**SAN JOSE STATE UNIVERSITY**

**Bachelor of Science in Industrial Technology *Manufacturing Systems Concentration***

***FRESHMAN YEAR***

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Fall** | **Units** |  | **Spring** | **Units** |
| Comm 20 or 20N, Public Speaking (GE: A1) | 3 |  | Engr 10, Introduction to Engineering | 3 |
| Math 71, Calculus for Business and Aviation | 3 |  | Econ 1B, Principle of Economics: Micro. | 4 |
| English 1A , Composition I (GE: A2) | 3 |  | GE Area C1 course | 2 |
| Tech 20A, Computer-Aided-Graphics | 3 |  | Tech 41, Machine Shop safety | 1 |
| Tech 60, Introduction to Electronics | 3 |  | Phys 2A, Fundamentals of Physics | 4 |
| **Total:** | **15** |  | **Total:** | **14** |

***SOPHMORE YEAR***

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Fall** | | **Units** |  | **Spring** | | | | | | | **Units** |
| Bus2 90, Business Statistics | | 3 |  | Tech 45, Sustainable Facilities Design & Plan | | | | | | | 3 |
| Phys 2B , Fundamentals of Physics | | 4 |  | CmpE 30, Programming Concepts and Meth | | | | | | | 3 |
| Tech 46, Machine Operation and Management | | 3 |  | Chem 1A, General Chemistry | | | | | | | 5 |
| Engl 2, Critical Thinking & Writing (GE: A3) | | 3 |  | Tech 65, Networking Theory and Application | | | | | | | 3 |
| GE Area C2 course | | 3 |  |  | | | | | | |  |
| **Total:** | | **16** |  | **Total:** | | | | | | | **14** |
|  | |  | | |  |  |  | | | |
| ***JUNIOR YEAR*** | | | | | | | | | | | |
|  | |  |  |  | | | | | | |  |
| **Fall** | | **Units** |  | **Spring** | | | | | | | **Units** |
| GE Area D2 course | | 3 |  | Engr 100W, Engineering Reports | | | | | | | 3 |
| GE Area C1 or Area C2 | | 3 |  | GE Area D3 course | | | | | | | 3 |
| Bus 140, Fund of Operation Mgnt | | 3 |  | Tech 25, Introduction to Materials Technology | | | | | | | 3 |
| Tech 115, Automation and Control | | 3 |  | Tech 31, Quality Assurance and Control | | | | | | | 3 |
| Tech 140, Green & Sustainable Product Design | | 3 |  | Tech 145, Lean Manufacturing | | | | | | | 3 |
| **Total:** | | **15** |  | **Total:** | | | | | | | **15** |
|  | |  | | | | | |  |  |
| ***SENIOR YEAR*** | | | | | | | | | | | |
|  | |  |  |  | | | | | | |  | **Area** | **Units** |
| **Fall** | | **Units** |  | **Spring** | | | | | | | **Units** |
| Tech 147, Green Mfg Analysis & Mgnt Tech | | 3 |  | Tech 149, Computer Integrated Mfg Sys Tech | | | | | | | 3 |
| 190A, Senior Project I | | 3 |  | Tech 190B, Senior Project II | | | | | | | 3 |
| Technical Elective | | 3 |  | Tech 198, Technology and Civilization (GE: V) | | | | | | | 3 |
| Bus 142, Total Quality Management | | 3 |  | Technical Elective | | | | | | | 3 |
| Bus 186 , Professional & Business Ethics (GE: S) | | 3 |  | Bus 141, Materials Management | | | | | | | 3 |
|  | |  |  | Technical Elective | | | | | | | 1 |
| **Total:** | | **15** |  | **Total:** | | | | | | | **16** |
|  | **Total units for degree : 120** | | | | | | | |

The Bachelor of Science in Industrial Technology Program with a concentration in Manufacturing Systems is designed to prepare graduates in-depth knowledge and hands-on experience for careers such as Applications Engineer, Systems Engineer, Customer Support Specialist, Test Engineer, Field Service Engineer, Networking Specialist, and Manufacturing Engineer.

This program will allow graduates to earn a minor in business as part of its curriculum.

**Industrial Technology Program Required Course Prerequisites & Co- Req’s**

|  |  |
| --- | --- |
| **Course** | **Prerequisites** |
| Bus 90, Business Statistics | Math 71 |
| Bus 140, Fund of Operations Management | Upper Division Standing |
| Bus 141, Materials Management | Upper Division Standing |
| Bus 142, Total Quality Management | Upper Division Standing |
| Bus 144, Supply Chain Management | Upper Division Standing |
| Bus 145, Global Operations Management | Upper Division Standing |
| Bus 186, Professional and Business Ethics | Pass WST, Upper Division Standing |
| Chem 1A, General Chemistry | High school chemistry or Chem 10 |
| CmpE 30, Programming Concepts And Methodology | none |
| Econ 1B, Principles of Economics: Microeconomics | none |
| Engr 100W, Engineering Reports | Pass WST, Upper Division |
| Math 71, Calculus for Business and Aviation | Math 8 or Math 19 |
| Phys 2B, Fundamentals of Physics | Phys 2A |
| Tech 20A, Computer-Aided-Graphics | none |
| Tech 25, Introduction to Materials Technology | Pre/ Coreq. Math 8; Coreq: Chem 1A |
| Tech 31, Quality Assurance and Control | Bus2 90 |
| Tech 41 , Machine Shop Safety | Tech 20A |
| Tech 45, Sustainable Facilities Design & Plan | Tech 20A |
| Tech 46, Machine Operation and Management | Tech 20A |
| Tech 60, Introduction to Electronics | Math 8 |
| Tech 62, Analog Circuits | Tech 60, Math 71 or 30. Co-req: Phys 2B |
| Tech 63, Digital Circuits | Tech 60 |
| Tech 65, Networking Theory and Application | Tech 60 |
| Tech 115, Automation and Control | Tech 60, Phys 2A/B, Math 71 |
| Tech 140, Green & Sustainable Product Design | Tech 20A , Chem 1A, Math 71 |
| Tech 145, Lean Manufacturing | Bus 140 or 145 or ISE 140 |
| Tech 146, 3D Printing and Applications | Tech 20A, Tech 25, Tech 140 |
| Tech 147, Green Mfg Analysis & Mgnt | Tech 45, Tech 46, Tech 115 Coreq: Tech 140 |
| Tech 149, Computer Integrated Mfg Sys | Tech 147, Coreq: Tech 145 |
| Tech 160, Microprocessors Theory and Apps | CmpE 30, Tech 63, Tech 115 |
| Tech 163, Telecommunications Systems | Tech 62, Tech 63 |
| Tech 165, Wireless Communications Tech | Tech 63, Tech 65 |
| Tech 167, Control Systems | Tech 62, Tech 63, Tech 115 |
| Tech 169, Applied Electronic Design | Tech 167 |
| Tech 190 A, Senior Project I | Engr 100W, Senior Standing |
| Tech 190 B, Senior Project II | Tech 190 A |
| Tech 198, Technology and Civilization | Pass WST, Upper Division Standing |