PRODUCT DESIGN UNDERGRADUATE MAJOR

Product Design (PD)

Completion of the undergraduate program in Product Design leads to the conferral of the Bachelor of Science in Engineering. The subplan Product Design appears on the transcript and on the diploma.

Mission of the Undergraduate Program in Product Design

The mission of the undergraduate program in Product Design is to graduate designers who can synthesize technology, human factors, and business factors in the service of human need. The program teaches a design process that encourages creativity, craftsmanship, aesthetics, and personal expression, and emphasizes brainstorming and need finding. The course work provides students with the skills necessary to carry projects from initial concept to completion of working prototypes. Students studying product design follow the basic Mechanical Engineering curriculum and are expected to meet the University requirements for a Bachelor of Science degree. The program prepares students for careers in industry and for graduate study.

Requirements

Mathematics and Science

<table>
<thead>
<tr>
<th>Course Name</th>
<th>Units</th>
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<tbody>
<tr>
<td><strong>Mathematics</strong></td>
<td>20 minimum</td>
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<tr>
<td><strong>Science</strong></td>
<td>17 minimum</td>
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17 units minimum: Minimum of 9 units of SoE approved science and 8 units of Behavioral Science.

Physics 41 Mechanics or Physics 41E Mechanics, Concepts, Calculations, and Context

Psych 1 Introduction to Psychology

Psych or Humbio elective

Technology in Society

One course required; must be on the SoE approved TIS courses list at <ughb.stanford.edu> the year it is taken.

Engineering Fundamentals

8 units minimum

CS 106A Programming Methodology

Engr 40M An Intro to Making: What is EE or Engr 40A Introductory Electronics

Product Design Engineering Depth

54 units minimum

Two Art Studio or Computer Science courses, 100 series or higher

Engr 14 Intro to Solid Mechanics

Me 80 Mechanics of Materials

Me 101 Visual Thinking

Me 102 Foundations of Product Realization

Me 103 Product Realization: Design and Making

Me 104 Mechanical Systems Design

Me 110 Design Sketching

ME 115A Introduction to Human Values in Design

ME 115B Product Design Methods

ME 120 History and Philosophy of Design

ME 215C Analytical Product Design

ME 216A Advanced Product Design: Needfinding

ME 216B Advanced Product Design: Implementation

ME 216C Advanced Product Design: Implementation

1 Math requirements can be met with the Math 19-21 series, the MATH 50's series, and/or the CME 100 series; STATS 60 is recommended

2 AP units can be applied; have these approved by SoE Dean's Office before asking advisor to sign-off.

3 School of Engineering approved science list available at http://ughb.stanford.edu. Psych electives numbered 30-200 or Humbio 82A or Humbio 160 are pre-approved.

4 ME 216B and/or ME 216C will fulfill the Writing in the Major (WIM) requirement for Product Design beginning 2019-20.

5 ME 215C is the only course that can be waived if a student takes a quarter overseas or at one of the BosP campuses in New York or Washington DC. Students should plan their overseas quarter to take place in sophomore year, or Spring Quarter of the junior year only. If the student elects to go overseas junior year, the total depth units are reduced by 4; this is approved without petition.

6 You may substitute ME 216B and ME 216C with ME 206A and ME 206B Design for Extreme Affordability.

A course may only be counted towards one requirement; it may not be double-counted. All courses taken for the major must be taken for a letter grade if that option is offered by the instructor. Minimum Combined GPA for all courses in Engineering Topics (Engineering Fundamentals and Depth courses) is 2.0.

For additional information and sample programs see the Handbook for Undergraduate Engineering Programs (UGHB) (http://ughb.stanford.edu).