PURDUE
UNIVERSITY

BS / IDES
120 Credits for Graduation
Students need Cumulative GPA of 2.0 to Graduate

Engineering Education/Interdisciplinary Engineering Program

College of Engineering

Interdisciplinary Engineering Studies Major – Pre-Med Engineering Studies Concentration

Interdisciplinary Engineering Major engineering courses - MAX 24 credits allowed from/in any one engineering discipline, other requirements noted below. This major is NOT an ABET accredited program.

Required Engineering Courses -Selectives & Electives (30 credits)

	(3)	Economics Selective: IE 34300 or (ECON 25100+ ECON25200) †4
	(1)	IDE 30100 Professional Preparation –Junior (Must be taken at Purdue-West Lafayette)
	(3)	Engineering Design (300+ lvl): Must be approved by ENE dept. (e.g. ABE 33000, AAE 25100, CE 45600, IE 38600, etc.)
	(23)	Engineering Elective courses to meet students educational objectives; Engineering courses only)

Must Total (>=30) Credits of Engineering Coursework; Note: 30 credits of 200+ level engineering courses, of which at least 15 credits are 300+

Other Departmental /Program Course Requirements (44-50 credits)

	(4/5)	MA 16500/16100 – Calculus I (*satisfies FYE requirement & quantitative reasoning for core*)
	(4/5)	MA 16600/16200 – Calculus II(*satisfies FYE requirement & quantitative reasoning for core*)
	(4)	CHM 11500 – General Chemistry I (*satisfies FYE requirement & science selective for core*)
	(2)	ENGR 13100*- Transforming Ideas to Innovation I(*satisfies FYE requirement*)
	(2)	ENGR 13200* - Transforming Ideas to Innovation II(*satisfies FYE requirement*)
	(4)	*[can be substituted with approved alternative FYE courses: i.e. ENGR141/2, etc.] ENGL 10600 – English Composition(*satisfies FYE requirement & general education & written com and info literacy for core*)
	(3)	COM 11400 – (*satisfies general education requirement & oral communication for core)*
	(4)	PHYS 17200 – Physics I (*satisfies FYE requirement & science selective for core*)
	(3/4)	CS 15900/CHM 11600- Science selective (*satisfies FYE requirement*)
	(4)	MA 26100 (*satisfies math (MBSE) requirement*)
	(4/6)	MA 26200 or MA 26500 + 26600 (*satisfies math (MBSE) requirement*)
	(3/4)	PHYS 24100/PHYS 27200/BIOL 11000/BIOL 23000 - (*choose one-sophomore science selective*)
	(3)	Statistics Selective: IDE36000 or approved equivalent (IE 23000/33000/ECE 30200/CHE 32000/ STAT 35000/ STAT 51100 – (if non engineering *statistics selective it counts as MBSE; if engr, count as add'l engr course*)

Area Electives (29 credits maximum)

	(29)	Coursework chosen to satisfy student's educational objectives. CGT 11000, 16300 or 16400 (2-3) are *very highly recommended.*

Math, Basic Science, & Engineering -MBSE (44 credits total min. from across entire POS, excluding FYE)

	(3)	Engineering, CS, mathematics or science courses as needed, *that are not used to fulfill FYE requirement*

NOTE: General Education (24 credits): includes ENGL 106 and COM 114 (7 cr) listed above, plus 17-18 credits.

	(3)	GE 1 HSS		(3)	GE 3 STS		(3)	GE 5		(4)	ENGL 10600
	(3)	GE 2 BSS		(3)	GE 4		(2-3)	GE 6		(3)	COM 11400

All Must Total (=>120) Credits to graduate

University Core Requirements

Human Cultures Humanities		**GE 1**
Human Cultures Behavioral/Social Science		**GE 2**
Information Literacy		***ENGL 10600***
Science Selective		**CHM 11500**
Science Selective		**PHYS 17200**

Science, Technology & Society		**GE 3**
Written Communication		***ENGL 10600***
Oral Communication		***COM 11400***
Quantitative Reasoning		**MA 16500 or 16100**

NOTE: *Minimum* engineering credits = 30; *Maximum* AREA Elective credits = 29; *Minimum* Math, Basic Science & Engr. (MBSE) includes mathematics, CS, and engineering credits ***that are not already used to fulfill FYE requirement*** = 44 – more may be taken to meet program total of 120 credits. All plans of study must be approved by the School of Engineering Education. All other Purdue University graduation requirements must be satisfied.

(Effective Fall 2016)

The student is ultimately responsible for knowing and completing all degree requirements.
IDES/MDE web pages and Adviser are knowledge sources for specific requirements and completion.

Interdisciplinary Engineering Studies – Pre-Med Engineering Studies Concentration (B.S. - non ABET accredited)

Possible Arrangement of Courses:

Credits	Fall First-Year	Prerequisite	Credits	Spring First-Year	Prerequisite
4	MA 16500	ALEXS score of 75	4	MA 16600	MA 16500
4	CHM 11500	*MA 16500*	4	PHYS 17200	
4	ENGL 10600		3/4	CS 15900/CHM 11600	ENGR 13100/CHM 11500
2	ENGR 13100		2	ENGR 13200	ENGR 13100
			3	COM 11400	
14			16/17		

Credits	Fall Second-Year	Prerequisite	Credits	Spring Second-Year	Prerequisite
4	MA 26100	MA 16600	4	MA 26200	MA 26100
3	PHYS 24100/Sci. Selective††	PHYS 17200	2	Engineering Class 20000+ Level †2	
3	Engineering Class 20000+ Level Elective†2		3	Engineering Class 20000+ Level Elective†2	
3	Area Elective 1 †1		3	Area Elective 3 †1	
3	Area Elective 2 †1		3	Area Elective 4 †1	
16			15		

Credits	Fall Third-Year	Prerequisite	Credits	Spring Third-Year	Prerequisite
1	IDE 30100 Prof. Development	COM 114	3	IDE 36000 Statistics†4	
3	General Education Class 1 (Foundational outcome H)		3	Engineering Class 30000+ Level Elective †2	
3	Engineering Class 20000+ Level Elective†2		3	General Education 2 (Foundational outcome BSS)	
3	Area Elective 5 †1		3	General Education 3 (Foundational Outcome STS)	
3	Area Elective 6 †1		3	Area Elective 8 †1	
2	Area Elective 7 †1				
15			15		

Credits	Fall Fourth-Year	Prerequisite	Credits	Spring Fourth-Year	Prerequisite
3	Engineering Design 30000+ †5		3	Engineering Class 30000+ Level Elective †2	
3	IE 34300 Economics Selective †		3	Engineering Class 30000+ Level Elective †2	
3	General Education 4 †3 (300 level or non-intro)		3	General Education 6 †3 (300 level or non-intro)	
2	General Education 5 †3		3	Area Elective 10 †1	
3	Area Elective 9†1		3	MBSE Elective	
14			15	**Grand Total = 120**	

†Multiple options are available; common option listed. †1 Area electives are chosen with aid of adviser to advance the student's educational objectives. Area classes for this plan of study are used to complete the requirements to take the **MCATS and attend medical school**. Courses to be completed include but are not limited to: 2 semesters General Biology with labs (minimum – should take more); 2 semesters General Chemistry with labs; 2 semesters Organic Chemistry with labs; 2 semesters Physics with labs; 2 semesters English composition; 1 semester Biochemistry (no lab required; * IU MD and Marian DO programs will require as of fall 2015); Anatomy and Physiology (not required but highly recommended for MCAT); 1 semster General Psychology (* IU MD and Marian DO programs will require as of fall 2015); 1 semester sociology (* IU MD and Marian DO programs will require as of fall 2015); other recommended courses Statistics. Generally, a grade below a C is not acceptable for a prerequisite course. Source

†2 engineering electives are chosen with aid of adviser to advance the student's educational objectives. †3 General Education courses can be taken from CLA, Krannert, or Honors – consult advisor †4 statistics selective could be approved equivalent (IE 23000/33000/ECE 30200/CHE 32000/STAT 35000/ STAT 51100–(If non engineering *statistics selective chosen fulfills MBSE, but would require another 3 credit engineering course be taken*); †5 design selective – consult advisor for course selection. Engineering courses (30 credits of 200+ level engineering courses, of which at least 15 credits are 300+; MAX credits allowed in any one engineering discipline is 24).

120 Semester Credits Required for Bachelor of Science Degree (BS).
Graduation Index of 2.0 or higher and a min.GPA of 2.0 in engineering courses at 200+ level included in the POS.All other Purdue University graduation requirements including "There must be 32 credits of 300+ level for graduation" must be satisfied.

THE PLAN OF STUDY FROM THIRD SEMESTER ONWARDS SHOULD BE FILLED BY STUDENT IN CONSULTATION WITH ACADEMIC ADVISOR

Support Area Electives

The list of Support Area Electives below is divided into three categories: Communication, Mathematics and Basic Science, and Engineering Support. These courses are not directly related to Materials Engineering, but will help you improve you written or oral communication skills (e.g., Speech Writing and Analysis) or provide greater depth to topics touched on in MSE courses (e.g., Statistics). Up to 6 credit hours of your Technical Elective Program may be satisfied using Support Area Electives. The Support Area Electives list is also available in the Undergraduate section of the MSE website, or outside of Vicki's office

Communication:

AGEC 33100	Principles of Selling in Agricultural Business
COM 25200	Journalistic Writing
COM 31400	Advanced Public Speaking
COM 32500	Interviewing – Principle and Practice
COM 35800	Newspaper Reporting
COM 41400	Speech Writing and Analysis
COM 45300	Reporting of Science News
COM 45500	Advocacy Journalism
ENGL 30400	Advanced Composition
ENGL 39100	Composition for English Teachers
ENGL 40600	Review Writing
ENGL 40900	Introduction to Fiction Writing
ENGL 42000	Business Writing
ENGL 42100	Technical Writing
PSY 27200	Industrial Organizational Psychology
Foreign Language	#Any level 201 or higher

Engineering Support:

AAE 25100	Introduction to Aerospace Design
AAE 37200	Jet Propulsion Power Plants
AAE 53500	Propulsion Design, Build, Test
BME 55100	Tissue Engineering
CE 52400	Legal Aspects in Engineering Practice
EAS 37500	Fossil Fuels & Society (EAS will become EAPS – Fall 2013)
ECE 17000	EPICS for Freshmen – 3 hrs total
ECE 49500	Entrepreneurship
EPICS	EPICS – 2 semesters required (EPCS 201-202, 301-302, 401-2)
ECE 20100	Linear Circuit Analysis
ECE 20200	Linear Circuit Analysis II
ECE 20700	Electronic Measurement Techniques
EEE 300/CE 55900	Environmental & Ecological Systems
IE 33000	Probability & Statistics for Engineers II
IE 34300	Engineering Cost Analysis
ME 27400	Basic Mechanics II
ME 49200	Technology & Values

MGMT	(courses 3XX or greater are acceptable; however, may require MGMT 200 as a prerequisite)
MSE 49700	Ethics in Engineering Practice
MSE 49700	Manufacturing and Assembly
MSE 49700	Matls Engr System Analysis
NUCL 56300	Direct Energy Conversion
OBHR 30000	Mgmt of Human Resources (under MGMT)

Mathematics and Basic Sciences

BIOL 23000	The Biology of the Living Cell (old BIOL 295E) taught Fall only	
CHM 26200	Organic Chemistry	
CHM 26300	Organic Chemistry Lab	
CHM 26400	Organic Chemistry Lab	
CHM 37300	Physical Chemistry	
CHM 37400	Physical Chemistry	
EAS 24300	Earth Materials	(EAS will become EAPS Fall 2013)
EAS 37500	Fossil Fuels & Society (old EAS 391)	(EAS will become EAPS Fall 2013)
IPPH 56200	Intro to Pharmaceutical Manufacturing Process	
MA 30300	Diff. Eqs. and Partial Diff. Eqs. for Eng. and the Sciences	
MA 30400	Diff. Eqs. and Analysis of Nonlinear Systems for Eng. and the Sciences	
MA 36200	Topics in Vector Calculus	
MA 41000	Elements of Vector Calculus	
PHYS 33000	Intermediate Electricity & Magnetism	
PHYS 55000	Quantum Mechanics	
STAT 31100	Introductory Probability	
STAT 350 /51100	Statistical Methods (equivalent courses)	
STAT 51200	Applied Regression Analysis	
STAT 51300	Statistical Quality Control	
STAT 51400	Design of Experiment	
STAT 51600	Basic Probability and Applications	

Support Electives cannot be taken pass/no pass, or satisfied by exam or test out.

Other courses may be acceptable, subject to approval by petition to the Undergraduate Committee.

#200 level or higher. These courses appear on BOTH General Education and Support Elective Lists. However, they can be taken to fulfill only ONE requirement. THESE COURSES ARE EXCEPTIONS. OTHER GENERAL EDUCATION COURSES ARE NOT PERMITTED AS SUPPORT ELECTIVES.

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Spring 2016 IDES/MDE POS update

Engineering Education
College of Engineering

Multidisciplinary Engineering Major: *General Engineering Concentration*

Course Lists & Notes

Where several columns are provided with courses for each table, each column represents one possible choice that would meet the specific requirement. (I.e. the student will *choose one column for each bulleted title as a choice to meet that requirement*)

Engineering Core

- Circuits

ECE20100				

- Statics/Dynamics

ME27000 + ME27400	CE29700 + CE29800	AAE20300		

- Fluid Mechanics

ME30900	CE34000	AAE33300	CHE37700	

- Thermodynamics

ME20000	ABE21000	CHE21100	MSE26000	

- Engineering Economics

IE34300	IDE48300			

- Engineering Economics

IE34300	IDE48300			

- Engineering Capstone Design

IDE485+IDE484	EPCS41100+EPCS41200			

Engineering Selectives – by category course lists/tables

- Engineering Design Selective: Others approved on a case by case basis

ABE33000	AAE25100	CE45600	IE38600	ME41300	ECE27000	EPCS@30000:40000

- Engineering Hands on lab: Others approved on a case by case basis

AAE20401	AAE33301	ECE20700	CE34300	ME30900 (1)

- Engineering Materials/Strength of Materials: Others approved on a case by case basis

MSE23000	NUCL27300	CE23100		

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Engineering Area Selective/Electives

- Engineering Selective Beginning Course

Any @20000:50000 level course

- Engineering Selective Follow up Course

Any @20000:50000 level course, with pre-requisite of "Beginning course", or Engineering core example. ECE201 followed by ECE 270

- Engineering Selective Advanced Course

Any @30000:50000 level course

- Engineering Elective Courses

Any @20000:50000 level engineering course (AAE, ABE, BME, CE, CEM, CHE, ECE, EEE, ENE, ENGR, EPCS, IDE IE, ME, MSE, NUCL) *NOTE: only courses not already listed in the required engineering core

Other course lists

- Sophomore Science Selective

PHYS 24100	PHYS 27200	BIOL 11000	BIOL 23000	

- Statistics Selective

IDE495000 (now called IDE36000)	IE23000	IE33000	ECE 30200	CHE 32000	STAT 35000	STAT 51100

NOTE: if non engineering *statistics selective it chosen, it counts as MBSE; if engineering course is selected it count as an engineering course*)

- Hands on lab (non computer):

CHM 11600	THTR26300	AD10500		

- Area Courses

CGT11000	CGT16300	CGT16400	Any @10000:50000 level course NOT counted in FYE POS, any prefix.	