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## Tailoring an MIS Degree: Incorporating Current Skills in an Accelerated Format

**Kurt Jordan**

Calumet College of St. Joseph  
Whiting, IN 46394 USA

**Darren Henderson**

Calumet College of St. Joseph  
Whiting, Indiana 46394 USA

**George Schaefer**

Calumet College of St. Joseph  
Whiting, Indiana 46394 USA

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# Tailoring an MIS Degree: Incorporating Current Skills in an Accelerated Format

Kurt Jordan  
kjordan@ccsj.edu

Darren Henderson  
darrenh@ccsj.edu

George Schaefer  
gschaefe@ccsj.edu

Computer Information Systems  
Calumet College of St. Joseph  
Whiting, Indiana 46394, USA

## ABSTRACT

The popularity of outsourcing, off-shoring, and contracting as sourcing methods have generated many articles, news stories and prophecies about the fate of the IT profession. Information Systems educators are struggling to identify rapidly changing skill requirements and then modify their curriculum appropriately. This paper describes an attempt to address these two issues in the context of a Management Information Systems Degree.

**Keywords:** Management Information Systems, management, outsourcing, sourcing strategies, legal contracts

## 1. INTRODUCTION

Today, outsourcing and contracting are the norm in IT sourcing strategies. This trend has left many professionals and educators concerned. In spite of the demand for software development workers not completely going away (Jordan, 2005), many IT educators are still wondering what skills are currently in demand in their service area. I would argue this concern will probably be with IT educators forever. It's the nature of the industry.

One area where most can agree that skills are not easily out-sourced is in IT management. Much current research exists that suggests the number of job openings for technical managers will increase significantly in the next several years.

## 2. SKILLS IN DEMAND

The Bureau of Labor Statistics indicates that employment of computer and information systems managers is expected to grow faster than the average for all occupations through the year 2014, enjoying over 36% growth rate during that time (BLS, 2005).

The Gartner Group published recent research that indicates soft skills, such as business management, technology management, negotiation, managing vendors, and integration management, will take over in the IT department, representing nearly 70 percent of in-house IT skills by 2006 (Morello, 2003).

A recent Chicago Tribune Employment Outlook report (Jeffrey Steele, January 1, 2006) indicated that the nine-county Chicago metropolitan area is the third largest economy in the nation. The report notes the Illinois Center for Tax and Budget Accountability

recognizes this metropolitan area as having the most significant job growth in the next ten years out of the ten economic development regions in Illinois. The report says that Computer and Information Systems Managers are among the positions that offer the greatest openings in 2006.

A 2005 article by Network World magazine discusses an impending IT staff shortage caused by a nation-wide decline in enrollments in computing-related fields, and the beginning of the retirement of the first wave of baby boomers. In the article, research by the Gartner Group is cited which predicts that in five years, 10 to 15 percent of all IT workers will drop out of the field altogether (Paul, 2005). These events together will cause an increase in demand for IT staff.

CIO magazine yearly research reports show that management skills are one of the most desired skills – 2<sup>nd</sup> in demand after application development, for the last two years. Table 1 shows figures for the years 2004 and 2005

Skill	2004	2005
Application Development	58	50
Project mgmt	57	45
Database	43	30
Security	42	31
Networking	35	35
Help desk/Tech support	32	25
web development	31	24
web services	23	15
open source	11	9
Other	11	11

**Table 1** Percent of respondents who indicated the skill was in demand in their organization for 2004 and for 2005 (Source: CIO Research Reports 2004, 2005)

In the 2005 CIO survey, 61% of the respondents indicated they were hiring for these positions within the next 12 months. To meet this demand, the IT profession needs people with key management skills. The skills in question should reflect current management techniques used in the industry

such as outsourcing and contracting. To address these needs Calumet College of St. Joseph designed a new bachelor’s degree in Management Information Systems

### 3. NEW MIS DEGREE

The MIS degree will generate competent individuals that are well-prepared for an entry-level management position in the Information Technology profession. Graduates will have the skills to manage the analysis, design and deployment of information systems, manage independent contractors and consultants that provide much of today’s technology-related expertise, and make procurement and outsourcing decisions. The MIS degree will be offered in an accelerated format. Details of this format are discussed in a later section.

The outcomes of the degree are listed below.

1. Demonstrate knowledge of computer information systems development and management and be able to integrate this knowledge in a variety of commercial, business and other settings
2. Demonstrate knowledge of modern database technology and use, including normalization and query languages
3. Demonstrate knowledge of current computer hardware and software, including telecommunications, networking, electronic commerce and expert systems
4. Identify, understand and be able to analyze important issues with regard to the societal impact of advanced and emerging computer information technologies
5. Be able to apply appropriate management processes, procedures, and techniques to answer questions and solve business-related challenges and problems
6. Demonstrate the capability to critically and reflectively respond to ethical issues in computer information systems, particularly questions of social responsibility and professional decision-making

### 4. WHY ANOTHER MIS DEGREE? DEGREE DIFFERENTIATION

With the large number of institutions already offering MIS degrees, one might ask if there

is room for yet another. What makes this one different?

Two characteristics differentiate this degree from the MIS degree offerings of local competitors in our service area. One is the accelerated format. This format will appeal to those who are interested in completing their B.S. degree as quickly as possible. Many persons with college credit have full-time jobs. The scheduling flexibility and convenience of the accelerated format appeal to these types of students.

The accelerated format has been shown to be a successful delivery method for other programs at Calumet College of St. Joseph. CCSJ has several accelerated degree options that have been in place for several years: Health Care Management, Organizational Management and Law Enforcement Management.

The other differentiating characteristic concerns material in two courses that are being developed specifically for this degree. The accelerated delivery method is discussed in the following sections. The impact of the two courses is discussed after the accelerated material.

## 5. ACCELERATED FORMAT

An accelerated degree allows students who are in the last two years of their bachelor's degree to finish their requirements in a shorted period of time: 18 months instead of two years. Instruction will be delivered in 14 courses over 18 months. Clusters of approximately 15 students will meet once a week for four hours for each course. Courses in the accelerated MIS degree will be a mix of technical and managerial courses.

The technical courses will provide graduates with enough knowledge to intelligently interact with technical workers and make informed decisions concerning technical matters.

Table 2 shows the technical courses in the degree.

### Technical courses

CIS 330 MIS Analysis and Design

CIS 333 Software Development

CIS 335 Relational Database Systems

CIS 431 Networking and Telecommunications

CIS 437 Electronic Commerce and the Internet

CIS 441 Security and Disaster Recovery

CIS 443 Decision Support and Expert Systems

**Table 2** Technical courses  
in new MIS degree

The management courses will provide graduates with training in managerial processes, procedures and techniques needed to be a successful and effective manager in today's highly competitive business environment.

Table 3 shows the courses with a management focus or perspective.

### Management courses

ORMN 431 Business Mathematics

ORMN 405 Dynamics of Organizational Behavior

CIS 338 Planning, Acquisition and Control of Information Systems

CIS 434 IT Project Management

ORMN 445 Essentials of Accounting and Finance for Managers

ORMN 443 Supervisory Management

PAR 350 The Law of Contracts

**Table 3** Managerial courses  
in new MIS degree

## 6. RELEVANT COURSE CONTENT

The second differentiating characteristic of this MIS degree in comparison to competing MIS degrees in the Calumet College service area is in the content of two of the courses. One of the courses, CIS 338 Planning, Acquisition and Control of Information Systems, addresses the plethora of choices that Information Systems managers have to sort through when making sourcing decisions. Whether to maintain an in-house stable of IT professionals, or to hire independent contractors, or to out-source are some of the decisions faced by today's technical managers.

The decision is not always easy or clear. Koch's article on how to outsource-proof your department describes some of the potential problems with outsourcing and how management sometimes discovers only after the fact that their perceptions of in-house IT concerning higher costs, lower productivity and inflexibility turn out to be wrong (Koch, 2004). Other research cited previously in this paper identifies sourcing and contractor management skills as being essential to IT managers.

CIS 338 presents the pros and cons for each of these sourcing strategies, and also presents the challenges of managing the interactions between in-house, contracted and out-sourced workers. The course description and outcomes are listed below:

This course introduces various methods of organizing Information Systems resources. Topics include centralized, decentralized and hybrid approaches, charge-back methods, planning techniques, out-sourcing and application service providers. Students learn how to answer the 'make or buy' decision concerning information systems resources.

Outcomes:

1. Describe the various ways that Information Technology resources can be organized
2. List the business trade-offs and ethical dilemmas inherent in the various methods of IS acquisition
3. Describe the different ways available today to acquire Information Systems
4. Contrast the advantages and disadvantages of charge-back methods for IT services
5. Explain the advantages and disadvantages of various personnel deployments
6. Explain why a certain acquisition approach is appropriate for a particular situation

The other course that differentiates this degree from others is PAR 350 The Law of Contracts. Some newer model curriculum drafts are beginning to include specific courses related to law and contracts (Gorgone, 2005).

PAR 350 provides critical skills that managers will need for writing, evaluating and ad-

ministering the contracts that are more frequently becoming part of current Information Systems solutions. The course description and outcomes are listed below:

This course covers the basics of contract law. Topics include contract formation, statute of frauds, damages, parole evidence rule, and assignments. Article 2 of the UCC is also covered. Students learn how to draft a contract.

Outcomes:

1. Understand the basic elements of a contract
2. List the rules of offer and acceptance
3. Draft a contract
4. Demonstrate the ability to formulate, review and find flaws in a contract
5. Explain exclusion clauses and disclaimers
6. Explain the importance of standard terms and conditions
7. Evaluate contract performance and damages for breach of contract

At the time this document was written, none of the other MIS degrees that were benchmarked as part of the research for this MIS degree explicitly mention concentrated study in these two areas of important skills that are used by today's IT managers.

PAR 350 The Law of Contracts is an existing course used in a paralegal program at Calumet College. Work is on-going with the paralegal faculty to develop a customized course for MIS students that covers other aspects of the law, such as patents, copyright and security issues.

## 7. CONCLUSION

It is difficult but necessary to look in the future to predict what skills will be in demand in time to modify IT curriculum so graduates can still take advantage of that demand. Gartner indicates that skills such as business process modelers, project leaders, security gurus, IT architects, risk managers, project managers, open source expertise, integration experts, client-site implementation engineers, wireless gateway engineers and relationship managers will probably not be off-shored (Hayward, 2004). Skills such as

sourcing strategies and contract management are needed by today's IT managers. This new MIS degree attempts to incorporate those skills with an accelerated format that will get students out in the work force in time to take advantage of the market demand.

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