

Drexel University College of Information Studies: Evolving Programs, New Connections

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During the 1980s, the ever-evolving curricula of the Drexel University College of Information Studies have undergone significant development in the area of Information Systems. This article details the recent innovations in the systems area at both undergraduate and graduate levels, and places these systems offerings in the context of the history, philosophy, and mission of the college.

Overview

"The mission of the College of Information Studies of Drexel University is to advance the study of information, integrating its human, social, and technological aspects [1]. In keeping with this goal, the College of Information Studies (CIS) offers four academic programs. 1) The undergraduate program is in Information Systems with specializations in Information Systems Concepts, Information Systems Analysis and Development, and Information Systems Applications; 2) The masters program is an ALA-accredited program that stresses the interdisciplinary nature of library science, information science, and information systems; 3) A certificate of advanced study program provides post-masters study in all of these areas; 4) The Ph.D. program allows students to specialize in one of the following areas and requires a second area as a minor: information systems design and evaluation, scholarly and professional communication, and management of information resources.

Philosophy

The underlying philosophy that guides the evolution of all these programs is that students with a primary interest in any one aspect of information study will benefit from exposure to at least foundational courses in other aspects. For undergraduates studying information systems, one of the freshman level courses introduces students to such traditional library science material as the "broad range of information resources, the structure of those resources, and means to access them" [2]. Two of the core courses taken

by all masters students are "Information Resources and Services" and "Introduction to Information Systems Analysis." Thus both masters and undergraduate students are required to take courses that introduce them to foundational material from across the information studies spectrum.

Also guiding the development of the Drexel CIS programs is the philosophy that students need an understanding both of information users and of information technology. In all programs students are introduced to theories of individual and organizational information behavior, to theories underlying the existing and foreseeable information technology, and to methods of satisfying user needs with information technology.

The third point to the philosophy behind the Drexel CIS programs is that students must have both theoretical understanding of their field and applied experience with methods of implementation. This holds not only for courses that make use of computer technology (such as online searching and database design), but also for courses such as Systems Analysis (in which students analyze existing systems) and Information Ethics (in which students write position papers stating and defending policy decisions in cases taken from current events).

History

The 100th birthday of Drexel occurs in 1991 and the 100th birthday of the Drexel Library Science program the following year. What began as a certificate program evolved to a fifth-year BS degree in 1922 and then to an MS degree in 1950. By 1962 concentrations were available in College and University Library Service, Public Library Service, Special Library Service, and Service to Children and Young People in School and Public Libraries [3]. The catalog for 1962-63 reveals a set of library science courses (including documentation and communications) without any courses in computers, programming, logic, philosophy of science, or professional writing [4]. All of these courses, including a three-course set in computers, appear suddenly in the 1963-1964 catalog under an Information Science program—one of the earliest and most extensive—

offered alongside the Library Science program [5]. The Information Science program included new courses in publication and management as well as in instrumentation.

In 1970 the two programs were combined into a single undesignated MS program with three areas of concentration: General Librarianship, Information Science, and Educational Media [6]. The legacy of the seven years of the Information Science program to the combined program appears to be the following: two courses in programming, the information science content of the new and required Fundamentals of Library and Information Science, the retained courses in Search Strategy, Abstracting and Indexing, and Information Center Administration, and the two new courses in Evaluation of Information Systems and Library Automation.

From 1970 to 1980 the offerings remained fairly stable. The most notable additions were in the areas of media design and production and systems analysis and design. During this time (1974) the Ph.D. program was added. For a number of reasons detailed elsewhere [7], the circumstances were right in the early 1980s for what was then the School of Library and Information Science to expand its offerings in the information systems area at the graduate level and to inaugurate an information systems curriculum at the undergraduate level.

Undergraduate Curriculum

The undergraduate Information Systems (IS) curriculum was developed to meet relevant portions of the model curricula of the Data Processing Management Association (DPMA) [8] and the Association for Computing Machinery (ACM) [9]. It is distinct from most such programs because it has evolved within an information context (to which relevant technology and corporate concerns are added) instead of within a business or computer science context (to which information concerns are added). Accordingly, each student's course work is developed in the following pattern: approximately one-third is in information systems and computer science, one-third in the behavioral sciences, arts, and humanities, and one-quarter in the natural sciences, mathematics, and economics. Within these broad areas there is substantial flexibility in choosing specific courses. The high proportion of courses in the first two broad areas reflect the fact that students of information systems have equal need for studies that will enable them to appreciate and anticipate human information needs and ones that will enable them to use the latest technology to satisfy that need [10]. The curriculum includes twelve quarters of study and six quarters of work experience (co-op) in a five-year program.

Since the program has been in place for less than five years, the only graduates of the program thus far have had an upperclass status when they transferred to it. All have found it easy to obtain well paid and challenging positions in the field.

Masters Curriculum Innovations

Many new courses in the systems area have become available to graduate students as a direct result of implementing the undergraduate curriculum in information systems. Figure 1 shows the graduate courses available to those interested in the "systems side" of the curriculum. The diagram indicates the prerequisite structure for those courses that have prerequisites other than the required core [11]. Below right is a list of additional courses recommended to students interested in designing information systems. Below left is a list of courses recommended to students interested in managing information systems. Many courses are appropriate to both groups. Additionally, most "systems" students are advised to take at least one resource course, and many take additional on-line courses [12]. The percentage of graduate students, at both the Masters and the Ph.D. level, interested in the systems area is increasing steadily.

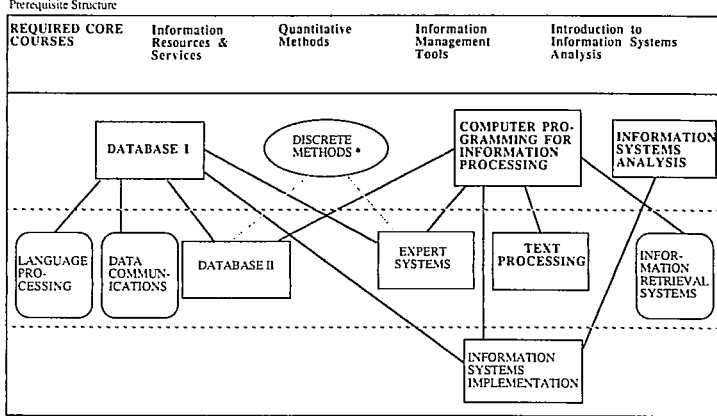
Interestingly, many students in the masters program perceive themselves as either "systems" or "library" students. There has been some pressure from them to divide the program along these lines. Those planning for careers in information resource management are the centralists making greatest use of all the school has to offer in library science, information science, information management, media production, and information systems.

Other Effects of Recent Curricular Innovations

Undergraduate courses that have graduate analogues can be taught by teaching assistants, usually Ph.D. students, who have had the appropriate graduate courses. Thus the introduction of the undergraduate program has provided both funding and teaching experience for many graduate students.

The innovations in curriculum have spurred faculty development also. Since it is a College policy that all faculty will teach at both the graduate and undergraduate levels, all have had to rethink the content and methods of course material for the previously unknown and markedly different undergraduate audience. As a result, a great deal of experimentation is currently taking place with new ways and means of presenting course material. Use of technology in all aspects of this effort is being encouraged.

The establishment of the undergraduate program enabled CIS to increase faculty size. In keeping with the College's tradition, an interdisciplinary group has been sought. Of the current 16 full-time faculty members, eight have doctorates in library and/or information science. The doctorates of the other eight are in psychology, history, philosophy, anthropology, computer science, communications, and engineering. Not only has the faculty grown, it has become a mini-university with members who can relate well to their counterparts in the rest of the university.



Other Courses for Information Systems Managers
 INFORMATION SERVICES IN ORGANIZATIONS
 MANAGEMENT INFORMATION IN ORGANIZATIONS
 INFORMATION CENTER MANAGEMENT
 INFORMATION ETHICS
 THE INFORMATION INDUSTRY
 PLANNING FOR AUTOMATION*
 INTRODUCTION OF INNOVATION TO AN INFORMATION SYSTEM

Other Courses for Information Systems Designers
 COGNITION & INFORMATION RETRIEVAL
 EVALUATION OF INFORMATION SYSTEMS
 ABSTRACTING AND INDEXING
 SURVEY RESEARCH
 OFFICE AUTOMATION
 USER INTERFACES
 ONLINE BIBLIOGRAPHIC SEARCHING COURSES
 INTRODUCTION TO PROLOG*

FIG. 1.—Drexel CIS graduate courses in the information systems area

In order to make the undergraduate program a success, the CIS faculty had to become more involved in the content and procedures of courses offered elsewhere in the university. The computer science courses required by CIS had to be coordinated with the prerequisite structure of the computer science curriculum. In addition, CIS requested a new discrete math course from the Department of Mathematics and Computer Science, and made requests concerning the content of existing logic, cognitive psychology, and software psychology courses taught by the College of Humanities and Social Sciences. CIS is currently working with the College of Business and Administration to dovetail both graduate and undergraduate offerings in Management Information Systems (MIS).

The contacts of CIS's multidisciplinary faculty and CIS's newly required coordination with the rest of the university are involving the college more in the life of the university. The College of Information Studies is physically removed from the rest of the university and housed in its own building which includes faculty and administrative offices, classrooms, resource center, canteen, and student study areas. So long as CIS offered only graduate programs, there was relatively little interaction between the college and the rest of Drexel.

With the introduction of the undergraduate program and the coordination of its offerings with those of other Drexel departments, CIS has become more visible within the university. Units of the university that previously were unaware of what we have to offer, now come to us with appropriate projects. While other effects of the recent curricular innovations are certainly important, in years to come the College of Information Studies may find the most significant effect has been to promote its mission within the university: "to serve as the primary focus for information study."

References

1. Mission statement approved by the CIS Faculty, February 1988.
2. Quoted from the course objectives section of the detailed description of the course, Information Resources and Their Use. The description was written by T. Childers and approved by CIS faculty, November 1985.
3. *Drexel Institute of Technology Bulletin: Graduate School of Library Science*, 39(7):14-15, 1962.
4. *Ibid.*: 18-22.
5. *Drexel Institute of Technology Bulletin: Graduate School of Library Science*, 40(5):14-29, 1963.
6. *Drexel University Graduate Bulletin*, 46(1):143-159, 1970.
7. Garrison, G. "Developing an Undergraduate Degree Program in Information Systems: The Drexel Experience." In Gardner, R. K., Ed.: *Education of Library and Information Professionals: Present and Future Prospects*, Littleton, CO: Libraries Unlimited, Inc.; 1987, pp. 71-82.
8. *The DPMA Model Curriculum for Undergraduate Computer Information Systems*. Park Ridge, IL: Data Processing Management Association; 1985.
9. "Information Systems Curriculum Recommendations for the 80s: Undergraduate and Graduate Programs." *Communications of the ACM*, 25:781-805; November 1982.
10. Strong, G., Woodward, D., and Dehdashti-Jones, P. "An Information Systems Curriculum: an American Experiment," In: Buckingham, R. A., Ed., *Information Systems Education: Recommendations and Implementation*, Cambridge: Cambridge University Press; 1987, pp. 204-214.
11. This version of this portion of the MS curriculum was approved by the CIS Coordinating Group, December 1987. Only courses in bold boxes were available in 1986-1987. Courses in rounded boxes were available to undergraduates before they were added to the graduate curriculum. Workshops, Discrete Methods, Quantitative Methods, and Information Management Tools are two-credit courses. All others are four-credit courses. Sixty credits are required for an MS.
12. Please note: this article does not contain a complete listing of Drexel CIS courses. For information about Drexel CIS graduate and undergraduate courses please write to CIS, Drexel University, Philadelphia, PA 19104.