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Special Topics Courses in Information Systems: Current Uses

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Abstract: As faculty and curriculum developers we were interested in how other schools utilize the special topics course in Information Systems. A review of the literature revealed no articles that specifically addressed the issue. To gather data, a survey of the IS programs at colleges and universities in the United States was conducted. It was found that 35 percent of the respondents offered one or more special topics course. The most popular categories of courses were: E-commerce, Security, Data Warehouses, and Human Computer Interaction. Nineteen courses were grouped into a category called Other Unique Descriptions. Somewhat surprising was that not one school reported offering a special topics course on Web 2.0 and its related technologies. Conclusions and future research are discussed.

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Special Topics Courses in Information Systems: Current Uses

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ABSTRACT

As faculty and curriculum developers we were interested in how other schools utilize the special topics course in Information Systems. A review of the literature revealed no articles that specifically addressed the issue. To gather data, a survey of the IS programs at colleges and universities in the United States was conducted. It was found that 35 percent of the respondents offered one or more special topics course. The most popular categories of courses were: E-commerce, Security, Data Warehouses, and Human Computer Interaction. Nineteen courses were grouped into a category called Other Unique Descriptions. Somewhat surprising was that not one school reported offering a special topics course on Web 2.0 and its related technologies. Conclusions and future research are discussed.

Keywords: special topics courses, curriculum development, pedagogy

1. INTRODUCTION

Many areas in the field of Information Systems (IS) are undergoing rapid, continuous change. In this environment, educators and curriculum developers are faced with two related problems. On the one hand, they must identify the aspects of IS that have been relatively constant over time and ensure that those aspects are part of the core curriculum for IS majors. On the other hand, they need to find a way to continuously incorporate new materials related to emerging technologies.

The first problem has been extensively addressed by a group of professional organizations. The Association for Computing Machinery (ACM), Association for Information

Systems (AIS), and the Association of Information Technology Professionals (AITP) worked together to produce a Model IS Curriculum in 1997 (Gorgone, et.al., 2002). Their model was most recently updated in 2002 (Gorgone, et.al., 2002). The 2002 model has proved to be a useful tool (Dwyer and Knapp, 2004) and has become the basis for accreditation of undergraduate programs of information systems. Many other studies have also focused on the structure of the core curriculum for IS programs (Ehie, 2002; Gambill, Clark, and Maier, 1998; Gill and Hu, 1999; Grossman, 2007; Landry, Pardue, Longenecker, and Feinstein, 2003). Some researchers have focused more narrowly on the inclusion of special technical skills from industry (Koong, Liu, and Liu,

2002; Moshkovich, Mechitov, and Olson, 2005; Peslak, 2005; Woodward and Young, 2007). In sum, the issue of a core curriculum for IS programs has generated an extensive stream of research.

The second problem, continuously incorporating material related to emerging technologies, has received much less attention. One way faculty address the problem is to refresh the core courses they teach with new materials. However, some emerging topics require more time to cover in-depth and cannot simply be added on as separate lectures to an existing core course. A more thorough way to address the problem, one that allows in-depth coverage, is to offer a special topics course. A special topics course is usually assigned a single course number (e.g., IS3910), but subjects may change from semester to semester. Based on our academic experience, the authors believed that the use of special topics courses in IS programs was fairly typical, and we were interested in how other schools use such courses. A review of the literature revealed no articles that specifically addressed the issue of special topics courses in IS.

The purpose of this study is to examine the extent to which special topics courses are utilized in IS curriculums, and to identify the topics currently being offered in these courses. The goal is twofold: (1) establish a baseline from which comparisons can be made via longitudinal studies, (2) provide faculty, administrators, students, curriculum developers, and interested industry professionals information about special topic offerings in the 2007-2008 academic year for schools in the United States. The following sections present the study's method, results, and conclusions.

2. METHOD

The data we sought was not directly available at the college or university web sites. Special topics courses, like other courses, are typically listed on a school's web site. However, unlike other courses, the topic descriptions of these courses often change between academic terms, and the current topics are usually not described on the web site. To collect the data, we determined that either the IS department head or IS secretary would be the best point of contact. A brief

one-question e-mail survey was used to collect data from IS programs at colleges and universities in the United States.

Scope and Sample

To compile a list of e-mail addresses for IS department heads and/or secretaries we started with a list of home page URLs for IS departments that is maintained by Ron MacKinnon (2007) of Georgia Southern University. The page is a division of ISWorld Net. The list provides the widest scope possible, because it includes IS programs in both accredited and non-accredited schools in the United States. We thought this was the best approach given the exploratory and descriptive nature of the research.

The list includes names of universities and the URLs for their IS departmental web sites. We visited all 276 web sites and recorded the e-mail address and name of the department head if one was given, and a secretary if one was given. In some cases we were able to record an e-mail address for both. In rare instances, where neither a department head's nor secretary's address was available, we recorded the e-mail address of an unspecified contact person for the IS program. This resulted in a database of one or more e-mail addresses for each of the 276 schools.

Survey Question

The survey was limited to one question in an effort to help maximize the response rate. We decided that the one question could be sent as a simple query and not be presented as a standard survey. The one question was composed and pilot tested with a few colleagues. The initial question was revised based on their feedback. Using the database of e-mail addresses we had gathered, and the mail merge capabilities of MS Word, we sent the following e-mail to all 276 schools on April 20, 2007:

"Will your department offer any special topics course(s) during the Fall 2007 or Spring 2008 semesters? If so, would you please briefly describe the topics to be covered?"

The majority of results are discussed below in a separate section. However, a brief discussion here will help to clarify the methods section. The response rate from the first e-mail was excellent with 231 of the 276 re-

cipients (83.6%) responding. Unfortunately, many of the responses did not result in meaningful data. That is, only from the respondents who answered "Yes" or "No" were we able to collect meaningful data. There were 32 "Yes" responses and 58 "No" responses from the first mailing, resulting in a 32% effective response rate. Because Gmail was used to send the survey, we were able to create customized tags to help categorize the responses. All responses were read and tagged. The six tags found most useful were the following:

1. Yes - they were offering a special topics course and the topic was described
2. No - they did not offer topics courses, at least not during Fall 2007 or Spring 2008
3. Asked a Question - e.g. what is a special topics course
4. Referred - they referred us to another person for the information
5. Undeliverable - probably a bad e-mail address
6. Other - included auto responses and others that did not fit the above categories

Table 1
Categories of Responses from the First e-Mail (n=276)

Category	Total
Yes	32
No	58
Asked a Question	38
Referred	49
Undeliverable	39
Other	13
Non-Responders	47

In an effort to increase the effective response rate, we took additional steps. First, for the responses that were tagged "Asked a Question," one of the researchers, a graduate student, replied with an e-mail that addressed the questions asked. In addition, on May 2, 2007, nearly two weeks after the initial e-mail was sent, the following e-mail was sent to those tagged "Referred" and to the "Non-Responders" from the first e-mail.

"I'm a student interested in special topics courses in Information Systems. By special topics courses, I mean courses that change topics between academic terms to

focus on emerging technologies, innovative uses of technology, etc.

Will your department offer any special topics course(s) during the 2007-2008 academic year? If so, would you please briefly describe the topics to be covered and whether they are at the undergraduate or graduate level?

Thank you in advance for your help."

The responses were once again read and tagged appropriately. A final total of 42 "Yes" responses and 79 "No" responses were received from the 276 schools in the sample for an effective return rate of 43.8%, which was considered good for survey research.

3. RESULTS

The collection of data was carried out in the spring of 2007. Of the 276 schools in the original sample, meaningful data was obtained from 121. Of those 121 schools, one or more special topics course was offered by 42 (35%), while 79 schools (65%) did not plan to offer a special topics course for the 2007-2008 academic year. Among the schools that did offer special topics courses, 26 (62%) offered only one such course, 9 (21%) offered two courses and 7 (17%) offered three or more special topics courses.

The descriptions of the special topics courses varied from one or two paragraphs to just a few words. The most practical way to present the descriptions was to extract a few key words from the longer descriptions and compile them into a table (see Appendix 1). To describe the data in a more meaningful fashion, courses were grouped into categories.

The most popular category, with 11 special topics courses being offered, was **E-Commerce**. Some of these appear to be managerial in nature (e.g., E-business), while several are more technical (e.g., Introduction to Flash, Web Programming, etc.). This finding was not too surprising because, even though many IS undergraduate programs have included an E-commerce course into their core curriculum, the breadth and depth of the subject is extensive and cannot be fully covered in a single course.

The second most popular category was **Security**. Ten schools offered such a course.

The topic is certainly salient in today's world, and complex enough to require special individual courses to cover it adequately. The third most popular special topics course was **Data Warehouses** with six schools offering a course in this category. Other categories with two or more courses included **Human Computer Interaction** with four courses, and **Six Sigma**, **Disaster Recovery**, **.Net**, and **Enterprise Resource Planning** with two courses each. The **Other Unique Descriptions** category included nineteen various special topic descriptions.

4. CONCLUSIONS

This study found that the use of a special topics course in IS programs is fairly typical, with 35% of the 121 responding schools indicating that they offer one or more such course. When categorized, four popular categories emerged with **E-commerce** being the most popular.

In the undergraduate IS Model Curriculum of 2002, a recommendation was made to introduce E-commerce as a course in the core (Gorgone, et al., 2002). It may be surmised that some schools that have not changed their core curriculum to include such a course are using a special topics course to serve a similar purpose. The presence of courses with descriptions like "Electronic Business" and "E-Commerce" support such a conclusion. On the other hand, some courses in this category appear to be more narrowly focused than a core course and more technology specific (e.g., Introduction to Flash Online). The category of **Security** was a close second in popularity. Perhaps this can be viewed as a leading indicator that a course in security will be included in the core curriculum of the future.

At several schools, the other two most popular categories, **Data Warehouses** and **Human Computer Interaction** are also enjoying the in-depth coverage that a special topics course affords. On the other hand, one of the more surprising findings was that more universities were not offering special topics courses on such things as Web 2.0 and Knowledge Management. Web 2.0 has received a large amount of media attention, and recently IS researchers have begun to study the associated customer centric technologies such as Wikis (Wagner and Majchrzak, Winter 2006-2007). Yet, not one

school in the current study reported having a special topics course dedicated to Web 2.0 and its related technologies. Similarly, Grossman (2007) has noted the sluggish adoption of knowledge management into mainstream academia, while at the same time pointing out the increasing demand for such skills in the marketplace. Additional research will be needed to understand these and other issues related to special topics courses and their role in IS curriculum.

The finding that 65% of the responding schools did not offer a special topics course was interesting. One plausible explanation is that faculty may lack specialized knowledge in the most popular areas, e.g. computer security. Also, depending on the emphasis of the university on research, faculty may focus on work that leads to publications versus curriculum development. Further research may lead to other explanations as well.

One area for future research would be to conduct interviews with professors and curriculum developers who are responsible for special topics courses. Only by asking them, can one understand in more depth how they utilize such courses. For example, how often do they change topics? Do they use such courses to fill perceived gaps in the core curriculum? Or, are they used as a flexible format for offering topics in emerging technology? How do they go about choosing which emerging technology to cover? Longitudinal research will also be helpful. A similar survey could be conducted that asked respondents to provide a list of special topics courses offered over the last five years. It would be interesting to see, over time, how the contents of special topics courses change at schools in the U.S. This study can serve as a benchmark for such research. One may find that the most popular special topics courses are leading indicators of change in the core curriculum of IS programs. Another avenue of research is a cross-cultural study of special topics courses offered at schools in other countries. It may be interesting to know what the most popular special topics courses are at schools in India and other countries where outsourcing of information systems is prevalent. Such information may inform our own curriculum development.

Developers of IS curriculum who are considering the development of special topics

courses may find the results of this paper useful. Although several factors affect what topics are offered, what other institutions are offering is additional information for consideration. For those with an interest in the evolution of IS curriculum, this study speculates that special topics courses may be leading indicators of what will be core courses of the future.

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APPENDIX 1: SPECIAL TOPICS COURSES OFFERED FALL 2007-SPRING 2008	
<u>Category</u>	<u>Course Descriptions</u>
E-Commerce	Electronic Business E-Commerce Web Fluency Web Application Technologies Industry Web Project Introduction to Flash Online Voice/Data/Video Online Web Programming (3 courses with this title) E-Business *
Security	Information Security (2 courses with this title) Information Audit and Control Computer Forensics Encryption Web Services and Security Advanced Topics in Computer Security * Computer Security * IS Audit and Control * Database Security *
Data Warehouses	Business Warehouse Developer Data Warehouse and Business Intelligence (2 with this title) Data Warehousing (2 with this title) Business Warehousing *
Human Computer Interaction	Human Computer Interaction (2 with this title) Human-Computer Issues * Computer Human Interface *
Six Sigma	Quality and Six Sigma (2 with this title)
Disaster Recovery	Business Continuity Planning * Disaster Recovery *
.Net	C# and .Net (2 with this title)
Enterprise Resource Planning	ERP Systems (2 with this title)
Other Unique Descriptions	Geographic Information Systems Computer Game Development Parallel Programming Integration Methodologies and Tools Systems Development using RAD Tools Clinical Information Systems Artificial Intelligence Service-Oriented Computing IT Architecture with IBM Systems Creativity and IT Customer Relationship Management * Knowledge Management * Data Mining * Managing Open Source * Network Embedded Systems * Innovation Management * Project Management and Management of Change * IT for Strategic Enterprise Management * Social and Economic Impacts of IS *

*Courses offered at the graduate level only