School of Engineering Education
→ PURDUE UNIVERSITY
→ LEARNING to Make a DIFFERENCE

MDE Concentration Guideline – *Educational Engineering*

This concentration does not lead to a public school teaching license

Semester 1			**Semester 2**		
CHM 11500	GENERAL CHEMISTTRY	4	ENGR 13200	TRANS IDEAS TO INNOV II	2
ENGR 13100	TRANS IDEAS TO INNOV I	2	GEN ED	GEN ED (Found Outcome OC)[2]	3
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]	3
	Total	13		Total	16
Semester 3			**Semester 4**		
MFET 16300	GRAPH COM & SPAT ANLY[4]	2	AREA	EDUCATION SELECTIVE[8]	3
IDE 30100	PROF PREP IN IDE SEMINAR	1	ECE 20001	ELEC ENGR FUND I I	3
MA 26100	MULTIVARIATE CALCULUS	4	ECE 20007	ELEC ENGR FUND I LAB[9]	1
ME 20000	THERMODYNAMICS[5]	3	MA 26200	LIN ALG AND DIF EQU[10]	4
ME 27000	BASIC MECHANICS I[6]	3	ME 27400	BASIC MECHANICS II[11]	3
PHYS 27200	E & M INTERACTIONS[7]	4			
	Total	17		Total	14
Semester 5			**Semester 6**		
AREA	EDUCATION SELECTIVE[8]	3	AREA	AREA ELECTIVE[17]	3
CE 34000	HYDRAULICS[12]	3	EDPS 23500	LEARN & MOTIVATION (Found Outcome BSS)[18]	3
CE 34300	HYDRAULICS LAB[9]	1	ENGR ELECTIVE	ENGINEERING ELECTIVE[19]	3
GEN ED	GEN ED (Found Outcome H)[13]	3	EPCS 30200	JR PART IN EPICS (Found Outcome STS&Design Sel)[14,15]	2
EPCS 30100	JR PART IN EPICS (Found Outcome STS&Design Sel)[14,15]	1	GEN ED	GEN ED (300 level or non intro)[20]	3
NUCL 27300	MECHANICS OF MATERIALS[16]	3	IDE 36000	MDE STATISTICS[21]	3
	Total	14		Total	17
Semester 7			**Semester 8**		
ENGR SELECTIVE	ENE ENGINEERING SELECTIVE[22]	3	AREA	ED METHODS SELECTIVE[26]	3
ENGR ELECTIVE	INDEPENDENT STUDY[23]	3	AREA	EDUCATION SELECTIVE[8]	3
EPCS 41200	SR DESIGN PART EPICS[24]	2	ENGR ELECTIVE	ENGINEERING ELECTIVE[19]	3
GEN ED	GEN ED[20]	3	EPCS 41200	SR DESIGN PART EPICS[24]	2
GEN ED	GEN ED[20]	3	GEN ED	GEN ED (300 level or non intro)[20]	3
IDE 48300	MDE ENGR ANALYSIS/DECISION[25]	1			
IDE 48700	MDE SENIOR DEVELOPMENT	1			
	Total	16		Total	14

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

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

[3]CS 15900 is highly recommended as the FYE Science Selective for this concentration

[4]other options include CM 16400; THTR 25400, 55400.

[5]other options include ABE 20100, ABE 21000, CE 21101, CHE 21100, MSE 26000

[6]other options include CE 29700, AAE 20300

[7]sophomore science selective. Other options include PHYS 24100 + PHYS 25200 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.)

[8]Options include EDPS 10500, 26500, 31500, 31600, EDCI 20500, 27000, 28500, EDST 24800, HDFS 21000

[9]hands 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.

[10]other option MA 26500 + MA 26600

[11]other option CE 29800

[12]other options include AAE 33300, ME 30800, CHE 37700, MSE 34000

[13]Humanities University foundational outcome. Courses can be found at: http://www.purdue.edu/provost/students/s-initiatives/curriculum/courses.html

[14]Science 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, and an additional general education elective is required.

[15]EPCS 30000+ level is highly recommended as the design selective for this concentration. Consult academic advisor for other options.

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

[17]Area classes are chosen based on a student’s educational objectives. These may be chosen to complete minors. Consult with academic advisor.

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

[19]Engineering electives are chosen based on a student's educational objectives. Consider sustainability and environmental engineering courses. Consult with academic advisor.

[20]General education courses can be taken from the College of Liberal Arts, the Krannert School of Management, and/or 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.

[21]other options include IE 23000, IE 33000

[22]options include: IDE 385 "Design Methods for Diverse Stakeholders"; ENE 498* Undergraduate Research in Engineering Education, ENE 502† History & Philosophy Engineering Education, ENE 590* Special Problems in Engineering Education

*student must seek an interested faculty advisor to work with to take these courses. † Instructor permission required.

[23]Can substitute from the ENE selective list (see footnote 22)

[24]EPCS 41200 + 41200 is strongly recommended as the senior capstone design for this concentration. The other option is IDE 48400 + IDE 48500

[25]other option IE 34300

[26]options include EDCI 42100, 42400, 42500, 42600, and 42800

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 or university.

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 7). 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 details.

Updated 08/14/2023