

Student's Name _____
 UMID: _____
 Expected Graduation Date _____

Current/Revised Date(s) _____
 Cum G.P.A. _____ Cum Credits _____
 First Term at UM-Flint _____
 Advisor: _____

EGR Prerequisite Courses (15 credits)	Term	Grade
EGR 102 Intro to Engineering (t) (3)		
EGR 165 Computer-Aided Design (t) (3)		
EGR 230 Statics (3)		
EGR 260 Mechanics of Solids (3)		
EGR 280 Engineering Materials (3)		

EGR Core Courses (30 credits)	<i>"C" or better in at least six.</i>	
	Term	Grade
EGR 310 Engineering Economics (fq) (3)		
EGR 315 Machine Element Design (3)		
EGR 330 Egr Circuit Analysis (3)		
EGR 350 Fluid Mechanics (3)		
EGR 353 Thermodynamics (3)		
EGR 356 Heat Transfer (3)		
EGR 370 Dynamics (3)		
EGR 432 Manufacturing Process (3)		
EGR 465 Egr Design I (3)		
EGR 466 Egr Design II (Capstone) (3)		

EGR Elective Courses - 300+ level EGR courses (not already listed as program prereq, core or lab course); possibilities listed below. (21 credits)	Term	Grade
EGR 300 Renewable Energy (4)		
EGR 312 Kinematics & Mechanism (3)		
EGR 314 Egr Ethics & Communication (3)		
EGR 321 Analog & Digital Electronics(3)		
EGR 345 Finite Element Analysis (3)		
EGR 354 Optics (3)		
EGR 367 Elect & Magnetism (3)		
EGR 368 Elect Mach & Power Trans (3)		
EGR 369 Embedded Systems (3)		
EGR 380 System Dyn & Control (3)		
EGR 381 Composite Materials Design (3)		
EGR 392 Special Topics in Egr (1-4)		
EGR 399 Robotics/Mechatronics (3)		
EGR 410 Vibrations (3)		
EGR 451 Comp Fluid Dynamics (3)		
EGR 492 Advanced Topics (1-4)		
AUE 300: Fund of Automotive Engg. (3)		
AUE 400: Automotive Drive Systems (3)		
AUE 401: Automotive Body Structures (3)		
AUE 402: Vehicle Dynamics & Control (3)		

MTH - PHY - CHM - ENG - CSC (37 credits)	Term	Grade
MTH 121 Calc I (fq) (4)		
MTH 122 Calc II (4)		
MTH 222 Multivariate Calc (4)		
MTH 303 Diff Equations (4)		
PHY 243 Prin Phys I (n/nl) (5)		
PHY 245 Prin Phys II (n/nl) (5)		
CHM 260 Prin Chem I (3)		
CHM 261 Gen Chem Lab (1)		
ENG 112 or EHS 120 (Eng. Comp) (3)		
CSC/CIS 175 Programming C++ (t) (4)		

EGR Labs from: (3+ credits)	Term	Grade
EGR 281 Egr Materials Lab (1)		
EGR 355 Thermofluids Egr Lab (1)		
EGR 322 Analog/Digital Elec Lab (1)		
EGR 335 Egr Circuit Analysis Lab (1)		
EGR 397 Robotics/Mechatronics Lab (1)		
EGR 433 Adv Physics Lab II (1-3)		

General Education (for CAS B.S.)	Term	Grade
FYE - UNV 100 (3)		
English Comp: ENG 112 (or EHS 120, HON 156) (3)	ENG 112	
Humanities (h) <i>PHL 162 Ethics recom.</i> (3)		
Humanities (h) (3)		
Soc Sci (s) <i>EGR/SOC 203 Technology & Society recommended</i> (3)		
Soc Sci (s) (3)		
Global Studies (gs) <i>EGR/POL 235 Global Energy recommended</i> (3)		
Fine Arts (f) (3)		
Health & Well Being (hw) <i>PHS 421 Occupational Health and Safety recom.</i> (3)		
Finance & Quantitative Literacy (fq) (3)	EGR 310/MTH121	
Nat Sci w/lab (n/nl) (4)	PHY 243/245	
Technology (t) (3)	EGR 102/165	
Capstone (3)	EGR 466	

9.10.14

B.S.E. in Mechanical Engineering – 2014-2015 Catalog

Prerequisites. (52 credits).

- A. ENG 112 (3 credits).
- B. MTH 121, 122, 222, 303 (16 credits).
- C. CSC/CIS 175 (4 credits).
- D. CHM 260, 261 (4 credits).
- E. PHY 243, 245 (10 credits).
- F. EGR 102, 165, 230, 260, 280 (15 credits).

Requirements. (48 credits).

- A. Core courses: EGR 310, 315, 330, 350, 353, 356, 370, 432, 465, 466 (30 credits).
- B. Laboratory courses: 3-4 credits selected from EGR 281, 322, 355 and select from 335, 397, 433, (2-3 credits).
- C. Elective courses: AUE or EGR courses at the 300 level or above not already listed as a program prerequisite, core, or laboratory course (21 credits).
- D. A grade of C (2.0) or better in at least seven of the ten core courses.
- E. A cumulative grade point average of 2.5 or better.
- F. Fundamentals of Engineering (FE) license examination (*typically taken during final term before graduation*).
- G. Completion of at least 129 credits and all requirements of the College of Arts and Sciences B.S.E. degree, including general education requirements.

Prerequisites for the EGR Prerequisite and Core Courses

(Note: Grade of "C" or better required in most)

EGR Prerequisite Courses	EGR	MTH	PHY
EGR 102 Intro to Engineering		MTH 111	PHY 143
EGR 165 Computer-Aided Design			
EGR 230 Statics	EGR 102	MTH 121	PHY 243
EGR 260 Mechanics of Solids	EGR 102, EGR 230	MTH 122 (or concurrent)	
EGR 280 Engineering Materials	EGR 102 (or concurrent)		PHY 243
EGR Core Courses	EGR	MTH	PHY
EGR 310 Engineering Economics	Jr. standing	MTH 120	
EGR 315 Machine Element Design	EGR 260, 280		
EGR 330 Egr Circuit Analysis		MTH 122 (MTH 222 rec)	PHY 245
EGR 350 Fluid Mechanics	EGR 230		
EGR 353 Thermodynamics		MTH 122	PHY 243
EGR 356 Heat Transfer	EGR 230, 353		
EGR 370 Dynamics	EGR 230		
EGR 432 Manufacturing Process	EGR 260,280; Jr standing		
EGR 465 Egr Design I	EGR 165, 310, 315, 350		
EGR 466 Egr Design II (Capstone)	EGR 330, 432, 465		

As most EGR courses are offered once per year, it is strongly recommended that students make an advising appointment with Engineering faculty before registration.

Q. Mazumder, Ph.D, Associate Professor & Program Director - qmazumde@umflint.edu
 O. Aluko, Ph.D., Assoc. Professor - aluko@umflint.edu; M. Burzo, Ph.D., Ass. Professor - mburzo@umflint.edu
 U. Dakeev, Ph.D., Lecturer - dakeev@umflint.edu; M. Li, Ph.D., Ass. Professor – drmingli@umflint.edu
 Y.C. Liu, Ph.D., Ass. Professor - franliu@umflint.edu; Pat Slackta, Admin. Assistant – pslackta@umflint.edu
 Susie Visser, Secretary – vissers@umflint.edu
 Department of Computer Science, Engineering, and Physics (CSEP)
 207 MSB - 810/762-3131 - www.umflint.edu/csep/