

# Bachelor of Engineering: Pre-Med/Pre-Dent Track – Mechanics Concentration

Course Requirements Guide (as of 05/11/2017)

(designations in parentheses indicate core curriculum attributes)

<p><b>Freshman 1</b> 18 credits (1) ENGR 1020 Basic Eng Graphics &amp; CAD (1) ENG 1023 Eng Computing (4) MTH 1410 Calc I (B1) (3) CHM 1070 Chemistry I (1) CHM 1100 Chemistry Lab I (3) BIO 1200 Biology I (2) BIO 1210 Biology I Lab (3) ENL 1310 Academic Writing (A2)</p>	<p><b>Freshman 2</b> 17 credits (3) PHY 1600 Physics (C1, IT2) (1) PHY 1610 Phys Lab (C1, IT2) (4) MTH 1420 Calc II (3) CHM 1080 Chemistry II (1) CHM 1120 Chemistry Lab II (3) BIO 1220 Biology II (2) BIO 1230 Biology II Lab</p>	<p><b>Freshman 3</b>  PYC 1000 Intro to Psych (Recommended) SOC 1000 Intro to Soc. (Recommended)</p>
<p><b>Sophomore 1</b> 18 credits (4) MTH 3720 Diff. Eq &amp; Lin Alg (3) PHY 1620 Physics II (1) PHY 1630 Phys II Lab (3) CHM 2270 Organic Chem I (1) CHM 2250 Organic Chem Lab I (1) ENGR 3000 Co-op Prep (3) RELS course (D2)* (2) ENGR 1000 Eng Ethics (F1, IT6)</p>	<p><b>Sophomore 2</b> 16-18 credits (3) ENGR 3120 Statics (2) ENGR 1080 Engineering Design (IT1) (4) MTH 2410 Calc III (3) CHM 2290 Organic Chem II (1) CHM 2260 Org.Chem Lab II (3) BIO 4801 Human Anatomy</p>	<p><b>Sophomore 3</b> 2 credits  CTA 3010 Co-op I  <i>Review requirements of several med/dent schools, discuss additional classes needed with advisor</i></p>
<p><b>Junior 1</b> 18 credits (3) ENGR 3150 Thermo I (3) ENGR 3130 Dynamics (3) ENGR 3170 Material Science (3) BIO 2700 Genetics (3) CHM 4710 Biochemistry I (3) PHL 1000 Intro to Philosophy (D1)</p>	<p><b>Junior 2</b> 18 credits (3) ENGR 3140 Fluid Mechanics (1) ENGR 3190 Fluids Lab (3) MTH 4270 Prob. &amp; Statistics (B2) (3) BIO 4630 Physiology (2) BIO 4640 Physiology Lab (3) CHM 4720 Biochemistry II (3) CST 1010 Speech (A1)  Sign up for UDM Pre-Med/Dent Committee letter interview</p>	<p><b>Junior 3</b> 0-2 credits  Begin Professional School Application  CTA 3030 Co-op II (Optional)  Prepare for MCAT/DAT Take MCAT/DAT at end of summer</p>
<p><b>Senior 1</b> 17 credits (3) ENGR 3200 Elect Eng (1) ENGR 3210 EE lab (3) MENG 3820 Manfg Proc (3) ENGR 3260 Mechs of Matls (1) ENGR 3270 Mechs of Matls Lab (3) Cultural Diversity, Human Difference, or Personal Spirituality course (IT3, IT4, or IT5)* (3) Aesthetics course (E3)*</p>	<p><b>Senior 2</b> 18 credits (3) MENG 3900 Intermediate Mech Matls (3) CSC 1712 Intro. Programming (3) RELS or PHL course (D3)* (3) History course (E1)* (3) Literary course (E2)* (3) Social Science course (C2)*</p>	<p><b>Senior 3</b> 0 – 2 credits CTA 3030 Co-op III (Optional)</p>

\*Core Curriculum Integrating Themes IT1, IT2, and IT6 are satisfied through required program courses. Students must take care to choose C2, D2, D3, E1, E2, E3 or IT courses to ensure that all Integrating Themes (including IT3, IT4, and IT5) are covered.

- The science (CHM and BIO) course sequence listed above is intended only as a guide. Students should carefully review the course requirements for the particular medical schools they are interested in attending. (i.e. BIO 4210 Microbiology-offered Winter at Detroit Mercy)
- Students should plan to take the MCAT no later than June of their junior year. A letter of recommendation from the Pre-Med/Pre-Dent evaluation committee should be solicited before then.
- Many medical schools DO NOT accept science course credits that were 1) taken at community colleges, 2) awarded through AP testing, or 3) taken online.
- As students progress through the curriculum, they should meet regularly with both engineering and science advisors.
- Recommend students coming in with AP, dual-enrollment or summer credits take BIO 2610 in Junior 1. (BIO 2700 Genetics may be shifted to Junior 2)
- Students can obtain a Bachelor of Mechanical Engineering with one more year of classes, provided they have completed all three co-op assignments (CTA 3010, CTA 3020, and CTA 3030). Courses needed to complete ME degree: ENGR 1021, ENGR 3110, ENGR 3112, ENGR 3240, ENGR 3400, ENGR 3410, MENG 3610, MENG 3800, MENG 3830, MENG 3920, MENG 4920, MENG 4930, MENG 4950, ENGR 4220, and two co-op assignments. This assumes that other 3000 or 4000 level science courses are accepted for the two required Technical Electives.

## **Year5-1**

13 credits

- (1) **ENGR 1021** Intermediate Eng Graphics
- (2) **ENGR 3110** Prof. Practice of Engineering
- (2) **MENG 4930** Protyp I
- (3) **MENG 3920** Mach Dsgn
- (3) **ENGR 3400** Heat Trnsfr
- (1) **ENGR 3410** Heat Trnsfr Lab
- (1) **MENG3830** Manfg Proc Lab

**\*Provided students have completed all three coops.**

## **Year5-2**

18 credits

- (3) **MENG 4920** CAE
- (2) **MENG 3610** Mech Msrmnts Lab
- (1) **ENGR 3112** Fund. of Engineering Practice
- (3) **MENG 3800** Thermo II
- (3) **MENG 4950** Protyp II
- (3) **ENGR 3240** Engineering Economy
- (3) **ENGR 4220** Controls

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