

BACHELOR OF SCIENCE IN INDUSTRIAL DESIGN: CONCENTRATION IN PRODUCT DESIGN AND DEVELOPMENT

The Bachelor of Science in Industrial Design with Concentration in Product Design and Development (BSID/PDD) is a program for students who intend to focus their studies on product-oriented design applications. The major addresses the creation of industrial goods and services and concentrates on three principle aspects of design: process, people, and product. The BSID/PDD incorporates the study of user-centered needs, relative to the responsible and resourceful implementation of technology innovation, materials, marketing principles, and aesthetic values.

Program Learning Outcomes

1. Students are able to apply a structured design process to a variety of problems of different scope and complexity
2. Students understand how design is shaped by its contexts: community, social issues, culture, accessibility, environment, technology, etc.
3. Students have an understanding of visual literacy, design history, design professions, and adjacent topics
4. Students are able to apply critical thinking, research and writing to the design problem at various stages
5. Students have experience with and skills in the tools and technologies relevant to the design professions
6. Students can flexibly apply a variety of creative strategies to develop innovative solutions to design problems
7. Students are familiar with the professional practices common to design: presentation, documentation, project management, etc.
8. Collaborative learning approaches are encouraged, both within and beyond the classroom. This may include collaborations with external partners such as community organizations and/or industry partners.

Industrial Design (B.S.): Concentration in Product Design and Development – 59 Units

General Education Requirements Met in the Major

The requirements below are deemed “met in the major” upon completion of the courses listed (even though the courses and their prerequisites are not approved for GE). This is true whether or not the student completes the major.

- Upper-Division General Education, Arts and/or Humanities (UD-C) is satisfied upon completion of DES 356.

Core Prerequisites and Foundation (19 units)

Core Prerequisites (7 units)

All three must be taken during the first semester in the major.

Code	Title	Units
DES 323	Visual Design Literacy	3
DES 356	A History of Design and Technology	3
DES 370	Introduction to Design	1

Core Foundation (12 units)

Code	Title	Units
DES 300	Design Process	3
DES 320	Drafting and Sketching for Design	3
DES 322	Computer Graphic Imaging	3
DES 324GW	Research and Writing for Design - GVAR	3

Basic Requirements (9 units)

Code	Title	Units
ECON 101	Introduction to Microeconomic Analysis	3
MKTG 431	Principles of Marketing	3
PHYS 101	Conceptual Physics	3

Concentration Requirements (19 units)

Code	Title	Units
DES 305	Lab Safety Basics	1
DES 310	Product Design I	3
DES 321	Technical Drawing I: Introduction to CAD	3
DES 410	Product Design II	3
DES 420	Rapid Visualization	3
DES 421	Technical Drawing II: 3-D Solid Modeling	3
DES 460	Rapid Prototyping and Manufacturing Systems	3

Concentration Electives (9 units)

Note: Students may choose DES 575 or DES 576, but may not choose DES 575 and DES 576.

Code	Title	Units
Select three of the following:		
ACCT 100	Introduction to Financial Accounting	3
DES 210	Industrial Science	3
DES 332	Electricity and Electronics	3
DES 340	Design and Materials	3
DES 360	Model Development Laboratory	3
DES 475	Topics in Design	3
DES 524	Information Design II: Exhibit Design	3
DES 575	Contemporary Design Workshop	3
DES 576	Practical Experience: Internship	3

Culminating Requirement (3 units)

Code	Title	Units
DES 505	Senior Design Project (to be taken in the last semester)	3

Note: Courses taken to fulfill core requirements may be substituted with other courses by advisement.

General Education Requirements

Requirement	Course Level	Units	Area Designation
Oral Communication	LD	3	A1

Written English Communication I	LD	3	A2
Critical Thinking	LD	3	A3
Physical Science	LD	3	B1
Life Science	LD	3	B2
Lab Science	LD	1	B3
Mathematics/Quantitative Reasoning	LD	3	B4
Arts	LD	3	C1
Humanities	LD	3	C2
Arts or Humanities	LD	3	C1 or C2
Social Sciences	LD	3	D1
Social Sciences: US History	LD	3	D2
Social Sciences: US & CA Government	LD	3	D3
Lifelong Learning and Self-Development (LLD)	LD	3	E
Physical and/or Life Science	UD	3	UD-B
Arts and/or Humanities	UD	3	UD-C
Social Sciences	UD	3	UD-D

SF State Studies

Courses certified as meeting the SF State Studies requirements may be upper or lower division in General Education (GE), a major or minor, or an elective.

American Ethnic and Racial Minorities	LD or UD	3	AERM
Environmental Sustainability	LD or UD	3	ES
Global Perspectives	LD or UD	3	GP
Social Justice	LD or UD	3	SJ

Note: LD = Lower-Division; UD = Upper-Division.

First-Time Student Roadmap (4 Year)

Find the correct roadmap (A, B, C, or D):

1. Select the row that matches your English Course choice for A2.*
2. Select the column that matches your QR Category (found at your student center under Math Alert).
3. Click the Roadmap that lines up with your row and column.

For example, if you are taking ENG 104 as your first English course and your student center math alert says you are QR Category III, you should choose Roadmap D.

Pathway	QR Cat I/II	QR Cat III/IV
ENG 114	Roadmap A (http://bulletin.sfsu.edu/colleges/liberal-creative-arts/design-industry/bs-industrial-design-concentration-product-design-development/roadmap-i-ii-eng/)	Roadmap C (http://bulletin.sfsu.edu/colleges/liberal-creative-arts/design-industry/bs-industrial-design-concentration-product-design-development/roadmap-iii-iv-eng/)
ENG 104/ENG 105	Roadmap B (http://bulletin.sfsu.edu/colleges/liberal-creative-arts/design-industry/bs-industrial-design-concentration-product-design-development/roadmap-i-ii-stretch/)	Roadmap D (http://bulletin.sfsu.edu/colleges/liberal-creative-arts/design-industry/bs-industrial-design-concentration-product-design-development/roadmap-iii-iv-stretch/)

*Composition for Multilingual Students: If taking ENG 209 as your first English course, choose the ENG 114 row. If taking ENG 204 for your first English course, choose the ENG 104/ENG 105 row.

SF State Scholars

The San Francisco State Scholars program provides undergraduate students with an accelerated pathway to a graduate degree. Students in this program pursue a bachelor's and master's degree simultaneously. This program allows students to earn graduate credit while in their junior and/or senior year, reducing the number of semesters required for completion of a master's degree.

This roadmap opens in a new tab. (<http://bulletin.sfsu.edu/colleges/liberal-creative-arts/design-industry/bs-industrial-design-concentration-product-design-development/scholars-roadmap/>)

General Advising Information for Transfer Students

1. Before transfer, complete as many lower-division requirements or electives for this major as possible.
2. The following courses are not required for admission but are required for graduation. Students are strongly encouraged to complete these units before transfer; doing so will provide more flexibility in course selection after transfer.
 - a course in U.S. History
 - a course in U.S. & California Government

For information about satisfying the requirements described in (1) and (2) above at a California Community College (CCC), please visit <http://www.assist.org> (<http://assist.org>). Check any geographically accessible CCCs; sometimes options include more than one college. Use ASSIST to determine:

- Which courses at a CCC satisfy any lower-division major requirements for this major;
- Which courses at a CCC satisfy CSU GE, US History, and US & CA Government requirements.

Remedial courses are not transferable and do not apply to the minimum 60 semester units/90 quarter units required for admission.

Additional units for courses that are repeated do not apply to the minimum 60 units required for upper-division transfer (for example, if a course was not passed on the first attempt or was taken to earn a better grade).

Before leaving the last California Community College of attendance, obtain a summary of completion of lower-division General Education units (IGETC or CSU GE Breadth). This is often referred to as a GE certification worksheet. SF State does not require delivery of this certification to Admissions, but students should retain this document for verifying degree progress after transfer.

Credit for Advanced Placement, International Baccalaureate, or College-Level Examination Program courses: AP/IB/CLEP credit is not automatically transferred from the previous institution. Units are transferred only when an official score report is delivered to SF State. Credit is based on the academic year during which exams were taken. Refer to the University Bulletin in effect during the year of AP/IB/CLEP examination(s) for details regarding the award of credit for AP/IB/CLEP.

Students pursuing majors in science, technology, engineering, and mathematics (STEM) disciplines often defer 6-9 units of lower-division General Education in Areas C and D until after transfer to focus on preparation courses for the major. This advice does not apply to students pursuing associate degree completion before transfer.

Transferring From Institutions Other Than CCCs or CSUs

Review SF State's lower-division General Education requirements. Note that, as described below, the four basic skills courses required for admission meet A1, A2, A3, and B4 in the SF State GE pattern. Courses that fulfill the remaining areas of SF State's lower-division GE pattern are available at most two-year and four-year colleges and universities.

Of the four required basic skills courses, a course in critical thinking (A3) may not be widely offered outside the CCC and CSU systems. Students should attempt to identify and take an appropriate course no later than the term of application to the CSU. To review more information about the A3 requirement, please visit bulletin.sfsu.edu/undergraduate-education/general-education/lower-division/#AAEL.

Waiting until after transfer to take a single course at SF State that meets both US and CA/local government requirements may be an appropriate option, particularly if transferring from outside of California.

All Students Must Meet the Transfer Eligibility Requirements Outlined Below for Admission.

For more information, visit the Undergraduate Admissions section (<http://bulletin.sfsu.edu/undergraduate-admissions/>).

- Complete 60 or more transferable semester units or 90 or more quarter units.
- Earn a college grade point average of 2.0 or better in all transferable courses. Non-local area residents may be held to a higher GPA standard.
- Be in good standing at the last college or university attended.
- Complete 30-semester units (45-quarter units) of General Education, including four basic skills courses:
 - a. One course in oral communication (same as CSU GE Area A1)
 - b. One course in written composition (same as CSU GE Area A2)

- c. One course in critical thinking (same as CSU GE Area A3)
 - d. One course in mathematics or quantitative reasoning (same as CSU GE Area B4)
- The four basic skills courses and a minimum of 60 transferable semester units (90-quarter units) must be completed by the spring semester prior to fall admission, or by the fall semester prior to spring admission. Earn a C- or better grade in each basic skills course.