**BSc in Polymer Engineering – Curriculum Chart**

Term 1

| Courses | Credits | Code | Prerequisites | Type |
|---|---|---|---|---|
| General Chemistry | 3 | | | B |
| General Mathematics 1 | 3 | | | B |
| General Physics 1 | 3 | | | B |
| Foundations of Computer Programming | 3 | | | B |
| General English Language | 3 | | | G |
| General Persian | 3 | | | G |
| Introduction to Students Lifestyle | - | | | - |
| Total Credits | 18 | | | |

Term 2

| Courses | Credits | Code | Prerequisites / (Corequisites) | Type |
|---|---|---|---|---|
| Energy and Matter Balance | ۴ | | - | R |
| Organic Chemistry | ۳ | | General Chemistry | R |
| General Mathematics 2 | ۳ | | General Mathematics 1 | B |
| Industrial Drawing | ۲ | | - | B |
| Differential Equations | ۳ | | (General Mathematics 2) | B |
| General Chemistry Lab | ۱ | | General Chemistry | B |
| Physics 1 Lab | ۱ | | General Physics 1 | B |
| *one of the general courses of Theology* | ۲ | | - | G |
| Physical Education 1 | ۱ | | - | G |
| Total Credits | ۲۰ | | | |

Term 3

| Courses | Credits | Code | Prerequisites / (Corequisites) | Type |
|---|---|---|---|---|
| Thermodynamics 1 | ۳ | | Term 3 | R |
| Engineering Mathematics | ۳ | | Differential Equations | B |
| Polymerization Synthetics and Chemistry | ۳ | | Organic Chemistry | R |
| Organic Chemistry Lab | ۱ | | Organic Chemistry | R |
| Statics and Strength of Materials | ۳ | | Physics 1 | R |
| General Workshop | ۱ | | - | B |
| *one of the general courses of Theology* | ۲ | | - | G |
| Population and Family Health | ۲ | | - | G |
| Total Credits | ۱۸ | | | |

Term 4

| Courses | Credits | Code | Prerequisites / (Corequisites) | Type |
|---|---|---|---|---|
| Fluid Mechanics | ۳ | | Energy and Matter Balance | R |
| Physical Chemistry of Polymers | ۳ | | Polymerization Synthetics and Chemistry - (Thermodynamics 2) | R |
| Physical Chemistry of Polymers Lab | ۱ | | (Physical Chemistry of Polymers) | R |
| Thermodynamics 2 | ۳ | | Thermodynamics 1 | R |
| Polymerization Engineering | ۳ | | Polymerization Synthetics and Chemistry | R |
| Numerical Analysis | ۲ | | Computer Programming - Differential Equations | B |
| Natural Polymers Features and Properties | ۲ | | Polymerization Synthetics and Chemistry | E |
| *one of the general courses of Theology* | ۲ | | - | G |
| Total Credits | ۱۹ | | | |

Term 5

| Courses | Credits | Code | Prerequisites / (Corequisites) | Type |
|---|---|---|---|---|
| Physical-Mechanical Properties of Polymers | ۳ | | Statics and Strength of Materials - Physical Chemistry of Polymers | R |
| Composite Engineering | ۳ | | (Physical-Mechanical Properties of Polymers) | R |
| Physical-Mechanical Properties of Polymers Lab | ۱ | | (Physical-Mechanical Properties of Polymers) | R |
| Heat Transfer 1 | ۳ | | Fluid Mechanics 1 | R |
| Mass Transfer | ۳ | | Energy and Matter Balance | R |
| English for Students of Polymer Engineering | ۲ | | General English - Term 5 | E |
| Engineering Quantities Measurement | ۲ | | Fluid Mechanics 1 | E |
| *one of the courses of Theology* | ۲ | | - | G |
| Total Credits | ۱۹ | | | |

Term 6

| Courses | Credits | Code | Prerequisites / (Corequisites) | Type |
|---|---|---|---|---|
| Heat Transfer 2 | ۳ | | Heat Transfer 1 | R |
| Polymer Rheology | ۳ | | Physical Chemistry of Polymers - Heat Transfer 1 | R |
| Synthetics and Reactor Design | ۴ | | Thermodynamics 2 - Mass Transfer | R |
| Application of Mathematics in Chemical Engineering | ۳ | | Mass Transfer - Numerical Analysis | R |
| Unit Operation | ۳ | | Mass Transfer | R |
| Fluid Mechanics Lab | ۱ | | Fluid Mechanics 1 | R |
| Industrial Resins | ۲ | | Physical Chemistry of Polymers | E |
| Physical Education 2 | ۱ | | Physical Education 1 | G |
| Total Credits | ۲۰ | | | |

Summer Course

| Courses | Credits | Code | Prerequisites | Type |
|---|---|---|---|---|
| Internship | 2 | | 90 credits | |
| Total Credits | 2 | | | |

Term 7

| Courses | Credits | Code | Prerequisites | Type |
|---|---|---|---|---|
| Plastics Engineering | ۳ | | Polymer Rheology - Physical and Mechanical Properties of Polymers | R |
| Process Control | ۳ | | Unit Operation | R |
| Elastomer Engineering | ۳ | | Physical and Mechanical Properties of Polymers - Polymer Rheology | R |
| Unit Operation Lab | ۱ | | Unit Operation | R |
| Heat Transfer Lab | ۱ | | Heat Transfer 1 | R |
| Fiber Engineering | ۲ | | Physical and Mechanical Properties | E |
| *one of the general courses of Theology* | ۲ | | - | G |
| Total Credits | ۱۵ | | | |

Term 8

| Courses | Credits | Code | Prerequisites | Type |
|---|---|---|---|---|
| Polymer Processing Workshop | ۱ | | Plastics Engineering - Composite Engineering - Elastomer Engineering | R |
| Engineering Design and Economics | ۳ | | Unit Operation | R |
| Polymerization Engineering Lab | ۱ | | Polymerization Engineering | R |
| Process Control Lab | ۱ | | Process Control | R |
| Polymer and the Environment | ۲ | | *Term 6 and above* | E |
| one of the general courses of Theology | ۲ | | - | G |
| Project | ۳ | | *Term 6 and above* | R |
| Total Credits | ۱۳ | | | |

Total Credits of General Courses: 22 Total Credits of Basic Courses: 28

Total Credits of Required Courses: 80 Total Credits of Elective Courses: 12

Total Credits: 142 Total Credits of Internship: 2 (not included in GPA)

Course Types: G=General B=Basic R=Required E=Elective