## B.S. Degree in Chemical Engineering Science

| COURSE | | TITLE | LT | LB | CR | COURSE | | TITLE | LT | LB | CR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **First Year (Preparatory)** | | | | | | | | | | | |
| ENGL | 001 | Preparatory English I | 15 | 5 | 8 | ENGL | 002 | Preparatory English II | 15 | 5 | 8 |
| MATH | 001 | Preparatory Mathematics I | 3 | 1 | 4 | MATH | 002 | Preparatory Math II | 3 | 1 | 4 |
| PYP | 001 | Prep. Physical Sciences | 2 | 0 | 2 | PYP | 002 | Prep. Computer Sciences | 0 | 2 | 1 |
| PYP | 003 | University Study Skills | 0 | 2 | 1 | ME | 003 | Prep. Eng. Technology | 0 | 2 | 1 |
| PE | 001 | Preparatory Physical Educ I | 0 | 2 | 1 | PE | 002 | Preparatory Phys Educ II | 0 | 2 | 1 |
| | | | **20** | **10** | **16** | | | | **18** | **12** | **15** |

**Total credits required in Preparatory Program: 31**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Second Year (Freshman)** | | | | | | | | | | | |
| MATH | 101 | Calculus I | 4 | 0 | 4 | MATH | 102 | Calculus II | 4 | 0 | 4 |
| CHEM | 101 | General Chemistry I | 3 | 4 | 4 | CHEM | 102 | General Chemistry II | 3 | 4 | 4 |
| PHYS | 101 | General Physics I | 3 | 3 | 4 | PHYS | 102 | General Physics II | 3 | 3 | 4 |
| ENGL | 101 | An Intro to Academic Disc | 3 | 0 | 3 | ENGL | 102 | Introduction to Report Wr | 3 | 0 | 3 |
| ICS | 103 | Computer Programming in C | 2 | 3 | 3 | IAS | 101 | Practical Grammar | 2 | 0 | 2 |
| PE | 101 | Physical Education I | 0 | 2 | 1 | PE | 102 | Physical Education II | 0 | 2 | 1 |
| | | | **15** | **12** | **19** | | | | **15** | **9** | **18** |
| **Third Year (Sophomore)** | | | | | | | | | | | |
| CHE | 201 | Principles of Chem. Engg. I | 3 | 2 | 3 | CHE | 202 | Principles of Chem. Engg. II | 2 | 2 | 2 |
| CHEM | 201 | Organic Chemistry I | 3 | 4 | 4 | CHE | 204 | Transport Phenomena I | 3 | 0 | 3 |
| MATH | 201 | Calculus III | 3 | 0 | 3 | BIOL | 233 | Principles of Biology | 2 | 3 | 3 |
| ENGL | 214 | Academic & Professional C | 3 | 0 | 3 | MATH | 202 | Elementary Diff. Eq. | 3 | 0 | 3 |
| IAS | 111 | Belief and its Consequences | 2 | 0 | 2 | ME | 205 | Materials Science | 2 | 3 | 3 |
| | | | **14** | **6** | **15** | IAS | 201 | Writing For Prof. Needs | 2 | 0 | 2 |
| | | | | | | | | | **14** | **8** | **16** |
| **Fourth Year (Junior)** | | | | | | | | | | | |
| CHE | 300 | Transport Phenomena II | 3 | 0 | 3 | CHE | 306 | Stagewise Separations | 3 | 0 | 3 |
| CHE | 303 | Chem. Engg. Thermo. | 3 | 0 | 3 | CHE | 309 | Chem. Engg Lab I | 0 | 6 | 2 |
| CHE | 304 | Transport Phenomena III | 3 | 0 | 3 | CHEM | 321 | Instrumental Anal. for Engrs. | 2 | 4 | 3 |
| CHEM | 311 | Physical Chemistry I | 3 | 4 | 4 | STAT | 319 | Probability & Stats. for Engrs . | 2 | 3 | 3 |
| MATH | 371 | Intr. to Numerical Computing | 3 | 0 | 3 | IAS | 301 | Oral Communication Skills | 2 | 0 | 2 |
| IAS | 212 | Professional Ethics | 2 | 0 | 2 | GS | XXX | General Studies Elective I | 3 | 0 | 3 |
| | | | **17** | **4** | **18** | | | | **12** | **13** | **16** |

**Summer Session** CHE 399 Summer Training (0-0-0)

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Fifth Year (Senior)** | | | | | | | | | | | |
| CHE | 401 | Process Dynamics and Control | 3 | 0 | 3 | CHE | 495 | Integrated Design Course | 1 | 6 | 3 |
| CHE | 402 | Kinetics & Reactor Design | 3 | 0 | 3 | CHE | 409 | Chem. Engg. Lab II | 0 | 6 | 2 |
| CHE | 425 | Process Design and Economics | 3 | 0 | 3 | CHE | 4XX | Chem Engg Elective II | 3 | 0 | 3 |
| CHE | 4XX | Chem. Eng. Elective I | 3 | 0 | 3 | XE | XXX | Technical Elective II | 3 | 0 | 3 |
| XE | XXX | Technical Elective I | 3 | 0 | 3 | GS | XXX | General Studies Elective II | 3 | 0 | 3 |
| IAS | 322 | Human Rights in Islam | 2 | 0 | 2 | | | | **10** | **12** | **14** |
| | | | **17** | **0** | **17** | | | | | | |

**Total credits required for degree program: 133**