

University of Michigan-Flint
B.S. in ENGINEERING, as of FALL 2012

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

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

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

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 (27 credits)	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)		

Two EGR Labs (EGR-PHY track = one lab) (2+ 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)		

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	

MTH - PHY - CHM - ENG - CSC (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)		

OTHER PROGRAM REQUIREMENTS
Option A (below) or Option B (see side two) (21 credits)
Minimum 128 credits including all CAS B.S. and General Education requirements.

Option A: (21 credits)	Term	Grade
EGR 321 Analog & Digital Electronics (3)		
EGR 380 System Dyn & Control (3)		
plus 15 additional credits of EGR 300+ - possibilities listed below:		
EGR 300 Renewable Energy (4)		
EGR 312 Kinematics & Mechanism (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 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)		

OPTION B - complete one:

Computer Engineering (21 credits)	Term	Grade
CSC 265 Computer Logic Design plus CSC 266 Lab (3)+(1)		
CSC 275 (C++ cont'd) (4)		
CSC 277 Org & Assembly Lang (3)		
Plus ≥10 additional credits in 300+ level CSC or CIS courses - possibilities listed below:		
CIS 314 Cyberethics (h) (3)		
CSC 335 Computer Networks I (3)		
CSC 336 Computer Networks II (3)		
CSC 365 Computer Architecture (3)		
CSC 375 Data Structures & Algorith (3)		
CSC 377 Operating Systems (3)		
CSC 391 Independent Study (1-3)		
CSC 477 Distributed Systems (3)		
CSC 478 Parallel Processing (3)		

Environmental Engineering (21 credits)	Term	Grade
GEO 151 Physical Geography II (4)		
GEO 272 Principles of Hydrology (3)		
RPL 370 Geographic Info Systems I (4)		
RPL 371 Geographic Info Systems II (4)		
RPL 486 Environ Site Assessment (3)		
Three credits from: RPL 411 Land Use Issues, or RPL 472 Watershed Management, or RPL 476 Environmental Planning (3)		

Managerial Engineering (Completion of Minor in General Business) (24 credits)		Term	Grade
Prereqs	ECN 201 Macroecon (s) (3)		
	ECN 202 Microecon (s) (3)		
	BUS 211 Bus Statistics (or other course in statistics) (fq) (3)		
Required courses; must earn grade of ≥C.	BUS 201 Fin Acctng (3)		
	BUS 250 Legal Issues (3)		
	BUS 330 Mrkt Mgmt (3)		
	BUS 341 Human Behav (3)		
	BUS 361 Fin Mngmnt (3)		

Engineering Physics (21 credits)	Term	Grade
PHY 333 Advanced PHY Lab (3)		
PHY 343 Modern Phy (3)		
EGR/PHY 354 Optics (3)		
EGR/PHY 367 Electric & Magnet (3)		
EGR/PHY 433 Adv Physics Lab II (1-3)		
Plus additional 300+ level CSC, EGR, MTH or PHY courses to bring total credits to ≥21.		
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**Prerequisites for the EGR Prerequisite and Core Courses (Note:
Grade of "C" or better required in most)**

	EGR	MTH	PHY
EGR Prerequisite Courses			
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
EGR Core Courses			
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		

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