

**Departmental/Program Major Courses (59 credits)**

120-cr for graduation

"D-" or better required in all major courses

**Required Major Courses (35 credits)**

- \_\_\_\_\_ (3) MET 10200 – Production Specifications
- \_\_\_\_\_ (3) MET 11100 – Applied Statics
- \_\_\_\_\_ (1) MET 11300 – Mechanics Applications
- \_\_\_\_\_ (3) MET 14400 – Materials and Processes II
- \_\_\_\_\_ (3) MET 23000 – Fluid Power
- \_\_\_\_\_ (3) MET 24500 – Manufacturing Systems
- \_\_\_\_\_ (3) MET 28400 – Introduction to Industrial Controls
- \_\_\_\_\_ (3) MFET 24800 – Introduction to Robotic Systems
- \_\_\_\_\_ (3) MFET 34400 – Automated Manufacturing Processes
- \_\_\_\_\_ (3) MFET 37400 – Manufacturing Integration
- \_\_\_\_\_ (3) ENGT 18000 – Engineering Technology Foundations
- \_\_\_\_\_ (1) ENGT 18100 – Engineering Technology Applications
- \_\_\_\_\_ (3) <sup>1</sup>Manufacturing Selective (**IT 44600 Six Sigma Quality or TLI 43640 Lean Six Sigma**)

**Robotics Courses- (24 credits, included in required major courses total)**

- \_\_\_\_\_ (3) <sup>2</sup>Mechatronics/Controls Selective (**MET 48200 Mechatronics**)
- \_\_\_\_\_ (3) <sup>3</sup>Manufacturing/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 – Electronic Product and Program Management
- \_\_\_\_\_ (3) ECET 46000 – Project Design and Development
- \_\_\_\_\_ (3) CNIT 10500 – Introduction to C Programming
- \_\_\_\_\_ (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) <sup>4</sup>English/Communication Selective (**COM 32000 – Small Group Discussion**)
- \_\_\_\_\_ (3) ENGL 42100 – Technical Writing
- \_\_\_\_\_ (3) IET 45100 or **TLI 33400** – Engineering Economics
- \_\_\_\_\_ (3) MA 16010 – Applied Calculus I (*satisfies Quantitative Reasoning for core*)
- \_\_\_\_\_ (3) MA 16020 – Applied Calculus II
- \_\_\_\_\_ (3) ECET 22400 – Electronics Systems
- \_\_\_\_\_ (3) ECET 38001 – Global/Professional Issues
- \_\_\_\_\_ (3) CHM 11100 – General Chemistry (**\*CHEM-C 105 + CHEM-C 125**)
- \_\_\_\_\_ (4) <sup>5</sup>PHYS 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) <sup>6</sup>Science Selective (**\*PHYS-P 202**)
- \_\_\_\_\_ (3) <sup>7</sup>Freshman Composition Selective (**\*ENG-W 131**) (*satisfies Written Communication for core*)
- \_\_\_\_\_ (3) <sup>8</sup>Human Cultures: Humanities Foundation Selective (*satisfies Human Cultures Humanities for core*)
- \_\_\_\_\_ (3) <sup>9</sup>Human Cultures: Behavior/Social Sciences Foundation Selective (*satisfies Human Cultures: Behavioral Sciences for core*)
- \_\_\_\_\_ (3) <sup>10</sup>Humanities/Social Science Elective (200 level or higher)
- \_\_\_\_\_ (2) <sup>11</sup>Computer Graphics Technology Selective (choose from CGT 11000, **CGT 16300**, or IT 10500)
- \_\_\_\_\_ (3) <sup>12</sup>Statistics/Quality Selective (choose between STAT 30100, **IT 34200**, or **TLI 31600**)
- \_\_\_\_\_ (3) <sup>13</sup>Technical Selective

**Free Elective (4 credit hours)**

- \_\_\_\_\_ (4) <sup>14</sup>Free Electives (**\*apply excess Physics and Chemistry credits here**)

**University Core Requirements**

Human Cultures: Behavioral/Social Sciences	<input type="checkbox"/>	_____	Science	<input type="checkbox"/>	<b>(*PHYS-P 202)</b>
Human Cultures: Humanities	<input type="checkbox"/>	_____	Science	<input type="checkbox"/>	<b>(*CHEM-C 105 + C 125)</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>ENGL 10600 or 10800</b>
		<b>(*SPCH-S 121)</b>			<b>(*ENG-W 131)</b>
Quantitative Reasoning	<input type="checkbox"/>	<b>MA 16010</b>			

\*Denotes Richmond Location Course Offering

Updated 5/27/2016

The student is ultimately responsible for knowing and completing all degree requirements.



Fall 1 <sup>st</sup> Year	CR	GR	Sem	Fulfilled by	Spring 1 <sup>st</sup> 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 11100 Applied Statics (Pre-req: ENGT 18000)	3			
MET 14400 Materials and Processes II	3				MET 10200 Production Specifications (Pre-reqs: CGT Selective and ENGT 18000)	3			
CGT 16300 Graph Comm. & Spat Anlys. [ <sup>11</sup> Computer Graphics Tech Selective]	2				CNIT 10500 Introduction to C Programming	3			
TECH 12000 Design Thinking in Tech.*	3				<sup>8</sup> Humanities Foundation Selective*	3			
*ENG-W 131 (IUE) [ <sup>7</sup> Freshman Composition Selective*]	3								
<b>TOTAL CREDIT HOURS</b>	<b>15</b>				<b>TOTAL CREDIT HOURS</b>	<b>15</b>			

Fall 2 <sup>nd</sup> Year	CR	GR	Sem	Fulfilled by	Spring 2 <sup>nd</sup> 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) [ <sup>9</sup> Physics Selective*]	4				*PHYS-P 202, 5cr. (IUE) [ <sup>6</sup> 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			
<sup>14</sup> Free Elective [*Apply excess Physics credit here]	1								
<b>TOTAL CREDIT HOURS</b>	<b>15</b>				<b>TOTAL CREDIT HOURS</b>	<b>15</b>			

Fall 3 <sup>rd</sup> Year	CR	GR	Sem	Fulfilled by	Spring 3 <sup>rd</sup> 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 [ <sup>12</sup> Statistics/Quality Selective]	3				IT 44600 Six Sigma Quality (Pre-req: IT 34200) or TLI 436400 Lean Six Sigma (Pre-req: TLI 31600) [ <sup>1</sup> Manufacturing Selective]	3			
IT 34500 Auto ID and Data Capture or TLI 31300 Tech Innovation & Integration: Bar Codes & Biometrics [ <sup>3</sup> Manufacturing/Controls Selective]	3				CHM 11100 General Chemistry* *CHEM-C 105 + CHEM-C 125 (IUE)	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	Sem	Fulfilled by	Spring 4 <sup>th</sup> 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 [ <sup>2</sup> Mechatronics/Controls Selective]	3				<sup>13</sup> Technical Selective	3			
ENGL 42100 Technical Writing [Pre-req: ENGL 10600/ *ENG-W 131 (IUE)]	3				COM 32000 Small Group Communication [ <sup>4</sup> English/Communication Selective]	3			
<sup>9</sup> Behavioral/Social Science Foundation Selective*	3				<sup>10</sup> Humanities/Social Science Elective (200-level or higher)	3			
IET 45100 or TLI 33400 Engineering Economics	3				<sup>14</sup> Free Elective [*Apply excess Physics & Chemistry credits here]	3			
<b>TOTAL CREDIT HOURS</b>	<b>15</b>				<b>TOTAL CREDIT HOURS</b>	<b>15</b>			

Refer to the 2016 MFET Robotics Engineering Technology supplemental Information page for options for electives, selectives, and pre-requisites.

\*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 location conferring the degree.

**MFET SUPPLEMENTAL INFORMATION**  
**Robotics Engineering Technology Major**  
**All pre-requisites must be met.**

**Bold indicates courses offered at Richmond Location.**  
**\*Indicates IUE courses for Richmond Location only.**

See Student Services Coordinator for course availability.

**<sup>1</sup>MANUFACTURING SELECTIVE**

AT 27200 Intro to Composite Technology  
AT 30800 Aircraft Materials Processes  
AT 40800 Advanced Aircraft Manufacturing Processes  
AT 47200 Advanced Composite Technology  
CGT 32600 Graphics Standards for Product Definition  
CGT 42300 Product Data Management  
CGT 42600 Industrial Applications for Simulation  
**IT 21400 Introduction to Lean Manufacturing**  
**IT 38100 Total Productive Maintenance**  
**IT 38500 Industrial Ergonomics**  
**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 & Mechatronics  
MFET 34200 Adv. Manufacturing Processes & Practices  
MFET 39200 Adv. Projects in Automation, Robotics & Mechatronics  
MFET 44600 Advanced Manufacturing Operations

**<sup>2</sup>MECHATRONICS SELECTIVE**

**MET 48200 Mechatronics**

MET 58100 Design of Mechatronics Systems

**<sup>3</sup>CONTROLS SELECTIVE**

**IT 34500 Automatic Identification and Data Capture**  
**(TLI 31300 Tech Innov. & Integrat'n: Bar Codes & Biometrics)**  
IT 44500 Problem-Solving w/Automatic Data Collection  
MET 33400 Advanced Fluid Power

MET 43200 Hydraulic Motion Control Systems  
MET 43600 Pneumatic Motion Control Systems  
MFET 29200 Projects in Automation, Robotics & Mechatronics  
MFET 39200 Adv. Projects in Automation, Robotics & Mechatronics

**<sup>4</sup>ENGLISH/COMMUNICATION SELECTIVE**

COM 31500 Technical Communications  
COM 31800 Principles of Persuasion  
**COM 32000 Small Group Communication**  
COM 32500 Interviewing Principles and Practices  
COM 41500 Discussion of Technical Problems

ENGL 20500 Introduction to Creative Writing  
ENGL 30400 Advanced Composition  
ENGL 30900 Computer Aided Publishing  
ENGL 41900 Multimedia Writing  
**\*300- or 400-level courses in \*SPCH-S or \*CMCL-C**

**<sup>5</sup>PHYSICS SELECTIVE**

PHYS 21800 General Physics  
PHYS 22000 General Physics

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

**<sup>6</sup>SCIENCE SELECTIVE**

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

PHYS 21900 General Physics II  
PHYS 22100 General Physics  
**\*PHYS-P 202**  
PHYS 24100 Electricity and Optics

**<sup>7</sup>FRESHMAN COMPOSITION SELECTIVE**

ENGL 10600 First-Year Composition  
ENGL 10800 Accelerated First-Year Composition

**\*ENG-W 131**

**<sup>8</sup>HUMANITIES 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,**

**<sup>9</sup>BEHAVIORAL/SOC. SCI. FOUNDATIONAL SELECTIVE:** see <http://www.purdue.edu/provost/initiatives/curriculum/course.html> *Updated 5/27/2016*

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

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

**\*ENG-G 205**

**\*POLS-Y 103, \*POLS-Y 109, \*POLS-Y 324**

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

**\*THTR-T 210**

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

**\*SOC-S 100**

**\*SPCH-S 122**

**<sup>10</sup>HUMANITIES/SOCIAL SCIENCE 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**

**\*POLS-Y 324**

**\*PSY-P 216**

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

**\*THTR-T 210**

**<sup>11</sup>COMPUTER GRAPHICS TECHNOLOGY SELECTIVE**

**CGT 11000 Technical Graphics Communications**

**CGT 16300 Graphical Communicat'n & Spatial Analysis**

IT 10500 Intro to Engineering Design

**<sup>12</sup>STATISTICS/QUALITY SELECTIVE**

STAT 30100 Elementary Statistical Methods

**\*MATH-K 300**

**IT 34200 Introduction to Statistical Quality  
(TLI 31600 Statistical Quality Control)**

**<sup>13</sup>TECHNICAL SELECTIVE**

CGT 32600 Graphics Standards for Product Definition

CGT 42300 Product Data Management

CGT 42600 Industry Applications of Simul'n & Visualiz'n

FNR 30100 Wood Products/Wood Processes

IT 33000 Industrial Sales and Sales Management

**IT 34500 Automatic Identification and Data Capture**

**IT 35100 Occupational Safety and Health**

**IT 38100 Total Product Maintenance**

**IT 43400 Global Transportation and Logistics**

**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

MET 43600 Pneumatic Motion Control

MGMT 45500 Legal Background for Business I

**OLS 28400 Leadership Principles**

**<sup>14</sup>FREE ELECTIVES:** Any non-remedial courses.

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

