ENGINEERING PATHWAY - MECHANICAL ENGINEERING CONCENTRATION

MTH 263 START (2 YEARS TO COMPLETION)

FIRST YEAR

FIRST SEMESTER (FALL I)

Course #	Course Description	Credits
ENG 111	College Composition I	3
HIS ____	History (101, 102, 111, 112, 121, or 122)	3
MTH 263	Calculus I	4
CHM 111	General Chemistry I	4
EGR 120	Introduction to Engineering	2
SDV	Student Development *(SDV 101 "for STEM" strongly recommended, but SDV 100 may be used)*	1
	Total credits	**17**

SECOND SEMESTER (SPRING I)

Course #	Course Description	Credits
ENG 112	College Composition II	3
EGR 140	Engineering Mechanics - Statics	3
MTH 264	Calculus II	4
EGR 115	Engineering Graphics	3
_____	Social Science Elective	3
	Total credits	**16**

SECOND YEAR

THIRD SEMESTER (FALL II)

Course #	Course Description	Credits
ENG ____	Literature Elective	3
PHY 241	University Physics I	4
EGR 246(1)	Mechanics of Materials	3
MTH 265	Calculus III	4
EGR 126	Computer Programming for Engineers	3
	Total credits	**17**

FOURTH SEMESTER (SPRING II)

Course #	Course Description	Credits
MTH 245(2)	Statistics I	3
MTH 266 or MTH 267(2)	Linear Algebra Differential Equations	3 3
PHY 242	University Physics II	4
_____	Humanities/Fine Arts Elective	3
MTH 288	Discrete Mathematics	3
EGR 247(1)	Mechanics of Materials Laboratory	1
	Total credits	**17**

ADVISING NOTES

Remaining requirements to be completed at EMU:

Course #	Course Description	Credits
ENGR 156	Mathematics for Engineering Lab	2
*ENGR 265	Analog Circuits	4
*ENGR 245	Experimental Methods	2
ENGR 291	Engineering Design II	2
ENGR 325	Engineering Ethics	2
ENGR 390	Engineering Design III	2
ENGR 490	Senior Design	2
ENGR 491	Capstone Project	2
*MATH 310	Differential Equations *(if not taken yet)*	3
One of the following three		
MATH 154	Mathematics for Engineering	2
*MATH 350	Linear Algebra *(if not taken yet)*	3
MATH 334 *(with adviser approval)*	Topics in Mathematics	2-4

Mechanical Engineering Emphasis

MATH 170	Discrete Math	4
CS 165	Networking in the Internet Age	2
CS 175	Architecture and Operating Systems	4
And 3+ of the following		
CS 335	Topics in Computing *(with advisor approval)*	2-4
*CS 345	Data Structures	2
*CS 355	Advanced Data Structures	2
*CS 375	Software Engineering	2
ENGR 333	Topics in Engineering *(with advisor approval)*	2-4
*ENGR 360	Digital Circuits	3
ENGR 380	Systems	4
*ENGR 480	Control Systems	3

**every other year courses*

ENGINEERING PATHWAY - MECHANICAL ENGINEERING CONCENTRATION

MTH 167 START (2 YEARS TO COMPLETION)

FIRST YEAR

FIRST SEMESTER (FALL I)

Course #	Course Description	Credits
ENG 111	College Composition I	3
HIS ____	History (101, 102, 111, 112, 121, or 122)	3
MTH 167	Precalculus with Trigonometry	5
CHM 111	General Chemistry I	4
EGR 120	Introduction to Engineering	2
SDV	Student Development *(SDV 101 "for STEM" strongly recommended, but SDV 100 may be used)*	1
	Total credits	**18**

SECOND SEMESTER (SPRING I)

Course #	Course Description	Credits
ENG 112	College Composition II	3
EGR 140	Engineering Mechanics - Statics	3
MTH 263	Calculus I	4
EGR 115	Engineering Graphics	3
_____	Social Science Elective	3
	Total credits	**16**

SECOND YEAR

THIRD SEMESTER (FALL II)

Course #	Course Description	Credits
ENG ____	Literature Elective	3
PHY 241	University Physics I	4
EGR 246(1)	Mechanics of Materials	3
MTH 265	Calculus III	4
EGR 126	Computer Programming for Engineers	3
	Total credits	**17**

FOURTH SEMESTER (SPRING II)

Course #	Course Description	Credits
MTH 245(2)	Statistics I	3
MTH 266 or MTH 267(2)	Linear Algebra Differential Equations	3 3
PHY 242	University Physics II	4
_____	Humanities/Fine Arts Elective	3
EGR 245	Engineering Mechanics – Dynamics	3
EGR 247(1)	Mechanics of Materials Laboratory	1
	Total credits	**17**

ADVISING NOTES

Remaining requirements to be completed at EMU:

Course #	Course Description	Credits
ENGR 156	Mathematics for Engineering Lab	2
*ENGR 265	Analog Circuits	4
*ENGR 245	Experimental Methods	2
ENGR 291	Engineering Design II	2
ENGR 325	Engineering Ethics	2
ENGR 390	Engineering Design III	2
ENGR 490	Senior Design	2
ENGR 491	Capstone Project	2
*MATH 310	Differential Equations *(if not taken yet)*	3
One of the following three		
MATH 154	Mathematics for Engineering	2
*MATH 350	Linear Algebra *(if not taken yet)*	3
MATH 334 *(with adviser approval)*	Topics in Mathematics	2-4

Mechanical Engineering Emphasis

*ENGR 350 *PHYS 405	Fluid Mechanics OR Thermodynamics	4 3
ENGR 380	Systems	4
And 1+ of the following:		
ENGR 333	Topics in Engineering *(with advisor approval)*	2-4
*ENGR 350 *PHYS 405	Fluid Mechanics OR Thermodynamics	4 3
*ENGR 360	Digital Circuits	3
*ENGR 480	Control Systems	3

ENGINEERING PATHWAY - MECHANICAL ENGINEERING CONCENTRATION

MTH 161 START (3 YEARS TO COMPLETION)

Note that starting in MTH 161 will require three years to complete the math/physics sequence, and there is no way to do this at a full time load for all six semesters. Plan accordingly.

FIRST YEAR

FIRST SEMESTER (FALL I)

Course #	Course Description	Credits
ENG 111	College Composition I	3
HIS ____	History (101, 102, 111, 112, 121, or 122)	3
MTH 161	Precalculus I	3
EGR 120	Introduction to Engineering	2
SDV	Student Development *(SDV 101 "for STEM" strongly recommended, but SDV 100 may be used)*	1
	Total credits	**12**

SECOND SEMESTER (SPRING I)

Course #	Course Description	Credits
ENG 112	College Composition II	3
MTH 162	Precalculus II	3
EGR 115	Engineering Graphics	3
_____	Social Science Elective	3
	Total credits	**12**

SECOND YEAR

THIRD SEMESTER (FALL II)

Course #	Course Description	Credits
MTH 263	Calculus I	4
CHM 111	General Chemistry I	4
EGR 126	Computer Programming for Engineers	3
	Total credits	**11**

FOURTH SEMESTER (SPRING II)

Course #	Course Description	Credits
EGR 140	Engineering Mechanics - Statics	3
MTH 264	Calculus II	4
ENG ____	Literature Elective	3
_____	Humanities/Fine Arts Elective	3
	Total credits	**13**

ADVISING NOTES

Remaining requirements to be completed at EMU:

Course #	Course Description	Credits
ENGR 156	Mathematics for Engineering Lab	2
*ENGR 265	Analog Circuits	4
*ENGR 245	Experimental Methods	2
ENGR 291	Engineering Design II	2
ENGR 325	Engineering Ethics	2
ENGR 390	Engineering Design III	2
ENGR 490	Senior Design	2
ENGR 491	Capstone Project	2
*MATH 310	Differential Equations *(if not taken yet)*	3
One of the following three		
MATH 154	Mathematics for Engineering	2
*MATH 350	Linear Algebra *(if not taken yet)*	3
MATH 334	Topics in Mathematics *(with advisor approval)*	2-4

Mechanical Engineering Emphasis

*ENGR 350	Fluid Mechanics OR	4
*ENGR 340	Engineering Thermodynamics	3
ENGR 380	Systems	4
And 1+ of the following:		
ENGR 333	Topics in Engineering *(with advisor approval)*	2-4
*ENGR 350	Fluid Mechanics OR	4
*ENGR 340	Engineering Thermodynamics	3
*ENGR 360	Digital Circuits	3
*ENGR 480	Control Systems	3

ENGINEERING PATHWAY - MECHANICAL ENGINEERING CONCENTRATION

MTH 161 START (3 YEARS TO COMPLETION)

Note that starting in MTH 161 will require three years to complete the math/physics sequence, and there is no way to do this at a full time load for all six semesters. Plan accordingly.

THIRD YEAR

FIFTH SEMESTER (FALL III)

Course #	Course Description	Credits
PHY 241	University Physics I	4
EGR 246(1)	Mechanics of Materials	3
MTH 265	Calculus III	4
	Total credits	**11**

SIXTH SEMESTER (SPRING III)

Course #	Course Description	Credits
MTH 245(2)	Statistics I	3
MTH 266 or MTH 267(2)	Linear Algebra or Differential Equations	3
PHY 242	University Physics II	4
EGR 245	Engineering Mechanics - Dynamics	3
EGR 247(1)	Mechanics of Materials Laboratory	1
	Total credits	**14**