# APPENDIX A

## MS/MIS Program Courses, Course Descriptions and Links to Computer Science CIP Codes

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<tr>
<th>Course</th>
<th>Course Description</th>
<th>Links to CIP Descriptions and Code(s)</th>
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| Advanced System Analysis & Design ISM 6124  | This course covers advanced topics of information systems development. Students learn to manage and perform activities throughout the information systems development life cycle. State-of-the-art system development processes, methods, and tools are presented | 1. apply programming and system analyst principles (11.0501)  
2. process and data flow analysis (11.0501)  
3. systems planning; human interfacing and use analysis (11.0401)  
4. user needs analysis and documentation (11.0501)  
5. cost-benefit analysis (11.0501)                                                                                         |
| Distributed Information Systems ISM 6225   | Analysis, design, implementation, and management of distributed information systems and networks.                                                                                                                | 1. aspects of operating systems and networks (11.0201)  
2. network management and control; network and flow optimization (11.0901)  
3. manage the computer operations and control the system configurations emanating from a specific site or network hub (11.1001)  
4. Includes instruction in computer hardware and software (11.0501)                                                        |
2. manage the construction of databases (11.0802)  
3. instruction in database theory (11.0802)  
4. database development (11.0401)  
5. data flow analysis ... and specification design (11.0501)  
6. user needs analysis and documentation (11.0501)                                                                     |
| Enterprise Information Systems Management ISM 6155 | Development of enterprise transaction processing applications using procedural or object oriented programming languages, relational database management, database sharing, CASE methodology and project management techniques. Students will work in groups on semester projects. | 1. systems planning and design; human interfacing and use analysis (11.0401)  
2. programming and systems analysis principles to the selection, implementation, and troubleshooting of customized computer and software installations across the life cycle (11.0501)  
3. user needs analysis and documentation (11.0501)  
4. cost-benefit analysis (11.0501)  
5. software components, algorithms, databases (11.0103)                                                                      |
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<tr>
<th>Course</th>
<th>Description</th>
<th>Related Courses</th>
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| Web Application Development     | The purpose of this course is two-fold: (1) to reinforce object-oriented concepts and (2) to expose students to web applications architecture and related concepts. Topics to be covered include database connectivity, multithreading, client server computing, Java server faces, Java beans and AJAX. Java will be used as a tool to explain various concepts. | 1. low- and high-level languages and program writing; and related aspects of operating systems and networks (11.0201)  
2. languages programming (11.0501)  
3. programming and debugging techniques (11.0501)  
4. emerging web technologies (11.0801) |
| Project Management.             | The objective of this course is to become familiar with fundamental issues for managing project management and to develop an understanding of the overall processes of dealing with competing demands in information technology environments. | 1. (IT life cycle) apply the methods and procedures of software design and programming to software installation and maintenance (11.0201)  
2. systems analysis principles to the selection, implementation, and troubleshooting of customized computer and software installations across the life cycle (11.0501)  
3. cost benefit analysis (11.0501) |
| Decision Support Systems        | Study of the principles of decision making and the human computer alliance with hands-on computer-assisted decision making for an organizational environment. Case studies and/or management games using micro-computers. |  

| Data Warehousing                | This course is designed for the MS graduate student and interested MBA students. The course covers the rapidly emerging data warehousing and data mining technologies that are likely to play a strategic role in business organizations. | 1. operational and warehouse modeling (11.0802)  
2. technical architecture (11.0802) |
| Data Mining                     | This course is designed for the MS in Information Systems graduate student and interested MBA students. The course covers the rapidly evolving data mining techniques that are becoming critical for customer relationship management and other applications | 1. use of analytical search tools (mining) (11.0802)  
2. solutions to business or research data (11.0103) |
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<th>Course Name</th>
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<th>Topics</th>
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| Software Architecture ISM 6221 (elective)                       | Software architecture has emerged as an explicit field of study for software engineering practitioners and researchers. In this course, we will investigate the growing literature on software architecture and understand the application of software concepts to the development of information systems. | 1. software components, algorithms and databases (11.0103)  
2. instructions in software design (11.0201)  
3. process and data flow analysis (11.0501) |
| Software Testing ISM 6145 (elective)                            | This course will survey and analyze the best practices in industrial testing groups and explore new ideas for improving the testing process. Students gain practical experience with both functional (black box) and structural (clear box) testing methods. | 1. application testing (11.0103)  
2. prototype testing (11.0202)  
3. installation and maintenance testing and documentation (11.0501) |
| International Aspects of Information Science ISM 6442 (elective) | Role of managers and information technology professionals in global business organizations and in deploying information systems to enable global operations.                                                                 | 1. process and data flow analysis.. (11.0501)  
2. user needs analysis and documentation (11.0501)  
3. program customization (11.0201) |
| Electronic Commerce ISM 6480 (elective)                         | This course provides a broad-based introduction to different facets of ecommerce, from both technical and managerial perspectives. Designing new e-commerce businesses as well as redesigning existing business to take advantage of e-commerce are examined. Specifically the course covers three areas: (1) e-commerce concepts, (2) e-commerce applications, and (3) e-commerce technologies. | 1. process and data flow analysis.. (11.0501)  
2. user needs analysis and documentation (11.0501)  
3. program customization (11.0201) |
| Enterprise Resource Planning and Business Process Management ISM 6930 (Special Topics) (elective) | This course introduces students to business processes management and re-engineering in the key functional areas of today’s global businesses. The course employs SAP as the instance of an ERP system. Students use SAP with a business case in order to understand both the development and use of an ERP as a tool for integration of business across functional units. | 1. process and data flow analysis.. (11.0501)  
2. user needs analysis and documentation (11.0501)  
3. program customization (11.0201) |
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<tr>
<th>Course Title</th>
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<th>Required Courses</th>
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| Information Security and Risk Management ISM 6930 (Special Topics) (elective) | The objective of the course is to introduce skills and knowledge on Information Security and IT Risk Management. The course is open to graduate students in all majors. Course objectives will be accomplished through two categories of information – (1) helping students develop technical skills to secure computer networks and (2) introducing frameworks to assess IT risk and implement IT general controls in a business environment. This course will attempt to add value by providing domain knowledge relevant to Information Security and IT Risk. Accordingly, the course will include class presentations and extensive hands-on projects on implementing firewalls, network scanning, UNIX STIG (Security Technical Implementation Guidelines), identifying software errors and documenting some key IT General Controls. Required project reports will help students improve their writing and documentation skills. | 1. security needs of computers and network systems (11.1003)  
2. risk assessment and policy analysis (11.1003)  
3. access and security system design (11.0802) |
| Managing the Information Systems Function ISM 6305 (elective) | An advanced study of information system management including system planning, project selection and management, and organizational information management policies. | 1. apply programming and system analyst principles…(11.0501)  
2. process and data flow analysis.. (11.0501)  
3. systems planning …; human interfacing and use analysis (11.0401)  
4. user needs analysis and documentation (11.0501)  
5. cost-benefit analysis (11.0501) |