

**University of Michigan-Flint**  
**B.S.E. in MECHANICAL ENGINEERING, 2012-2013 Catalog**

Student's Name \_\_\_\_\_  
 UMID: \_\_\_\_\_  
 Expected Graduation Date \_\_\_\_\_

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

<b>EGR Prerequisite Courses</b> (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)		

<b>EGR Core Courses</b> (27 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 370 Dynamics (3)		
EGR 432 Manufacturing Process (3)		
EGR 465 Egr Design I (3)		
EGR 466 Egr Design II (Capstone) (3)		

<b>EGR Elective Courses - 300+ level</b> EGR courses (not already listed as program prereq, core or lab course); <b>possibilities</b> listed below. (21 credits)	Term	Grade
EGR 300 Renewable Energy (4)		
EGR 312 Kinematics & Mechanism (3)		
EGR 321 Analog & Digital Electronics(3)		
EGR 354 Optics (3)		
EGR 356 Heat Transfer (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)		

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

<b>MTH - PHY - CHM - ENG - CSC</b> (39 credits)	Term	Grade
MTH 121 Calc I (fq) (4)		
MTH 122 Calc II (4)		
MTH 220 Elem Linear Algebra (3)		
MTH 222 Multivariate Calc (4)		
MTH 305 Diff Equations (3)		
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)		

<b>Other Program Requirements</b>
Minimum cumulative GPA of 2.5
Fundamentals of Engineering Exam (1st part of Professional Engineering licensure)
Completion of at least 129 credits including all CAS and General Education requirements.

<b>General Education (for CAS B.S.)</b>	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 &amp; 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	

2.27.12

## B.S.E. in Mechanical Engineering - 2012-2013

### Prerequisites. (54 credits).

- A. ENG 112 (3 credits).
- B. MTH 121, 122, 220, 222, 305 (18 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, 370, 432, 465, 466 (27 credits).
- B. Laboratory courses: 3-4 credits selected from EGR 281, 322, 335, 355, 397, or 433 (3-4 credits).
- C. Elective courses: 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 six of the nine 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.

<b>Prerequisites for the EGR Prerequisite and Core Courses</b> (Note: Grade of "C" or better required in most)			
	<b>EGR</b>	<b>MTH</b>	<b>PHY</b>
<b>EGR Prerequisite Courses</b>			
EGR 102 Intro to Engineering			
EGR 165 Computer-Aided Design			
EGR 230 Statics		MTH 121	PHY 243
EGR 260 Mechanics of Solids	EGR 230	MTH 122 (or concurrent)	
EGR 280 Engineering Materials			PHY 243
<b>EGR Core Courses</b>			
EGR 310 Engineering Economics		MTH 120	
EGR 315 Machine Element Design	EGR 260, 280		
EGR 330 Egr Circuit Analysis		MTH 122	PHY 245
EGR 350 Fluid Mechanics		MTH 121	PHY 243
EGR 353 Thermodynamics		MTH 122	PHY 243
EGR 370 Dynamics	EGR 230	MTH 222	
EGR 432 Manufacturing Process	EGR 260, 280		
EGR 465 Egr Design I	EGR 165, 310, 315, 350		
EGR 466 Egr Design II (Capstone)	EGR 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.**

Olanrewaju Aluko, Ph.D., Assistant Professor - [aluko@umflint.edu](mailto:aluko@umflint.edu)  
 Young-Man Kim, Ph.D., Assistant Professor - [kymkmo@umflint.edu](mailto:kymkmo@umflint.edu)  
 Quamrul Mazumder, Ph.D, Associate Professor - [qmazumde@umflint.edu](mailto:qmazumde@umflint.edu)  
 S. Turner, Ph.D., Chair - [swturner@umflint.edu](mailto:swturner@umflint.edu)  
 Katie Leist, Secretary - [kleist@umflint.edu](mailto:kleist@umflint.edu) -- Pat Slackta, Admin Assistant - [pslackta@umflint.edu](mailto:pslackta@umflint.edu)

Department of Computer Science, Engineering, and Physics (CSEP)  
 207 MSB - 810/762-3131 - [www.umflint.edu/csep/](http://www.umflint.edu/csep/)