

	Name:
Polytechnic Institute South Bend Engineering To	echnology (FT)

Concentration: Technology Integration

**ET-BS Suggested Arrangement of Courses** Catalog Term: \_ \_\_ PUID: \_

For Catalog Term beginning in fall 2020

Major Code: FNGT Program Code: PI-ET-BS

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Fall 1 <sup>st</sup> Year	C R	GR	Sem	Fulfilled by	Spring 1 <sup>st</sup> Year	CR	GR	Sem	Fulfilled by
Written Communication Foundation Selective*	3				Programming Selective	3			
ENGT 18000 – Engineering Technology Foundations	3				MA 16010 Applied Calculus I (P: MA 15800 with grade of C- or better or ALEKS score 75)	3			
ENGT 18100 – Engineering Technology Applications	1				Humanities/Liberal Arts	3			
MA 15800* - Precalculus – Functions & Trigonometry (Prereq ALEKS score 60)	3				PHYS 22000 General Physics*	4			
MET 14300 – Materials & Processes I OR MET 14400 Materials & Processes II	3				Freshman Speech Selective*	3			
TECH 12000 Design Thinking in Tech.*	3								
TOTAL CREDIT HOURS	16				TOTAL CREDIT HOURS	16			

Fall 2 <sup>nd</sup> Year	C R	GR	Sem	Fulfilled by	Spring 2 <sup>nd</sup> Year	CR	GR	Sem	Fulfilled by
CGT 11000 – Technical Graphic Communications OR CGT 11600	3				MET 11100 Applied Statics (P: ENGT 18000)	3			
ECET Selective	3				ECET Selective	3			
Humanities Foundation Selective*	3				Computer-Aided Design Selective	3			
Technical Selective	3				Lab Science Foundation Selective*	4			
IET 11100 Introduction to Manufacturing & Supply Chain	3				TLI 11200 Foundation of Organizational Leadership	3			
TOTAL CREDIT HOURS	15				TOTAL CREDIT HOURS	16			

Fall 3 <sup>rd</sup> Year	C R	GR	Sem	Fulfilled by	Spring 3 <sup>rd</sup> Year	CR	GR	Sem	Fulfilled by
MET 24500 – Manufacturing Systems (P: MET 14300 OR 14400 and CGT 11000)	3				Technical Selective	3			
ENGL 42100 Technical Writing (P: SCLA 10100)	3				Technical Selective	3			
Technical/Management Selective	3				Global/Professional Selective	3			
IET 31600 Statistical Quality Control (P: MA 15800)	3				ECON 21000 – Principles of Econ	3			
Advanced Oral Communication Selective	3				Technical Selective (30000- 40000 level)	3			
TOTAL CREDIT HOURS	15				TOTAL CREDIT HOURS	15			

Fall 4 <sup>th</sup> Year	C R	GR	Sem	Fulfilled by	Spring 4 <sup>th</sup> Year	CR	GR	Sem	Fulfilled by
Senior Capstone Project Selective I	3				Senior Capstone Project Selective II	3			
IET 33400 Economic Analysis for Tech Systems (P: Math or Statistics)	3				Technical Selective (30000- 40000 level)	3			
Technical Selective (30000- 40000 level)	3				Technical Selective (30000- 40000 level)	3			
Technical Selective (30000- 40000 level)	3				Free Elective	3			
Free Elective	3				Intercultural Requirement	0			
					Professional Requirement	0			
TOTAL CREDIT HOURS	15				TOTAL CREDIT HOURS	12			

Refer to the 2020 ENGT Supplemental Instruction form for optional courses to complete selectives and prerequisites.

\*Fulfills University Core Requirement

- 1. 120 semester credits and a 2.0 Graduation GPA are required for the Bachelor of Science degree.
- 2. 32 credits of upper division courses (30000 level or higher) must be taken at Purdue University.
- 3. Courses at Purdue University may only be attempted a maximum of three (3) times, including W, WF, I, IF and all graded attempts.
- 4. Complete the Global/Intercultural Requirement (ungraded)
- 5. Complete the Professional Requirement (ungraded)

# **New Albany Engineering Technology Supplemental Information**

All prerequisites must be met

## WRITTEN COMMUNICATION SELECTIVE

**ENGL 10600 First-Year Composition** 

ENGL 10800 Accelerated First Year Composition

SCLA 10100 Transformative Texts, Critical Thinking & Comm I: Antiquity to Modernity

#### ORAL COMMUNICATION SELECTIVE

COM 11400 Fundamental of Speech Communication

SCLA 10200 Transformative Texts, Critical Thinking & Comm II: Modern World

## **PROGRAMMING SELECTIVES**

**CNIT 10500 Introduction to C Programming** 

**CNIT 17500 Visual Programming** 

CNIT 15501 Introduction to Software Development Concepts

MET 16400 Computing in Engineering Technology

## **ECET SELECTIVES**

Select one two-course sequence from the table below.

ECET 17700 DAQ & Systems Control (P: ENGT 18000 & 18100)	AND	ECET 17900 Intro to Digital Systems (P: ENGT 18000, ENGT 18100 & CNIT 10500)
ECET 22400 Electronic Systems	AND	ECET 17900 Intro to Digital Systems (P: ENGT 18000, ENGT 18100 & CNIT 10500)
ECET 22400 Electronic Systems	AND	ECET 30201 Introduction to Industrial Controls (P: ECET 17700 or ECET 22400)
ECET 22400 Electronic Systems	AND	ECET 38501 (formerly ECET 38500) Intro to Automotive Electronics (P: ECET 22400 or 22700)

#### COMPUTER-AIDED DESIGN SELECTIVES

CGT 22600 Introduction to Constraint-based Modeling

**MET 10200 Production Design and Specifications** 

### TECHNICAL /MANAGEMENT SELECTIVES

Any Management (MGMT) course at the 200-level or higher

TECH 32000 Technology and the Organization	TLI 15200 Business Principles in Org Leadership
TLI 21300 Project Management	IET 21400 Intro to Supply Chain Systems
TLI 25300 Principles of Technology Strategy	TLI 25400 Leading Change in Technology Organizations
TLI 31400 Leading Innovation in Org	IET 43530 Operations Plan & MGMT
IET 41400 Financial Analysis for Tech	Approved Study Abroad

#### GLOBAL/PROFESSIONAL SELECTIVES

ECET 38001 Global/Professional Issues in ET	TECH 33000 Technology and the Global Society
TLI 35600 Global Technology Leadership	Approved Study Abroad

## **ADVANCED ORAL COMMUNICATION SELECTIVE**

## **COM 32000 Small Group Communications**

COM 30300 Intercultural Communication OR COM 31400 Adv. Presentational Speaking

## **TECHNICAL SELECTIVES**

At least 15 credit hours must be at the 30000 level or above and at least 6 credit hours must be in the same discipline.

CGT 32300 Virtual Product Integration (P: CGT 22600)

CGT 32600 Graphics Standards for Product Definition (P: CGT 22600)

#### ECET 30201 Introduction to Industrial Controls (P: ECET 17700 or ECET 22400)

ECET 32100 Introduction to Nanotechnology (P: ECET 22700)

ECET 32700 Instrumentation and DAQ Design (P: Physics I and MA 16010)

ECET 38501 Intro to Automotive Electronics (P: ECET 27700 or ECET 22400) or ECET 38502 Intro to Automotive Electronics Lab

TLI 23500 Introduction to Lean and Sustainable Systems

**TLI 31400 Leading Innovation in Organizations** 

TLI 31500 New Product Development (P: TLI 11200) or TECH 22000 Design Technology For People

IET 33520 Human Factors for Technology Systems

IET 33400 Economic Factors for Technology Systems (P: MA 15800 or STAT 30100) or IT 45000 Prod Cost Analysis

IET 33610 Risk Analysis & Assessment or IT 38500 Industrial Ergonomics

IET 33620 Total Production Maintenance (P: TLI 31600 or IT 34200 or STAT 301, & Physics I) or IT 38100 Total Productive Main

IET 41400 Financial Analysis for Tech Systems (P:TLI 33400 or IT 45000 or MGMT 20010) or IT 43200 Financial Transaction Distrib

IET 43530 Operations Planning and Management (P: MA 15800) or IT 44200 Production Planning

IET 43540 Facilities Planning (P: MET 14300 or 14400, and TLI 43530) or IT 48300 Facilities Design Lean Manufacturing

IET 43640 Lean Six Sigma (P:TLI 31600 or IT 34200) or IT 44600 Six Sigma Quality

TLI 45700 Technology Policy & Law

MET 30200 CAD in the Enterprise (P: MET 10200 and MET 24500)

MET 32000 Applied Thermodynamics (P: MET 22000 and MA 16010)

MET 38200 Controls & Instrumentation (P: MET 28400 and MA 16010)

MET 34600 Adv. Materials in Manufacturing (P: MET 24500, CHM 11100, and MET 21100)

MET 42100 Air Conditioning & Refrigeration (P: MET 32000 or MET 33000)

MET 43200 Hydraulic Motion Control (P: MET 23000 or MET 33000)

MET 43600 Pneumatic Motion Control (P: MET 23000 or MET 33000)

MET 45100 Manufacturing Quality Control (P: STAT 30100)

MFET 30000 Applications of Automation in Manufacturing (P: MET 24500 and ECET 22400)

MFET 34400 Automated Manufacturing Processes (P: MET 24500)

MFET 34800 Advanced Industrial Robotics (P: MFET 24800 and ECET 33700)

MFET 37400 Manufacturing Integration I (P: MET 28400)

## **HUMAN CULTURES HUMANITIES**

See approved UCC Humanities list at: http://www.purdue.edu/provost/initiatives/curriculum/course.html

#### **HUMANITIES/LIBERAL ARTS ELECTIVES**

Any course from the following disciplines: Anthropology, English, History, Philosophy, Political Science, Psychology, Religious Studies, Sociology, Theatre, Women's Studies, or Foreign Languages (except native language courses)

#### LAB SCIENCE SELECTIVES

See approved UCC Science list: http://www.purdue.edu/provost/initiatives/curriculum/course.html

Any non-remedial course offered for credit at the University not already required/being used on the Plan of Study.

SENIOR PROJECT CAPSTONE SELECTIVES - Select one two-course sequence from the table below.

Senior Capstone Project Selective I	Senior Capstone Project Selective II				
ENGT 48000 Engineering Technology Capstone I	And	ENGT 48100 Engineering Technology Capstone II			
ECET 43000 – Product/Project Management (Prerequisite: ECET 38001 & 9- 12 cr. hrs. of coursework in technical focus area)	And	ECET 46000 – Project Design & Development			
MET 40100 – Capstone Projects I (Prerequisites: MET 10200, MET 23000, MET 28400, MET 346000)	And	MET40200 – Capstone Projects II			
MFET 48000 – Project Plan Integration (P: MFET 37400)		MFET 48100 Integration Manufacturing Systems (P: MFET 48000)			
ECET 43000 – Product/Project Management (Prerequisite: ECET 38001 and 9-12 cr. hrs. of coursework in technical focus area)	And	MET 40200 – Capstone Projects II			
ENGT 40500 – Entrepreneurial Capstone I (for entrepreneurial minor senior students only)	And	ENGT 40600 – Entrepreneurial Capstone II (for entrepreneurial minor senior students only)			
ECET 43100 – International Capstone Plan	And	ECET 46100 International Capstone Project Execution			
TECH 39900 Special Topics in Technology III	And	TECH 49900 Special Topics in Technology IV			

## PROFESSIONAL REQUIREMENT - All Students MUST complete

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 i 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.

## **Potential Professional Experiences**

Approval Process	Experience
Automatic	Any TECH Professional Practice course (co-op, intern, etc.)
Automatic	MET 29900 Internship for Credit
Automatic	EPICS courses, minimum of 2
Advisor	Any approved internship (assuming student and/or employer provide
	documentation)
Advisor	Military service (ROTC, reservist, active duty, veteran)
Faculty	Supervised undergraduate research experiences or laboratory assistantships
	(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 or industry project.

## Approval Key:

- Automatic student participation in this professional experience is already documented through existing means.
- Advisor advisor reviews student's experience to determine if it meets the spirit of the Professional Experience requirement.
- Faculty designated committee reviews student's experience to determine if it meets the spirit of the Professional Experience requirement.

## **Intercultural 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

Step 1: Complete the Pre-test Intercultural Development Inventory Assessments (1st year)

Step 2: Complete one (1) of the following global experiences: \*

- Participate in A Purdue University international capstone, collaborative project, or
- Participate in an international internship (international location), or
- Participate in a full semester abroad program, or
- Complete 3 credit hours from the Polytechnic list of recommended Global/Cultural courses.

Step 3: Complete the Post-test Intercultural Development Inventory Assessments (4th year)

NOTE FOR TRANSFER/CODO STUDENTS: Transfer and CODO students with less than 75 credit hours remaining to completed their Polytechnic Plan of Study are exempt from Step 1 (taking the IDI Pretest).

\*Global experiences must take place during the time of enrollment in Polytechnic to complete Step 2. Experiences 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.

# Polytechnic list of recommended Global/Cultural courses

AAS 27100 - Introduction To African American Studies

AAS 37300 - Issues In African American Studies

AGR 20100 - Communicating Across Culture

ANSC 38100 - Leadership For A Diverse Workplace

ANTH 20300 - Biological Bases Of Human Social Behavior

ANTH 20500 - Human Cultural Diversity

ANTH 21000 - Technology And Culture

ANTH 21200 - Culture, Food And Health

ANTH 23000 - Gender Across Cultures

ANTH 34000 - Global Perspectives On Health

ANTH 34100 - Culture And Personality

ANTH 37900 - Native American Cultures

ARAB 28000 - Arabic Culture

ASAM 24000 - Introduction To Asian American Studies

AT 22300 - Human Factors For Flight Crews

CNIT 32000 - Policy, Regulation, And Globalization In Information

Technology

COM 22400 - Communicating In The Global Workplace

COM 30300 - Intercultural Communication

COM 32000 - Small Group Communication

COM 37300 - Self-Presentation And Social Image

COM 41200 - Theories Of Human Interaction

COM 42300 - Leadership, Communication And Organizations

ECET 29000 - International Experience

ECET 38001 - Global Professional Issues In Engineering Technology

EDPS 30000 - Student Leadership Development

EDPS 30100 - Peer Counseling Training

EDPS 31500 - Collaborative Leadership: Interpersonal Skills

EDPS 31600 - Collaborative Leadership: Cross-Cultural Settings

EDPS 31700 - Collaborative Leadership: Mentoring

ENGL 41400 - Studies In Literature And Culture

HDFS 28000 - Diversity In Individual And Family Life

HDFS 33200 - Stress And Coping In Contemporary Families

HEBR 38500 - The Holocaust In Modern Hebrew Literature

HIST 19500 - The Historian's Craft: Historical Research And Film

HIST 30000 - Eve Of Destruction: Global Crises And World

Organization In The 20th Century

HIST 33805 - History Of Human Rights

HIST 35000 - Science And Society In The Twentieth Century World

HIST 36600 - Hispanic Heritage Of The United States

HIST 37700 - History And Culture Of Native America

HIST 46900 - Black Civil Rights Movement

HTM 37000 - Sustainable Tourism And Responsible Travel

HTM 37200 - Global Tourism Geography

MSL 20100 - Individual Leadership Studies

OLS 35000 - Creativity In Business And Industry

PHIL 11400 - Global Moral Issues

PHIL 43500 - Philosophy Of Mind

POL 22200 - Women, Politics, And Public Policy

POL 23500 - International Relations Among Rich And Poor Nations

POL 32600 - Black Political Participation In America

POL 32700 - Global Green Politics

POL 36000 - Women And The Law

POL 41300 - The Human Basis Of Politics

POL 42300 - International Environmental Policy

POL 42900 It's a Complex World

POL 43300 - International Organization

PSY 12000 - Elementary Psychology

PSY 25100 - Health Psychology

PSY 32200 - Neuroscience Of Motivated Behavior

SOC 10000 - Introductory Sociology

SOC 31000 - Racial And Ethnic Diversity

SOC 33900 - Introduction To The Sociology Of Developing Nations

TECH 33000 - Technology And The Global Society

TLI 11200 - Foundations Of Organizational Leadership

TLI 31400 - Leading Innovation In Organizations

WGSS 28200 - Introduction To LGBT Studies

WGSS 38000 - Gender And Multiculturalism

WGSS 38300 - Women And Work

Any foreign language 20000 level or higher (20100, 20200, 30100,

30200)