

# **INDUSTRIAL TECHNOLOGY AND PACKAGING (BS)**

#### **Degree Requirements and Curriculum**

In addition to the program requirements listed on this page, students must also satisfy requirements outlined in more detail in the Minimum Requirements for Graduation (https://catalog.calpoly.edu/academic-standards-policies/general-requirements-bachelors-degree/) section of this catalog, including:

- · 40 units of upper-division courses
- 2.0 GPA
- · Graduation Writing Requirement (GWR)
- · U.S. Cultural Pluralism (USCP)

Note: No Major or Support courses may be selected as credit/no credit. In addition, no more than 12 units of cooperative or internship courses can count towards your degree requirements.

| Code                                | Title   | Units |
|-------------------------------------|---|-------|
| MAJOR COURSES                       |   |       |
| ITP 1100                            | Student Orientation, College Success, and Career Readiness    | 1     |
| ITP 1125                            | Introduction to Industrial Technology and Packaging           | 1     |
| ITP 1150                            | Power Systems and Renewable Energy                            | 3     |
| ITP 2233                            | Product Modeling and Communication                            | 3     |
| ITP 3303                            | Lean Six Sigma Green Belt                                     | 3     |
| ITP 3326                            | Product Design and Development                                | 3     |
| ITP 3330                            | Packaging Fundamentals (Upper-Division 2/5) 1                 | 3     |
| ITP 3341                            | Packaging Polymers and Processing                             | 3     |
| ITP 3371                            | Supply Chain Management in Manufacturing and Services         | 3     |
| ITP 4409                            | Packaging Machinery and Processes                             | 3     |
| ITP 4411                            | Packaging Sustainability                                      | 3     |
| ITP 4464                            | Senior Project  | 3     |
| Concentration                       |   |       |
| (See list of concentrations below)  |   | 30-32 |
| SUPPORT COURSES                     |   |       |
| BUS 3346                            | Principles of Marketing                                       | 3     |
| BUS 3391                            | Information Systems   | 3     |
| CHEM 1120                           | Fundamentals of Chemical Structure and Properties (5A & 5C) 1 | 4     |
| ECON 2001                           | Survey of Economics (4B) <sup>1</sup>                         | 3     |
| Select from the following: (2) $^1$ |   | 4     |
| MATH 1261                           | Calculus I  |       |
| MATH 1267<br>& MATH 1277            | Business Calculus<br>and Business Calculus Workshop           |       |
| PHYS 1121                           | College Physics I   | 4     |
| STAT 1110                           | Applied Statistical Concepts and Methods                      | 3     |
| or STAT 1210                        | Business Statistics I   |       |
| GENERAL EDUCATION                   |   |       |
| (See GE program requirements below) |   | 30    |
| FREE ELECTIVES                      |   |       |
| Free Electives <sup>2</sup>         |   | 2-4   |
| Total Units                         |   | 120   |

Required in Major or Support; also satisfies General Education (GE) requirement.

<sup>&</sup>lt;sup>2</sup> If a General Education (GE) course is used to satisfy a Major or Support requirement, additional units of Free Electives may be needed to complete the total units required for the degree.



### Concentrations Industrial Technology

| Code                           | Title   | Units |
|--------------------------------|---|-------|
| REQUIRED COURSES               |   |       |
| ITP 2260                       | Materials and Manufacturing Technology                            | 3     |
| ITP 3390                       | Industrial Automation   | 3     |
| ITP 4403                       | Lean and Quality Systems Management                               | 3     |
| ITP 4410                       | Operations Planning and Control                                   | 3     |
| ITP 4415                       | Supply Chain and Logistics  | 3     |
| ITP 4428                       | Commercialization of Innovation                                   | 3     |
| ITP 4496                       | Product Development and Manufacturing I                           | 3     |
| ITP 4497                       | Product Development and Manufacturing II                          | 3     |
| Approved Electives             |   |       |
| Select from the following:     |   | 6-8   |
| Industrial Technology and Pack | kaging  |       |
| ITP 2203                       | Personal Leadership - 7 Habits                                    |       |
| ITP 2211                       | Industrial Safety and Maintenance                                 |       |
| ITP 2234                       | Packaging Design Fundamentals                                     |       |
| ITP 2241                       | Industrial and Packaging Materials                                |       |
| ITP 2270                       | Special Topics  |       |
| ITP 2275                       | Industrial Facilities Management                                  |       |
| ITP/BUS 3304                   | International Supply Chains                                       |       |
| ITP 4400                       | Special Problems for Advanced Undergraduates                      |       |
| ITP 4404                       | Lean Six Sigma Green Belt Certification Project                   |       |
| ITP 4406                       | Business-to-Business Complex Solutions Selling                    |       |
| ITP 4412                       | Instrumental Analysis of Packaging Polymers                       |       |
| ITP 4413                       | Quality Evaluation of Packaged Products                           |       |
| ITP 4414                       | Packaging Laws and Regulations                                    |       |
| ITP 4419                       | Internship/Cooperative Education                                  |       |
| ITP 4430                       | Healthcare Packaging  |       |
| ITP 4475                       | Distribution Packaging Dynamics                                   |       |
| ITP 4498                       | Packaging Development   |       |
| Business Analytics             |   |       |
| BUS 3392                       | Business Application Development                                  |       |
| BUS 3393                       | Database Systems in Business                                      |       |
| Business Management            |   |       |
| BUS 2212                       | Financial Accounting for Nonbusiness Majors                       |       |
| or BUS 2214                    | Financial Accounting  |       |
| BUS 2215                       | Managerial Accounting   |       |
| BUS 3384<br>& 3384A            | Human Resources Management and Human Resources Management Project |       |
| BUS 3387                       | Organizational Behavior   |       |
| BUS 4489<br>& 4489A            | Negotiation<br>and Negotiation Project                            |       |
| Entrepreneurship               |   |       |
| BUS 3310                       | Introduction to Entrepreneurship                                  |       |
| BUS 3313                       | Customer Development  |       |
|                                |   |       |

Total Units 30-32



### **Packaging**

| Code                                | Title  | Un  |
|-------------------------------------|--|-----|
| REQUIRED COURSES                    | Title  | Oil |
| TP 2234                             | Packaging Design Fundamentals  |     |
| TP 2241                             | Industrial and Packaging Materials   |     |
| TP 3334                             | Structural Packaging Design  |     |
| TP 4408                             | Fiber-Based Packaging  |     |
| TP 4430                             | Healthcare Packaging   |     |
| TP 4475                             | Distribution Packaging Dynamics  |     |
| TP 4498                             | Packaging Development  |     |
| Approved Electives                  | r ackaging bevelopment   |     |
| Select from the following: 1        |  | 9-  |
| Industrial Technology and Packaging |  | ,   |
| ITP 2211                            | Industrial Safety and Maintenance  |     |
| ITP 2260                            | Materials and Manufacturing Technology   |     |
| ITP 2270                            | Special Topics   |     |
| ITP 3304                            | International Supply Chains  |     |
| ITP 3390                            | Industrial Automation  |     |
| ITP 4400                            |  |     |
| ITP 4403                            | Special Problems for Advanced Undergraduates   |     |
| ITP 4404                            | Lean and Quality Systems Management  Lean Six Sigma Green Belt Certification Project |     |
| ITP 4404                            |  |     |
| ITP 4410                            | Business-to-Business Complex Solutions Selling                                       |     |
|                                     | Operations Planning and Control  |     |
| ITP 4412                            | Instrumental Analysis of Packaging Polymers  |     |
| ITP 4413                            | Quality Evaluation of Packaged Products  |     |
| ITP 4414                            | Packaging Laws and Regulations   |     |
| ITP 4415                            | Supply Chain and Logistics   |     |
| ITP 4419                            | Internship/Cooperative Education   |     |
| ITP 4428                            | Commercialization of Innovation  |     |
| Food Science                        |  |     |
| FSN 3319                            | The Science of Food for the Consumer   |     |
| Business Analytics                  |  |     |
| BUS 3392                            | Business Application Development   |     |
| BUS 3393                            | Database Systems in Business   |     |
| Business Management                 |  |     |
| BUS 2212                            | Financial Accounting for Nonbusiness Majors  |     |
| or BUS 2214                         | Financial Accounting   |     |
| BUS 2215                            | Managerial Accounting  |     |
| BUS 3384<br>& 3384A                 | Human Resources Management and Human Resources Management Project                    |     |
| BUS 3387                            | Organizational Behavior  |     |
| BUS 4489<br>& 4489A                 | Negotiation and Negotiation Project  |     |
| Entrepreneurship                    |  |     |
| BUS 3310                            | Introduction to Entrepreneurship   |     |
| BUS 3313                            | Customer Development   |     |

<sup>1</sup> Units in excess of total will be applied towards major's free electives.



## **General Education (GE) Requirements**

- · 43 units required, 13 of which are specified in Major and/or Support.
- If any of the remaining 30 Units is used to satisfy a Major or Support requirement, additional units of Free Electives may be needed to complete the total units required for the degree.
- See the complete GE course listing (https://catalog.calpoly.edu/academic-standards-policies/general-requirements-bachelors-degree/#generaleducationtext).
- A grade of C- or better is required in one course in each of the following GE Areas: 1A (English Composition), 1B (Critical Thinking), 1C (Oral Communication), and 2 (Mathematics and Quantitative Reasoning).

#### **Lower-Division General Education**

| Area 1                           | English Communication and Critical Thinking  |    |
|----------------------------------|--|----|
| 1A                               | Written Communication  | 3  |
| 1B                               | Critical Thinking  | 3  |
| 1C                               | Oral Communication   | 3  |
| Area 2                           | Mathematics and Quantitative Reasoning   |    |
| 2                                | Mathematics and Quantitative Reasoning (3 units in Support) 1  | 0  |
| Area 3                           | Arts and Humanities  |    |
| 3A                               | Arts   | 3  |
| 3B                               | Humanities: Literature, Philosophy, Languages other than English                                       | 3  |
| Area 4                           | Social and Behavioral Sciences (Area 4 courses must come from at least two different course prefixes.) |    |
| 4A                               | American Institutions (Title 5, Section 40404 Requirement)   | 3  |
| 4B                               | Social and Behavioral Sciences (3 units in Support) 1  | 0  |
| Area 5                           | Physical and Life Sciences   |    |
| 5A                               | Physical Sciences (3 units in Support) 1   | 0  |
| 5B                               | Life Sciences  | 3  |
| 5C                               | Laboratory (may be embedded in a 5A or 5B course) (1 units in Support) $^{ m 1}$                       | 0  |
| Area 6                           | Ethnic Studies   |    |
| 6                                | Ethnic Studies   | 3  |
| Upper-Division General Education |  |    |
| Upper-Division 2/5               | Mathematics and Quantitative Reasoning or Physical and Life Sciences (3 units in Major) <sup>1</sup>   | 0  |
| Upper-Division 3                 | Arts and Humanities  | 3  |
| Upper-Division 4                 | Social and Behavioral Sciences (Area 4 courses must come from at least two different course prefixes.) | 3  |
| Total Units                      |  | 30 |

Required in Major or Support; also satisfies General Education (GE) requirement.