

Review

Product Design: A course in first principles

Title:	Product Design: A course in first principles
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Professor Bonollo has crafted a text that aims at providing introductory studies in product design which may be undertaken in the early years of programs in industrial and engineering design, design and technology and product design engineering as studied in art and design schools, polytechnics and universities. In scope, the book is primarily about systematic, self-directed learning in design.

Chapter 1 provides a foundation of first principles in theoretical and practical aspects of design. These include: the theory of design; design thinking; a model of the design process; design learning and learning outcomes. This foundation underpins subsequent chapters where student projects are described and related to the theory and methodologies that are provided. From Chapter 1 onwards the problem-based approach is also configured so as to encourage learner designers to cultivate an understanding of various product materials, manufacturing processes and simple technologies in an experimental and open-ended manner, without going too deeply into fundamental knowledge related to the engineering sciences. Thus a framework is provided that guides the learning process and explains design outcomes. Chapter 2 builds on the earlier-introduced design process to include additional steps including marketing considerations, and pragmatic, syntactic and semantic design analysis. Functional Analysis, both esteem and use, is introduced and pitched at a level appropriate to the young, aspiring designer. Learning outcomes, expected of the project and perceived by the student, are also included and encourage reflection on what had been achieved in a way that is almost a dialogue with the student designer. Chapter 3 introduces creative design and design for context and continues to build upon and reinforce earlier chapters. Wider considerations such as eco design and life-cycle analysis are introduced together with more detailed

instruction regarding form and visual language, design methods and techniques. As with earlier chapters, the text is replete with many examples of projects and these exemplify the methods, theory and techniques imparted. Chapter 4, using design for connectivity, rounds off the text presenting examples of design briefs and solution concepts as well as placing emphasis on detail resolution of the respective projects.

The strength of the text is in the way design theories, modes of design analysis and synthesis are all applied to products appropriate for first and second-year design. That is, the products are simple yet serve to effectively exemplify both theoretical and pragmatic approaches. The structure of the book serves to continually build upon and reinforce prior knowledge and to create a narrative that encourages confidence in the learning journey upon which the student has embarked. In addition, the final bibliography is comprehensive and diverse and provides a wide range of literature for the aspiring student designer to consult.

The author clearly has great sympathy for student designers struggling to master the complex considerations that occur even in the simplest product. In this way the text is differentiated from others in that Professor Bonollo's long experience in the teaching of design demonstrates a real understanding of the importance of building confidence and the cycles of reinforcement he introduces serve to provide significant guidance for the student. It is a fine book, beautifully illustrated and is a reflection of Professor Bonollo's significant knowledge of and contribution to the field of industrial and product design.