

MDE Concentration Guideline — *General Engineering*

Semester 1			Semester 2		
CHM 11500	GENERAL CHEMISTRY	4	GEN ED	GEN ED (Found Outcome OC) ²	3
ENGR 13100	TRANS IDEAS TO INNOV II	2	ENGR 13200	TRANS IDEAS TO INNOV II	2
GEN ED	GEN ED (Found Outcome WC) ¹	3	MA 16600	PL ANLY GEO CALC II	4
MA 16500	PL ANLY GEO CALC I	4	PHYS 17200	MODERN MECHANICS	4
			SCI SEL	FYE SCIENCE SELECTIVE	3
	Total	13		Total	16
Semester 3			Semester 4		
MFET 16300	GRAPH COM & SPAT ANLY ³	2	AREA	AREA ELECTIVE ⁷	3
IDE 30100	PROF PREP IN IDE SEMINAR	1	ECE 20001	ELEC ENGR FUND I	3
MA 26100	MULTIVARIATE CALCULUS	4	ECE 20007	ELEC ENGR FUND I LAB ⁸	1
ME 20000	THERMODYNAMICS ⁴	3	MA 26200	LIN ALG AND DIF EQU ⁹	4
ME 27000	BASIC MECHANICS I ⁵	3	ME 27400	BASIC MECHANICS II ¹⁰	3
PHYS 24100	ELECTRICITY & OPTICS ⁶	3			
	Total	16		Total	14
Semester 5			Semester 6		
AREA	AREA ELECTIVE ⁷	3	ENGR SELECTIVE	ENGR SELECTIVE (follow-up) ¹⁵	3
CE 34000	HYDRAULICS ¹¹	1	ENGR SELECTIVE	ENGR SELECTIVE (design) ¹⁶	3
CE 34300	HYDRAULICS LAB ⁸	3	GEN ED	GEN ED (Found Outcome BSS) ¹⁷	3
ENGR SELECTIVE	ENGR SELECTIVE (beginning) ¹²	3	GEN ED	GEN ED (300 level or non intro) ¹⁸	3
GEN ED	GEN ED (Found Outcome H) ¹³	3	IDE 36000	MDE STATISTICS ¹⁹	3
NUCL 27300	MECHANICS OF MATERIALS ¹⁴	3			
	Total	16		Total	15
Semester 7			Semester 8		
AREA	AREA ELECTIVE ⁷	3	AREA	AREA ELECTIVE ⁷	3
ENGR SELECTIVE	ENGR SELECTIVE (advanced) ²⁰	3	AREA	AREA ELECTIVE ⁷	3
GEN ED	GEN ED (Found Outcome STS) ²¹	3	ENGR ELECTIVE	ENGINEERING ELECTIVE ²³	3
GEN ED	GEN ED ¹⁸	3	GEN ED	GEN ED (300 level or non intro) ¹⁸	3
IDE 48300	MDE ENGR ANALYSIS/DECISION ²²	1	IDE 48500	MDE ENGR DESIGN PROJ ²⁴	3
IDE 48400	MDE DESIGN METHODOLOGY	1			
IDE 48700	MDE SENIOR DEVELOPMENT	1			
	Total	15		Total	15

¹Written Communication University foundational outcome. Courses can be found at:
<http://www.purdue.edu/provost/students/s-initiatives/curriculum/courses.html>

²Oral Communication University foundational outcome. Courses can be found at:
<http://www.purdue.edu/provost/students/s-initiatives/curriculum/courses.html>

³other options include CM 16400; THTR 25400, 55400.

⁴other options include ABE 20100, 21000, CE 21101, CHE 21100, MSE 26000

⁵other options include CE 29700, AAE 20300

⁶sophomore science selective. Other options include PHYS 27200 or BIOL 11000, 20300, 22100, 23000, 23100 or CHM 11600, 25500, 25700, 26100, 32100 or EAPS 10400, 10500, 10900, 11100, 11200, 11300, 11600, 11700, 12000, 13800, 17100 (May not be the same course used as FYE Science Selective.)

⁷Area classes are chosen based on a student's educational objectives. These may be chosen to complete minors. Consult with academic advisor.

⁸hands on (not computer) engineering lab; other options include 1 credit engineering lab class (AAE 20401, AAE 33301, CE 34300, ME 30801 etc.); 1 credit from a 2 credit engineering lab class (BME 30600, NUCL 20500, etc.); 1 credit from a 3 credit engineering class that includes a lab (ABE 30500, IE 38600, MSE 23500, etc.); 1 credit from a 4 credit engineering class that includes a lab (CE 20300, CHE 37700, ECE 27000 etc.). Consult academic advisor for list of engineering lab courses.

⁹other option MA 26500 + MA 26600

¹⁰other option CE 29800

¹¹other options include AAE 33300, ME 30800, CHE 37700, MSE 34000

¹²beginning engineering courses are courses that do not have any engineering courses as pre-requisites and are not MDE "core" engineering courses. Examples are: BME 20100, CE 20300, CE 22200, CEM 20100, CHE 20500, ECE 26400, EEE 25000, IE 23000 (cannot be used as statistics course in MDE core), ME 26300 (ME CODO's only and cannot be used as design selective), MSE 23000 (cannot be used as materials course in core), and NUCL 20000, etc. A beginning engineering course can also be the first course in a pair of courses taken in sequence. The first course in the sequence ("beginning" engineering course) is a pre-requisite for the second course in the sequence. ("follow-up" engineering course). Some examples of pairs of course taken in sequence are CHE 37700(beginning) + CHE 37800(follow-up); ECE 20002(beginning) + ECE 32100(follow-up); IE 37000 (beginning) + IE 47000 (follow-up); IE 386000 (beginning) + IE 48600 (follow-up); ME 36500 (beginning) + ME 37500 (follow-up), MSE 23500(beginning) + MSE 33500(follow-up) etc.; Consult MDE academic advisor for questions about beginning engineering options.

MDE core engineering courses: ECE 20001, ME 20000(see footnote 4), ME 27000(see footnote 5), ME 274000(see footnote 10), NUCL 27300(see footnote 14), CE 34000(see footnote 11), IDE 36000(see footnote 19), IDE 48300(see footnote 22), IDE 48400, IDE 48500

True Beginning courses (no engineering pre-requisites): AAE 25100(cannot also be used as engineering design course), ABE 20500; BME 20100, CE 20300, CE 22200, CEM 20100, CHE 20500, ECE 20850, EEE 25000, IE 23000, ME 26300, MSE 23000, NUCL 20000

Courses that can be taken in sequence: CHE 37700 + CHE 37800; IE 37000 + IE 47000; IE 38600 + IE 48600; ECE 20200 + ECE 32100; ME 36500 + ME 37500; MSE 23500 + MSE 33500

¹³Humanities University foundational outcome. Courses can be found at:

<http://www.purdue.edu/provost/students/s-initiatives/curriculum/courses.html>

¹⁴other “materials course” options include AAE 20400, ABE 30500, CHE 33000, ME 32300 (CODO from ME only), MSE 23000

¹⁵follow-up engineering options are courses that have an MDE core course, or a beginning(#12above) course, or another engineering course as a pre-requisite. Examples are: ABE 43500, AAE 33400, BME 20400, BME 30400 (BME courses may be available to CODO only), CE 27000, CHE 37800, ECE 20002, ECE 32100 IE 33000, IE 47000, IE 48600, ME 30000, or other follow-up courses approved by Engineering Education. The following courses can be used for “follow-up”, but cannot be double-counted as a selective requirement for a materials or strength of materials course: ABE 30500, AAE 20400, NUCL 27300. Consult MDE academic advisor for questions about follow-up engineering options.

Follow-up courses from core courses

ABE 43500 (*pre-req CE 34000*)

AAE 20400 (*pre-req AAE 20300*) – AAE 20400 cannot also be used as materials course

AAE 33400 (*pre-reqs ME 2000 + AAE 33300 + AE 33301*)

BME 20400(*pre-req ME 27000*)

BME 30400(*pre-req ME 20000*)

CE 27000 (*pre-req CE 29700*)

ECE 20002(*pre-req ECE 20001*)

IE 33000(*pre-req IE 23000*)

IE 37000(*pre-req NUCL 27300*)

IE 38600(*pre-req Statistics*)

ME 30000(*pre-req ME 20000*)

ME 36500(*pre-req ECE 20001 + ME 27400*)

MSE 27000(*pre-req MSE 23000*)

NUCL 27300(*pre-req ME 27000*) – NUCL 273 cannot also be used as materials course

Courses that can be taken in sequence(the “follow-up” course is **BOLD**): CHE 37700 + **CHE 37800**; IE 37000 + **IE 47000**; IE 38600 + **IE 48600**; ECE 20200 + **ECE 32100**; ME 36500 + **ME 37500**; MSE 23500 + **MSE 33500**

¹⁶option must be approved, consult with academic advisor. Some examples are: ABE 33000, ABE 43500, AAE 25100, CE 31100, CE 45600, CE 47000, ECE 27000, EPCS 30000+ level, IDE 38500, IE 38600, ME 26300(CODO from ME only), ME 35400, ME 41300, ME 44400

¹⁷Behavioral/Social Sciences University foundational outcome. Courses can be found at:
<http://www.purdue.edu/provost/students/s-initiatives/curriculum/courses.html>

¹⁸General education courses can be taken from the College of Liberal Arts, the Krannert School of Management, the Honors College, etc. provided such courses are not focused primarily on engineering, technology, the natural sciences, or mathematics. Consult with academic advisor for acceptable general education courses.

¹⁹other options include IE 23000, IE 33000

²⁰advanced engineering options include an additional advanced (300 + level) course such as: ABE 30100, ABE 30500, ABE 32000, ABE 32500, ABE 45000, CE 30300, CE 32100, CE 35000, CE 35500, CE 37100, CE 40300, CHE 30600, ECE 30100, ECE 31100, IE 33200, IE 33600, IE 57700, MSE 37000, NUCL 30000, or other advanced course approved by Engineering Education.

²¹Science Technology and Society University foundational outcome. Courses can be found at:
<http://www.purdue.edu/provost/students/s-initiatives/curriculum/courses.html> If EPCS is used to satisfy this outcome, 3 credits of EPCS must be taken.

²²other option IE 34300

²³Engineering electives are chosen based on a student's educational objectives. Consult with academic advisor.

²⁴other capstone design option instead of IDE 48400 + IDE 48500 is EPCS 41200 + EPCS 41200. Consult with academic advisor.

Additional Requirements:

A course listed on the Concentration Guideline *is not a guarantee that the course will be accessible/made available to a student*. Lack of availability could be due to any number of circumstances beyond the control of either student or program.

Engineering credits: A minimum 45 credits at 200+ level, of which at least 18 credits are at 300+ level and 6 credits of the 18 must be at 400+ level. Maximum number of credits in any engineering discipline is 24. It is the student's responsibility to see that all prerequisites are met for selected courses.

30 credits must be Math and Basic Science (MA, BIOL, CHM, PHYS, EAPS, SLHS are some examples)

32 credits at 300+ level (any courses) must be taken at Purdue West Lafayette.

3 credits of "hands-on" (not computer lab) required. 2 credits must be engineering (See footnote 6). The third credit may be engineering on non-engineering. A non-engineering lab credit would be included in an AREA class. Some examples are BIOL, CHM, or PHYS lab classes **or** THTR and AD classes that include a studio component. Consult academic advisor for detail

Updated: 08/14/2023