**CENG**

**Cohort Year 2023**
*(For Direct Entry students admitted to Year 2 in 2024)*

### Introduction (6 credits)
- Intro. to CBE [3] CENG1000
- Or
- Intro to BME [3] BIEN1010
- Or
- Intro to Env. Engg. [3] CENG1500
- Or
- Materials [3] CENG1500
- Or
- Biotechnology [3] CENG1600

### Math. & Science (24-28 credits)
- Biology [3] BIEN2410/BIEN2610 /LIFS1901
- Calculus I [3-4] MATH1012/1013/
  1023
- Calculus II [3] MATH1014/1024
- General Chem. Lab [1] CHEM1050

### CENG Electives x 3 chosen from:
- Area 1: Chemical Process Design
  - CENG 4100 Regulatory Science and Engineering
  - CENG 4130 Plant Design and Economics
  - CENG 4140 Energy Resources, Conversions and Technologies
  - CENG 4620 Bioprocesses and Processing
  - CENG 4630 Food Processing Technology
  - CENG 4670 Pharmaceutical Engineering
  - CENG 4710 Environmental Control
- Area 2: Chemical Product Design
  - CENG 4160 Prototype Development for Chemical Processes and Products
  - CENG 4540 Nanomaterials and Applications in CHE
  - CENG 4640 Biomolecular Engineering
  - CENG 4650 Biomaterials, Drug Delivery and Tissue Engineering
  - CENG 4950 CHEM-E-CAR (Pre-approved elective)
  - CHEM 2311 Analytical Chemistry

### ChE Design (14 credits)
- Or
- Or
- Or

### ChE Science (18 credits)
- Or
- Transport II [3] CENG3220
- Or
- Transport I [3] CENG2220
- Or
- CBE Thermo. [3] CENG2210
- Or
- Data Science for Molecular Engineering [3] CENG3330
- Or
- Reaction and Reactor Engg. [3] CENG3230
- Or
- Engineering Seminars [0] ENGG1010 & ENGG2010

### Research Option (6 credits)
- [3] CENG4980 and [3] CENG4980 or any 5000-level course in CENG or BIEN
- *Students taking the Research Option must take CENG4930*

### Final Year Project (6 credits)
- [6] CENG4920 (Capstone)
- Or [6] CENG4930* (Research)
- Or [6] CENG4940 (Co-op)

### Electives (9 credits)
- CENG Major: 95-101
- Common Core: 30
  - (9 credits of double-counting allowed)
- Pre-requisite
- Co-requisite

### Lab (4 credits)
- Chemical & Environmental Engg Lab [4] CENG3950

### Others (6 credits)
- Industrial Training (modules throughout 4 years) [0] CENG1980
- Academic & Professional Development [0] CENG1010 & CENG4020
- Data Science for Molecular Engineering [3] CENG3330

### Credit Requirement
- CENG Major: 95-101
- Common Core: 30
  - (9 credits of double-counting allowed)
- Pre-requisite
- Co-requisite

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**Fall Offering**
- Chemical & Environmental Engg Lab [4] CENG3950

**Spring Offering**
- Chemical & Environmental Engg Lab [4] CENG3950

**Year Long**
- Chemical & Environmental Engg Lab [4] CENG3950

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**Updated on: 29-June-2023**