

The Development of the Design Syllabus

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It is widely accepted by design teachers and instructors that good design practice develops from an awareness of design theory. In both two- and three-dimension design, including textile, graphic, fashion and product design, an awareness of the geometrical concepts and principles underlying structure and form is of fundamental importance. However in many high-ranking higher-education institutions worldwide, fully equipped with the most technologically-advanced computer software, the tendency is to step away from providing the theoretical foundation necessary to allow students to engage without restraint in the design process. After all, much of the software available can synthesis designs with the minimum of effort. So why bother? Worldwide, it appears that the stress in design education is on training students in the usage of the most recent software, rather than laying a theoretical foundation to allow full participation in the creative process (ideally, but not crucially, using the most advanced computer technology available). The reticence of instructors and teachers to remedy this state of affairs is understandable, for often the knowledge and understanding required to develop appropriate theoretical curricula is hidden in relatively obscure literature, and wrapped in unfamiliar symbols and terminology. There have been a number of attempts to remedy this state of affairs. This is evidenced by several recently published theoretical texts, based on educational modules invariably aimed at architectural design students. Developments in the curricula delivered to students from other design disciplines have also taken place in some institutions. This paper presents details of one such development. An outline is presented of the syllabus of an undergraduate module which has been developed over the past five years at the University of Leeds. Running under the title, 'Design

Theory - Structure and Form' , the module is concerned largely with the geometrical aspects of design, and is delivered as a core module to three hundred design students (including many textile and fashion students) and is selected as an optional module by a further fifty students. The syllabus is based largely on the past or current research interests of the authors of this paper, and includes coverage of the following topics: tiling the plane; periodic and Penrose-type aperiodic tilings; numbers and their symbolism; patterns and symmetry; the principles of modularity (minimum inventory and maximum diversity) the Fibonacci series and the golden section; map colouring; laws of linear perspective; polyhedra; scale similarity and fractals. The objective of this paper is to present an outline of the subject matter of the module. The paper should be of interest to university teachers concerned with design education. Reference will be made to historic and modern design worldwide, key texts will be identified, and examples of student work will be given.