

2018 – 2019 College Catalog Engineering (B.S.)

Student Name: HACC transfer student
Student ID: _____
Advisor Name: _____

Catalog: 2018 – 2019
Concentration: _____
Minimum Credits Required: _____

Notes:

HACC students transferring to Etown may take up to two courses for FREE at Etown through the Dual-Admission program. We recommend these courses be EGR 210 (Circuits) and EGR 260 (Statics) in the fall of the 2nd year. These are good foundational courses to introduce students to our department, teaching methods, and expectations for upper-level courses.

With guidance from HACC and Etown advisors, students completing the AS at HACC will likely be able to complete the BS engineering degree at Etown with any concentration in two additional years.

*Cooperative Internship Semesters Admin Fees Apply – See Catalog for more detail.

*Engineering majors may enroll in 19 credits for no more than three semesters at Elizabethtown without paying a credit overload fee.

*Students must earn a C- or better in ALL prerequisite Engineering and Physics course to continue in major.

Engineering majors are required to take:			
Course Name	Term Taken	Grade	Offered
PHY 120 – Introductory Mathematics for Physics (4.0) or MA 122 Calculus I (4.0)I	MATH 122	@ HACC	F
PHY 201 - College Physics I (4.0) Core: NPS <i>*Prerequisite(s): C- or better in PHY 120 or MA 121. Students who have credit for PHY 101 may not enroll in this course for credit.</i>	PHYS 211	@ HACC	S
PHY 202 - College Physics II (4.0) <i>*Prerequisite(s): PHY 201 and MA 121. Students who have credit for PHY 102 may not enroll in this course for credit.</i>	PHYS 212	@ HACC	F
EGR 191 - Introduction to Engineering I (4.0) (both waived if student has taken:	wavied		F
EGR 192 - Introduction to Engineering II (2.0) CAD 154 + ENGR 102 + ENGL 104 + COMM 101)	wavied		S
EGR 210 - Circuit Analysis (4.0) strongly recommended to take for FREE @ Etown in 2nd year fall semester <i>*Prerequisite(s): PHY 201 and MA 121.</i>			F
EGR 255 - Sustainable Resource Engineering and Design (3.0) <i>*Prerequisite(s): EGR 210.</i>			F
EGR 260 – Statics (3.0) strongly recommended to take instead for FREE @ Etown in 2nd year fall semester <i>*Prerequisite(s): PHY 201 and MA 121.</i>	ENGR 213	@ HACC	F
EGR 291 - Sophomore Project (1.0)			S
EGR 310 - Signals and Systems (3.0) <i>*Prerequisite(s): PHY 202 and MA 222.</i>			F
EGR 360 – Dynamics (3.0) <i>*Prerequisite(s): PHY 201 and MA 222.</i>	ENGR 214	@ HACC	F
EGR 391 - Engineering Design and Junior Project (2.0)			S
EGR 395 - Fall Seminar (1.0)			F
EGR 396 - Spring Seminar (1.0)			S
EGR 491 - Senior Project in Engineering I (2.0)			F
EGR 492 - Senior Project in Engineering II (2.0)			S
EGR Elective – Varies (3.0 – 4.0) <i>*Prerequisite(s): Varies (see other side). (must be outside of any declared concentration)</i>			F, S
CH 105 - Fundamentals of Chemistry: Introduction to Molecular Science (4.0) Core: NPS <i>*Prerequisite(s): High school chemistry and algebra.</i>	CHEM 101	@ HACC	F and S
CS 121 - Computer Science I (4.0)	CPS 121	@ HACC	F and S
MA 121 - Calculus I (4.0) Core: MA	MATH 121	@ HACC	F and S
MA 222 - Calculus III (4.0) <i>*Prerequisite(s): Grade of C- or better in both MA 121 and PHY 120 OR Grade of C- or better in MA 122.</i>	MATH 221	@ HACC	F and S
One additional 4-Credit Math or Science Elective, for math/science majors (4.0) <i>*Cannot be satisfied by an NPS Core course for non-science majors (ie, BIO 111 is okay, BIO 103 is not). **Must be BIO 111 for Biomedical Concentration</i>	Many HACC courses will satisfy - BIOL 101, CHEM 102, 203, MATH 202, 220, 125, PHYS 215		Varies
PH 275 - Science and Values (4.0) Core: HUM			S

Suggested first year courses:

Fall Semester:

PHY 120 – Introductory Mathematics for Physics (4.0)
 EGR 191 – Introduction to Engineering I (4.0)
 FYS 100 – First Year Seminar (4.0)
 CS 121 – Computer Science I (4.0)

Spring Semester:

PHY 201 – NPS College Physics I (4.0) Core: NPS
 MA 121 – MA Calculus I (4.0) Core: MA
 EGR 192 – Introduction to Engineering II (2.0)
 EN 100 – PLE Writing and Language or EN 150 – PLE Advanced Writing and Language or PH 110 – PLE Logic and Critical Thinking (4.0) Core: PLE

Engineering with a			
Course Name	Term Taken	Grade	Offered
Biomedical Concentration			
EGR 264 - Strength of Materials (4.0) *Prerequisite(s): EGR 260 and MA 222.			F
EGR 323 – Biomechanics of Human Movement (3.0) *Prerequisite(s): EGR 360 and CS 121.			S, even
EGR 324 – Structural Aspects of Biomaterials (3.0) *Prerequisite(s): EGR 264.			S, odd
EGR 328 – Introduction to Biomedical Engineering Design (3.0) *Prerequisite(s): EGR 291.			F, even
EGR 368 - Fluid Mechanics and Hydrology (3.0) *Prerequisite(s): EGR 260 and MA 222.			S
EGR 410 - Control Systems (4.0) *Prerequisite(s): EGR310.			S
MA 321 - Differential Equations (4.0) *Prerequisite(s): Grade of C- or better in both MA 121 and PHY 120 OR Grade of C- or better in MA 122.		must be taken @ Etown	S
Civil Concentration			
EGR 251 - Introduction to Environmental Engineering (3.0) *Prerequisite(s): CH 105.			F, even
EGR 256 - Environmental Site Engineering and Design (4.0) Prerequisite(s): PHY 201.		waived if both CVTE 103 + ENGR 203	S
EGR 264 - Strength of Materials (4.0) *Prerequisite(s): EGR 260 and MA 222.			F
EGR 353 - Green Architectural Engineering (3.0) *Prerequisite(s): PHY 201.			F, even
EGR 364 – Structural Engineering (3.0) *Prerequisite(s): EGR 264.			S, even
EGR 366 – Civil Engineering Materials (3.0) *Prerequisite(s): EGR 264.			S, odd
MA 321 - Differential Equations (4.0) *Prerequisite(s): Grade of C- or better in both MA 121 and PHY 120 OR Grade of C- or better in MA 122.		must be taken @ Etown	S
Electrical Concentration			
EGR 311 – Electronics (4.0) *Prerequisite(s): EGR 210.			S, odd
EGR 312 - Electromagnetism (PHY 312) (3.0) *Prerequisite(s): PHY 202 and MA 222.			S, odd
EGR 315 - Communication Theory (3.0) *Prerequisite(s): EGR 310.			S, even
EGR 317 - Physics of Semiconductor Devices (3.0) *Prerequisite(s): PHY 202.			F, even
EGR 318 - Fiber Optics Communication Systems (3.0) *Prerequisite(s): EGR 210.			F, odd
EGR 410 - Control Systems (4.0) *Prerequisite(s): EGR310.			S
MA 321 - Differential Equations (4.0) *Prerequisite(s): Grade of C- or better in both MA 121 and PHY 120 OR Grade of C- or better in MA 122.		must be taken @ Etown	S
Environmental Concentration			
EGR 251 - Introduction to Environmental Engineering (3.0) *Prerequisite(s): CH 105.			F, even
EGR 256 - Environmental Site Engineering and Design (4.0) Prerequisite(s): PHY 201.		waived if both CVTE 103 + ENGR 203	S
EGR 351 – Water and Wastewater Engineering (3.0) *Prerequisite(s): EGR 260.			F, odd
EGR 353 - Green Architectural Engineering (3.0) *Prerequisite(s): PHY 201.			F, even
EGR 368 - Fluid Mechanics and Hydrology (3.0) *Prerequisite(s): EGR 260 and MA 222.			S
EGR 467 – Thermodynamics (3.0) *Prerequisite(s): EGR 260 and MA 222, or permission of the instructor.			S
MA 321 - Differential Equations (4.0) *Prerequisite(s): Grade of C- or better in both MA 121 and PHY 120 OR Grade of C- or better in MA 122.		must be taken @ Etown	S
Industrial and Systems Concentration			
EGR 248 – Quantitative Methods/Operations Management (BA 248) (4.0) *Prerequisite(s): MA 251.			S
EGR 341 – Industrial and Systems Engineering Methods (3.0) *Prerequisite(s): MA 251.			F, even
EGR 345 – Fundamentals of Process Improvement (3.0) *Prerequisite(s): MA 251.			F
EGR 347 – Analytics for Supply Chain Operations (BA 347) (4.0) *Prerequisite(s): EGR 248/BA 248 or MA 251.			S
EGR 348 – Introduction to Manufacturing Processes (3.0) *Prerequisite(s): PHY 201.			F
EGR 410 - Control Systems (4.0) *Prerequisite(s): EGR310.			S
MA 251 – Probability and Statistics (4.0) *Prerequisite(s): none		MATH 202 or 203 @HACC	F and S
PSY 105 – General Psychology (4.0) *Prerequisite(s): none Core: SSC		PSYC 101 @ HACC	F and S
Mechanical Concentration			
EGR 264 - Strength of Materials (4.0) *Prerequisite(s): EGR 260 and MA 222.			F
EGR 348 – Introduction to Manufacturing Processes (3.0) *Prerequisite(s): PHY 201.			F
EGR 368 - Fluid Mechanics and Hydrology (3.0) *Prerequisite(s): EGR 260 and MA 222.			S
EGR 410 - Control Systems (4.0) *Prerequisite(s): EGR310.			S
EGR 463 - Analytical Mechanics and Vibrations (3.0) *Prerequisite(s): EGR 360 and MA 321.			S
EGR 467 – Thermodynamics (3.0) *Prerequisite(s): EGR 260 and MA 222, or permission of the instructor.			S
MA 321 - Differential Equations (4.0) *Prerequisite(s): Grade of C- or better in both MA 121 and PHY 120 OR Grade of C- or better in MA 122.		must be taken @ Etown	S