ABSTRACT

Since 1986, the Organizational Systems Research Association (OSRA) has published model curricula for organizational and end-user information systems education at the college level. This year OSRA has published the third revision to the curriculum, taking into account changes in technologies and the workplace since the last revision. This paper presents an overview of the new curriculum, including descriptions of the required and optional coursework.

Keywords: information systems curricula, end-user information systems, organizational information systems, information systems pedagogy

INTRODUCTION

Information systems educators realize that the development and design of undergraduate curricula is always an evolutionary process. This is especially the case in the field of organizational end-user information systems (OEIS), which has undergone tremendous change since 1986 when the first OEIS Model Curriculum was released by the Organizational Systems Research Association (OSRA). Since that time, not only has the technology evolved exponentially, but workplace requirements have changed with the shift from the information era into today’s global, knowledge economy.

To assist collegiate educators in updating curricula and programs in end-user information systems, the new 2004 model curriculum is provided as a framework. The goal of the undergraduate curriculum model is to help collegiate educators design or redesign a program that prepares information technology professionals who have the skills and knowledge necessary to make quality decisions regarding the effective use of technology in the workplace. The Organizational & End-user Information Systems Curriculum Model for Undergraduate Education in Information Technology (1) emphasizes technology as an enabler for achieving organizational goals and maximizing individual employee performance. The curriculum gives attention not only to the technical, but also the managerial and organizational issues that knowledge workers will need to address in the global workplace. Earlier versions of this framework have been used as a guide by many university faculty to design programs that prepare end-user support personnel for non-programming related information technology (IT) positions. The reengineered version continues to incorporate many of the foundational components of OEIS that were in both the original (3) and revised (2) models. Additional course modules and content have been included that reflect changing trends of a digital, knowledge-based economy, including work processes, customer expectations, work styles, and work group requirements.
The new curriculum is designed to prepare graduates for entry-level non-programming-related positions in end-user information systems, e.g. technology coordinator, knowledge management specialist, business analyst, human engineer, desktop computer support, help desk administrator, software trainer, project manager, network administrator, Web developer, technographer, and other emerging IT positions.

The major objectives of the OEIS model curriculum are to prepare students to become professionals and active members of society with a foundation in information management and end-user information systems, including software acquisition, installation, training, and end-user support for multiple occupations in an information intensive, technological workplace. Specific objectives of the curriculum content are to develop graduates and future knowledge workers with the competencies to

- assess the need for, implement, and evaluate information technologies for the desktop environment to meet changing workplace requirements in a knowledge-based economy;
- assess the need for, design, implement, and evaluate technical training programs for business professionals and knowledge workers in organizations;
- analyze the needs of end-users in a variety of business functions and recommend OEIS solutions to improve performance;
- assess the need for, implement, support and evaluate networking environments;
- apply information technology to support workplace performance at all organizational levels; and
- analyze comprehensive IT cases related to problems and issues associated with organizational and end-user information systems.

As shown in Figure 1, the model curriculum provides a modular framework of core, optional, and recommended courses for the upper division level of undergraduate university course work. The model assumes a general education component as well as the standard common body of knowledge courses typically required by colleges of business, including management information systems, organizational behavior, and business communication. An understanding of global context and ethics, as well the influence of political, social, and legal issues, are essential elements that should be integrated into the curriculum framework.

The Organizational & End-user Information Systems Curriculum Model for Undergraduate Education in Information Technology is sponsored by the Organizational Systems Research Association (OSRA), an international research association that seeks to advance research and education in information technologies, learning and performance. The curriculum was developed by a national task force of university educators and IT professionals who hold OEIS related degrees. Members of the task force consulted with regional business owners and IT managers to assess the added value OEIS graduates could bring to the work environment.
Figure 1
ORGANIZATIONAL & END-USER INFORMATION SYSTEMS CURRICULUM MODEL

General Education
College of Business Prerequisite Courses

College of Business Professional Core

End-User Application Development

CORE

OEIS 1 Organizational & End-user Information Systems

OEIS 2 Computer User Support

OEIS 3 Assessment Design Implementation and Evaluation

OEIS 4 Technical Training & Delivery Methods

OEIS 5 Telecommunications & Networking Foundations

OEIS 6 Cases in Information Technology

OEIS 7 Internship

OPTIONAL COURSES

OEIS 8 eBusiness & Web Technologies

OEIS 9 Collaborative Technologies & Knowledge Management

OEIS 10 Network Administration

OEIS 11 Operating Systems

OEIS 12 Information Systems Security

OEIS 13 Special Topics

Symbols:
- □ Core Course
- ○ Optional Course
- ◆ Highly Recommended Course
Comparing the new version of the curriculum to the previous versions, the new one has seven core courses, including a telecommunications course and an internship not present in the cores of the previous curricula. A course on information and media management and one on business process redesign were eliminated. Five new electives were added, including computer user support, information systems security, web technologies and e-commerce, collaborative technologies and knowledge management, and operating systems.

Recognizing that course titles, content, and levels will differ somewhat from one institution to another, the OEIS model curriculum provides a framework and outline for each course that institutions can adapt to their own missions and needs. The model’s developers stressed the need for flexibility in applying the model and the need to emphasize program outcomes over specific course titles. Descriptions for each of the courses in the curriculum follow.

COURSE DESCRIPTIONS

OEIS 1- Organizational and End-user Information Systems

An overview of organizational and end-user information systems (OEIS) technologies, business processes, and worker performance, this course emphasizes the methods used to plan for and implement information technologies in the workplace. This course discusses advances in information systems hardware and software, emphasizing applications designed for technology end users. The course stresses understanding end-user needs and how to select or design systems to address those needs. Work flow and systems analysis methodology, work (re)design, organizational change, systems implementation, and management issues are covered. Basic computer literacy is assumed. As an introduction to the OEIS curriculum, this course provides an overview of course content covered in depth in future courses.

OEIS 2- Computer User Support

This course introduces the responsibilities of a computer user support specialist and develops skills for microcomputer troubleshooting. Students develop the skills necessary to work with help desk and support center operations to fulfill end user support needs. Students examine how to support and communicate with non-computer professionals. They also use a variety of software, including remote management tools to evaluate support applications, call tracking software, and programs to support the statistical analysis of calls/issues. Students develop problem-solving skills and install, configure, and troubleshoot microcomputer hardware and software. The prerequisites are computer literacy and demonstrated skills in using hardware and application software.

OEIS 3- Planning, Design, Implementation, & Evaluation

This course covers the four stages of OEIS development: assessment, design, implementation, and evaluation. Students learn methods and procedures that empower them to define and solve large-scale OEIS problems or address new opportunities. In studying the integration of hardware/software into jobs and the work environment, the course will give attention to various organizational development and management factors including strategic planning, techniques for developing ROI, planned change strategies, human factors, and job redesign. Students will
complete a systems analysis and design proposal with special attention given to inter-organizational goals. The prerequisite is OEIS-1.

OEIS 4- Technical Training & Delivery Methods

This core course builds upon skills and knowledge acquired in OEIS 1, 2, and 3. Students briefly overview change management, learning, and training theory in conjunction with technical training practices. These training practices are supportive of and conducive to organizational and end-user information systems implementation where OEIS tools are to be integrated into the work environment. Students focus on the design, development, and delivery of technical training. Students investigate and apply delivery methods including both traditional and state-of-the-art techniques. Planned change strategies (including addressing resistance to change) for technology implementation are also addressed, along with the application of relevant theories and evaluation of technical training effectiveness.

OEIS 5- Telecommunications & Networking Foundations

This course provides foundation information and skills relating to telecommunications and networking in the business environment, including conceptual information, telecommunication applications, networking fundamentals, and the use the Internet/intranets. Management issues and practical applications are an integral part of this course.

OEIS 6- Cases in IT

As a capstone course, this class involves the analysis, synthesis, evaluation, and application of advanced concepts, theories, principles, and skills associated with information technologies through case studies of the development of solutions to business problems and the redesign of business processes. The course is ideally taken in the student's last term before graduation. The prerequisites are OEIS 1 through 5.

OEIS 7- Internship

This course is designed to provide the senior-level student experiential learning related to information technology in an approved on-campus or off-campus site. Students may perform information systems trainer/consultant and/or end-user support duties. Students will meet periodically with the instructor to discuss problems and issues relevant to the area of organizational and end-user information systems. Compensation may or may not be granted for the internship/practicum.

OEIS 8- eBusiness & Web Technologies

This optional course or course stream is dedicated to investigating the implementation and administration of Web-based applications for non-profit and for-profit organizations in which e-business has become an integral part of the business model. It will provide the students with a foundation in the fundamentals of evolving Internet technologies and Web authoring using currently popular Web development software. Topics include e-business models and strategies, intermediate and advanced HTML, design principles of hypermedia, Website hosting and setup
procedures, Web server administration, information security, Internet protocols, XML, dynamic PHP/MySQL Web content driven by back-end databases, and streaming media. The students will apply the knowledge and skills learned to create or redesign actual e-business websites. The students are required to publish their projects on the Internet and ensure that all features and functions are properly working.

**OEIS 9- Collaborative Technologies & Knowledge Management**

This course is designed to provide the senior-level OEIS student with an introduction to group decision support systems, electronic meeting management, desktop video conferencing, and other groupware applications. Students will be introduced to concepts fundamental to an understanding of groupware tools and various collaborative technologies for enhancing group processes and computer-mediated communication in today’s digital economy. The course addresses a wide range of topics including the implementation and design group support systems (GSS), electronic facilitation, as well as GSS as an enabling technology for business process reengineering, knowledge management, and collaborative learning. Special emphasis will be placed on using groupware technologies and systems to create, store, and distribute explicit and tacit knowledge within contemporary organizations.

**OEIS 10-Network Administration**

This course is designed to develop senior-level OEIS students’ advanced network administration skills. Both client and server applications will be dealt with and a strong emphasis will be placed on network operating system software. Students will also be exposed to multi-vendor networking topics. Specific course topics will include setting up and configuring Web and e-mail servers, Web site security using secure sockets layer, the domain name system, the dynamic host configuration protocol, the Windows Internet naming service, remote access, Internet protocol (IP) routing, IP security, network address translators, and other core networking/internetwork applications.

**OEIS 11- Operating Systems**

This course will provide the theoretical foundation and practical skills required to install, troubleshoot, maintain, and support various operating systems. A thorough survey of personal computer and intermediate server operating systems available today will be provided, including Windows, Unix, Macintosh, and DOS. Topics include their functional similarities and differences, file management distinctions, installation procedures, printer and other peripheral device management, interoperation with legacy systems, maintenance, backup operations, and troubleshooting methods.

**OEIS 12- Information Systems Security**

This course is an introduction to end-user systems security from a management perspective. The course emphasizes the methods for the management of information security through the development of policies, procedures, audits, and logs. It also provides an understanding of the methods used for identifying threats, vulnerabilities and common human errors, as well as
analyses of the legal, ethical, and privacy issues in information systems. It also discusses emerging technologies related to systems security.

OEIS 13- Special Topics

This course is the study of advanced concepts and issues relevant to OEIS. Content will vary according to the needs and interests of the students and the interests and expertise of the faculty. Selected topics should emphasize current technological advances and OEIS management concerns. Prerequisites: Generally, students should have completed the core OEIS courses. Specific prerequisites should be established by the instructor(s) when the course is designed.

SUMMARY AND CONCLUDING REMARKS

Organizational and end-user information systems curricula have undergone an evolution in response to the unbridled growth of IT innovations. Certainly, the challenges of change in this knowledge era are upon us as information systems academicians. Introducing this change into our curricula is an exciting and rewarding, yet formidable, venture. Our students, whose lives and careers are affected by our guidance, must be equipped to enter a global workforce with an every-evolving skill set that includes knowledge beyond a mere conceptual understanding of end-user information systems. These future knowledge workers will be competing for IT positions in global enterprises of the 21st century that are increasingly more dynamic, mobile, and multicultural. Our OEIS undergraduates will become employed in learning organizations, working in international teams, and will require an understanding of knowledge management, e-business transformation, information systems security, networking technologies, and emerging technologies.

As IS Faculty review the new OEIS curriculum, which is suggested as a track or emphasis in a management information systems program of study, we hope the model presented here will serve as a valuable resource. The model was developed by scholars and professionals like you who work in the field as information systems practitioners, trainers, consultants, and educators. As we address the demands of an increasingly competitive and turbulent IT environment, the curriculum model will serve as a resource to colleges and universities desiring to adopt and implement end-user information systems curricula. Additional information, including the full curriculum and references, is available online at http://www.osra.org.

REFERENCES