechnic) Growth Plan for Global Awareness and Intercultural Competency at the Developmental Level (see below). Students who are interested in further developing their Global Awareness and Intercultural Competency are encouraged to complete the requirement at the Emerging Level or the Proficient Level (see advisor for more information).

Polytechnic Growth Plans for Global Awareness & Intercultural Competency

Intercultural Growth Plan #1	Developmental Level Competency
Assessment	<ul style="list-style-type: none"> ___ Complete the Pre- and Post-Intercultural Development Inventory Assessments (1st year & 4th year) ___ Complete the pre- and post- BEVI (1st & 4th years)
	<ul style="list-style-type: none"> ___ Complete one of the following Intercultural Knowledge and Effectiveness components below: (This list will be reviewed and updated each year) · Crosswalk Commons (residential living Experience for a minimum of one semester) · Serve as a BGRI Program leader · PUPIL (Purdue University Passport to Intercultural Learning) (Obtain at least two badges) · Participate in two (2) Boiler Out Program Activities · Participate in Host-a-Boiler
	<ul style="list-style-type: none"> Complete one of the following: · An international project or collaborative project, or · An international internship, or · A Faculty-led Study Abroad program, or · Three credit hours of courses** from the Polytechnic list of approved of recommended Global/Intercultural courses. **<i>Must be in a category other than Increasing Self-awareness</i>

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¹⁵**FREE ELECTIVE:** Any non-remedial courses.

***Apply excess Physics and Chemistry credits here.**