1989

Master of Science Computer Information Systems
1989-1990

Nova Southeastern University

Follow this and additional works at: https://nsuworks.nova.edu/cec_coursecatalogs
Part of the Computer Engineering Commons

NSUWorks Citation
https://nsuworks.nova.edu/cec_coursecatalogs/138

This Course Catalog is brought to you for free and open access by the NSU Course Catalogs and Course Descriptions at NSUWorks. It has been accepted for inclusion in College of Engineering and Computing Course Catalogs by an authorized administrator of NSUWorks. For more information, please contact nsuworks@nova.edu.
MASTER OF SCIENCE IN
COMPUTER INFORMATION SYSTEMS

1989 - 1990

April 2, 1990 - June 22, 1990
July 2, 1990 - September 21, 1990

Holidays

May 28, 1990 - Memorial Day
July 4, 1990 - Independence Day
September 3, 1990 - Labor Day
Tuition and Fees

Tuition (per credit) $225
Application Fee (non-refundable) $30
Registration (non-refundable) $25
Late Registration Fee $30

Registration closes one week before the beginning of the term.

Refund Policy

First 2 weeks of class - 80% refund
Third week of class - 60% refund
Fourth week of class - 40% refund
Fifth week of class - 20% refund

Terms Begin

January
April
July
September

For information call: (305) 475-7563

Or write: Nova University
Center for Computer and Information Sciences
3301 College Avenue
Ft. Lauderdale, FL 33314
WHY THE M.S. IN COMPUTER INFORMATION SYSTEMS
PROGRAM IS RIGHT FOR YOU

* Fully accredited programs
* Part-time and full-time degree programs
* Designed to meet the needs of South Florida industry MIS professionals
* Evening classes
* Solid academic foundation with a practitioner's approach to technology
* Faculty: practicing professionals in information systems and computer science

Nova University is accredited by the Commission on Colleges of the Southern Association of Colleges and Schools to award bachelor's, master's, educational specialist, and doctoral degrees.
The Center for Computer and Information Sciences offers a graduate program leading to the degree of Master of Science with a major in Computer Information Systems. This program is designed to give the student a thorough knowledge of computer information systems through course work, basic and applied research activities, and specialized projects. The curriculum is consistent with recommendations for a model information systems graduate curriculum as outlined by the Association of Computing Machinery (ACM).

Current areas of specialization include:

- Program, Data & File Structures
- Operations Research
- Information Systems in Organization
- Database Management Systems
- Information and Systems Analysis
- Data Communications
- Modeling and Decision Systems
- Systems Design Process
- Information Systems Management
- Office Automation Systems
- Expert Systems
- Computer Security
- Human Factors

FORMAT: The Master of Science in Computer Information Systems Program operates on a 12 week term. Each three (3) semester credit course meets for four (4) hours per week for 12 weeks. All courses in the program are scheduled in the evenings or on Saturdays.
STUDENT CONDUCT

Students are expected to comply with the legal and ethical standards of the institution. Academic dishonesty and/or non-academic misconduct will result in disciplinary action. Specific instances of misconduct include, but are not limited to, cheating, plagiarism, knowingly furnishing false information to the institution, and forging or altering institution documents and/or academic credentials.

The institution reserves the right to require a student to withdraw at any time for misconduct as described above. It also reserves the right to impose probation or suspension on a student whose conduct is determined to be unsatisfactory.

Students who feel their rights have been denied are entitled to due process.

VA STUDENTS

A VA student must attain and maintain a minimum grade point average (GPA) of not less than a 3.0 ("B" 80 - 89%) each evaluation period (e.g. term, semester quarter). He/she must meet any skill or technical requirements of his/her particular program.

Each VA student is expected to complete the program within the number of training hours approved by the State Approving Agency for Veterans Training. If at any point in time it is determined that a VA student cannot successfully complete the program within the approved number of hours, the student's VA educational benefits will be terminated for unsatisfactory progress.

A VA student who, at the end of any evaluation period, has not attained and maintained satisfactory progress (3.0 GPA or better) will be placed on academic probation for the next evaluation period. Should the student not attain and maintain satisfactory progress (3.0 GPA or better) by the end of the probationary period (one evaluation period), the student's VA educational benefits will be terminated for unsatisfactory progress.

A student whose VA educational benefits have been terminated for unsatisfactory progress may petition the school to be re-certified after one evaluation period has elapsed. The school may re-certify the student for VA educational benefits only if there is a reasonable likelihood that the student will be able to attain and maintain satisfactory progress for the remainder of the program.
ADMISSION REQUIREMENTS

The Computer Information Systems Graduate Program has been designed for students with undergraduate training in computer information systems or computer science. Applicants for the Master of Science degree in Computer Information Systems should have an undergraduate major in one of the above areas or a related area and must meet the following requirements:

(1) A baccalaureate degree, granted by an accredited institution representing completion of a course of study which fulfills prerequisites for graduate work in the area of Computer Science.

(2) A 2.5 undergraduate grade point average on a grading scale of 4.0 (A).

(3) The intellectual capacity and motivation to pursue graduate work as determined by credentials and an interview. The interview can be waived if the applicant does not reside in the State of Florida. The applicant's official transcript must be submitted directly from the degree-granting institution.

(4) Satisfaction of undergraduate prerequisites in:
   A) Experience with high level programming languages such as COBOL, FORTRAN, PASCAL, C or PL/I and with assembly language programming.
   B) Mathematics - Six hours of college level math, including statistics and quantitative methods.

Students not satisfying these prerequisites will be required to make up the appropriate deficiencies in the undergraduate program before being admitted with full graduate status.

TRANSFER CREDIT. Up to 6 graduate credits may be transferred from a regionally accredited institution. The courses selected for transfer must have received a "B" or better grade and must match a course in the required program. The transfer will be evaluated upon the receipt of an official transcript from the institution originally giving the credit.
Students dismissed from the program may petition for re-admission after one academic year. Such students will have their records examined by the Dean of the Center for Computer and Information Sciences and the Admissions Committee. Upon approval of the committee, the student will be re-admitted to the program. Only those courses with grades of B or better will be applicable to the M.S. program.

**TIME LIMITATION**

A candidate for a master's degree is expected to complete the program within five years from the first registration.

The Center for Computer and Information Sciences, Master of Science in Computer Information Systems degree program maintains up to date progress records on each student. After each evaluation period, the university furnishes students with working transcripts showing current status and all courses completed and/or attempted. When these transcripts are sent to the student they serve as grade reports.
GRADING POLICY

The instructors in the Master's Program assign grades to course work according to the following system:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Quality Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>4.0</td>
</tr>
<tr>
<td>A-</td>
<td>3.7</td>
</tr>
<tr>
<td>B+</td>
<td>3.2</td>
</tr>
<tr>
<td>B</td>
<td>3.0</td>
</tr>
<tr>
<td>B-</td>
<td>2.7</td>
</tr>
<tr>
<td>C+</td>
<td>2.3</td>
</tr>
<tr>
<td>C</td>
<td>2.0</td>
</tr>
<tr>
<td>C-</td>
<td>1.7</td>
</tr>
<tr>
<td>D+</td>
<td>1.3</td>
</tr>
<tr>
<td>D</td>
<td>1.0</td>
</tr>
<tr>
<td>F</td>
<td>0</td>
</tr>
<tr>
<td>I</td>
<td>Incomplete</td>
</tr>
<tr>
<td>PR</td>
<td>In Progress (used for dissertations only)</td>
</tr>
<tr>
<td>W</td>
<td>Withdrawed</td>
</tr>
</tbody>
</table>

A "W" grade is assigned when a student withdraws from a course after the fifth scheduled class and prior to the eleventh scheduled class. Prior to and including the last day to drop courses, dropped courses will be deleted from the student's record. After that date, a grade will be assigned.

An "I" (incomplete) indicates that the student has not completed the course requirements and that the instructor has given additional time to do so. An "I" grade is not routinely assigned in courses, only when serious exigencies prevent completion of the course requirements. It is a prerogative of the instructor of a course to authorize an incomplete for a student. A student may not, by choice, take an incomplete in a course merely by failing to complete the course requirements. Grades normally are based on what has been achieved in the regular time period of a course.

Incompletes may be assigned at the discretion of the instructor at the request of the student. Should the instructor choose to assign an incomplete, a contract form is to be completed and signed by both the instructor and the student and the original kept on record in the Office of the Director of the Master's Program. The contract must specify the following:
1. The requirements to be completed by the student to remove the incomplete.

2. The time period within which the student must satisfy the incomplete. The time limit is to be specified by the instructor, but must not exceed 53 weeks.

3. A grade which the student will receive if the incomplete is not satisfied by the conclusion of the specified time period.

A student will not be permitted to register for a sequential course when a grade of "I" (incomplete) of "F" (failure) has been received in a prerequisite course.

ACADEMIC STANDING

The grading policy for the Master's Program in Computer Information Systems requires the student to maintain a minimum cumulative grade point average of 3.0. In addition, other minimum requirements are in existence. Failure to meet them will result either in academic probation or dismissal as detailed below.

PROBATION POLICY

Students failing to achieve a minimum of a 3.0 (B) grade point average upon completion of the first four courses are not eligible for admission as candidates for the master's degree.

Those students who achieve a grade point average of 2.5 or lower for the first four courses are dismissed from the program.

Students with a grade point average greater than 2.5 but less than 3.0 for the first four courses are placed on academic probation. Such students are counseled as to the number of courses they may take in order to facilitate the raising of their averages. No more than four additional courses may be taken without achieving an overall grade point average of 3.0.

Should a student's grade point average fall below 3.0 after the initial four courses, he or she is placed on probation. The student is allowed one academic year to bring the grade point average up to the 3.0 minimum. Failure to achieve the minimum at that time results in dismissal from the program.
MASTER OF SCIENCE
COMPUTER INFORMATION SYSTEMS

DEGREE REQUIREMENTS

Two options leading to the Master of Science degree with a major in Computer Information Systems are offered. The requirements for both the thesis and the non-thesis option are:

1) The completion of 36 semester hours of graduate credit of which 24 semester hours are required courses and must include the courses as outlined below.

2) The additional requirements for the thesis option are the completion of six semester hours of approved elective courses in Computer Information Systems, and six semester hours for a written thesis. The non-thesis option has the additional requirement of the completion of 12 semester hours of approved elective courses in Computer Information Systems.

3) The student must maintain a grade average of 3.0 (B) or better in all graduate level courses.

CURRICULUM OUTLINE

The core consists of courses recommended by the Association for Computing Machinery (ACM). Prerequisites are indicated in the course descriptions. Courses may be taken in any sequence provided prerequisites are met.

Course Title

<table>
<thead>
<tr>
<th>Course Title</th>
<th>Semester Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CISC 6010 Operations Research</td>
<td>3 cr.</td>
</tr>
<tr>
<td>CISC 6020 Information Systems in Organizations</td>
<td>3 cr.</td>
</tr>
<tr>
<td>CISC 6030 Database Management Systems</td>
<td>3 cr.</td>
</tr>
<tr>
<td>CISC 6040 Information and Systems Analysis</td>
<td>3 cr.</td>
</tr>
<tr>
<td>CISC 6050 Data Communications Systems and Networks</td>
<td>3 cr.</td>
</tr>
<tr>
<td>CISC 6060 Modeling and Decision Systems</td>
<td>3 cr.</td>
</tr>
<tr>
<td>CISC 6070 Systems Design Process</td>
<td>3 cr.</td>
</tr>
<tr>
<td>CISC 6080 Information Systems Management</td>
<td>3 cr.</td>
</tr>
</tbody>
</table>

ELECTIVE COURSES

Students choose four elective graduate courses to complete requirements for the degree.

Course Title

<table>
<thead>
<tr>
<th>Course Title</th>
<th>Semester Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CISC 6000 Computer Systems</td>
<td>3 cr.</td>
</tr>
<tr>
<td>CISC 6001 Programming Languages</td>
<td>3 cr.</td>
</tr>
</tbody>
</table>
CISC 6002 Program, Data, and File Structures 3 cr.
CISC 6013 Survey of Fourth Generation Languages 3 cr.
CISC 6021 Office Automation Systems 3 cr.
CISC 6022 Legal and Ethical Aspects of Computing 3 cr.
CISC 6023 Information Systems in Manufacturing 3 cr.
CISC 6024 Computer Graphics in Business 3 cr.
CISC 6025 Computer Graphics for Information Managers 3 cr.
CISC 6031 Database Management Systems Practicum 3 cr.
CISC 6032 Distributed Database Management 3 cr.
CISC 6051 Computer Security 3 cr.
CISC 6071 Expert Systems 3 cr.
CISC 6072 Computer-Assisted Software Engineering 3 cr.
CISC 6081 Human Factors in Computing Systems 3 cr.
CISC 6082 Information Systems Project 3 cr.
CISC 6083 Data Center Management 3 cr.
CISC 6090 Special Topics in Information Systems 3 cr.

(Students may also request approval by the Program Director to take one or more master's level Computer Science electives where appropriate to the Computer Information Systems major.)

COURSE DESCRIPTIONS

CISC 6000 Computer Systems
Introduction to digital computer design, peripheral devices, storage allocation, operating systems, compilers and assemblers. An understanding of the total operating environment will be developed. Investigation of the common programming techniques and their theory. Segmentation and overlays, recursion, dynamic storage processing, (stacks, queues, trees), macros.
Prerequisite: Consent of instructor. May be required of students whose undergraduate major was not computer science.

CISC 6001 Programming Languages
Introduction to data structures and data types, and understanding of the modern approach to structured programming will be developed. A comparative study of several high-level programming languages. Emphasis will be placed on how concepts are expressed in each of the major languages, such as FORTRAN, COBOL, PL/1, PASCAL, and ALGOL.
Prerequisite: Consent of instructor. May be required of students whose undergraduate major was not computer science.

CISC 6002 Program, Data, and File Structures (Required, 3 cr.)
Since reliable information systems require reliable programs, this course presents modern, structured techniques in "C" and Pascal. Topics include control structures (e.g., loops and branching), data structures (e.g., stacks, queues, linked lists, trees, hashing), and file structures (e.g., access methods, ISAM, VSAM, Btrees). Also covered are design methods such as stepwise refinement, top-down, information hiding, and structured design. Prerequisite: An undergraduate course in "C" or Pascal.

12
CISC 6010 Operations Research (Required, 3 cr.)
An Introduction to the theory and methodology of mathematical programming (linear and non-linear programming), optimization theory, deterministic and probabilistic models, scheduling models (simulation), and queuing methods. The student will learn to apply mathematical models and their implications for the control of complex systems and processes.

CISC 6013 Survey of Fourth Generation Languages (Elective, 3 cr.)
Fourth Generation Languages (4GLs) are user-friendly software tools that can be used by nonprogrammers for the design and implementation of information systems. This course surveys several of the commercially available platforms (hardware/software) for 4GLs; mainframe and PC-based 4GLs are included.

CISC 6020 Information Systems in Organizations (Required, 3 cr.)
This course provides a framework for understanding and analyzing information in organizations. Topics covered include the role of information systems in organizations, systems theory, systems concepts (structure, boundaries, states and objectives), information concepts (humans as information processors), information system applications, system evaluation and selection, and management considerations in constructing, installing, monitoring and maintaining information systems. Through this course, the student will learn techniques for developing, implementing, and managing an information system plan that will satisfy the needs of end users and organizational requirements and objectives.

CISC 6021 Office Automation Systems (Elective, 3 cr.)
This course focuses on strategies for utilizing technology to handle the information used in the office to improve the quantity, content, and format of work performed. Topics include the design and implementation of an office automation system; strategies for successful end-user computing; and OA applications including electronic mail and voice mail; windowing; multi-tasking; computer conferencing; computer-supported cooperative work; project management software; and decision support programs. The impact of ISDN on the office environment will also be examined.

CISC 6022 Legal and Ethical Aspects of Computing (Elective, 3 cr.)
This course focuses on issues that involve computer impact and related societal concerns. Topics covered include transnational data flow; copyright protection; information as a source of economic power; rights to access to computer systems; computer crime; data privacy; establishing national priorities in the technical and social aspects of computing; current and anticipated uses of computer prediction; and protection of personal ethical concerns. National computer policies of Japan, France, Great Britain, and the European Economic Community and the status of regulation and emerging standards also will be examined.
CISC 6023  Computer Integrated Manufacturing (Elective, 3 cr.)
This course provides a framework for understanding how functional organization structure impacts the design of a management information system in a manufacturing setting. Special emphasis will be on marketing, manufacturing, and financial information systems. Topics covered include the product life cycle; production scheduling and capacity requirements planning; techniques for using MIS to make plant location and inventory management; layout decisions; quality control; and internal accounting and funds management. Planning strategies for forecasting services, developing requirements and specifications, writing requests for proposals, and project management will be examined within the context of functional information systems.

CISC 6024  Computer Graphics in Business (Elective, 3 cr.)
Major emphasis is on CAD/CAM applications. This course identifies needs and applications for graphics in business and highlights principles behind the software packages being used to generate graphics. Other issues include graphics equipment and technology (digitizing, pixels and display resolution, laser printers, color graphics, etc.), and algorithmic manipulation of images (two-dimensional images, three-dimensional images, translation, scaling, etc.).

CISC 6025  Computer Graphics for Information Managers (Elective, 3 cr.)
This course presents computer graphics as an aid to information managers who need a clear means of presenting the analysis of information. Topics include basic graphical techniques (e.g., histograms, bar charts, pie charts), the theory of graphical presentation of information, desktop publishing software, presentation software, graphics monitors (EGA, CGA, VGA, RGB, composite), laser printers, computer screen projection systems, and standards.

CISC 6030  Database Management Systems (Required, 3 cr.)
This course provides strategies for designing database management systems (DBMS). Topics include the data environment, definition of data, logical and physical data structures, operating systems, file organization, CODASYL specifications, hierarchical versus relational databases, query interfaces, issues in managing data, database administration, DBMS evaluation, and distributed databases. Students will survey commercial DBMS tools including 4GLs (Fourth Generation Languages).

CISC 6031  Database Management Systems Practicum (Elective, 3 cr.)
The techniques of database management systems will be applied to practical projects.
Prerequisite:  CISC 6030 Database Management Systems
CISC 6032 Distributed Database Management (Elective, 3 cr.)
Students will study information storage and retrieval in a distributed environment. Topics also include distributed processing networks; degrees of distribution; approaches to distribution—multiple unduplicated/duplicated and centralization/decentralization issues; management concerns and criteria; technical developments in office systems (digital voice communication, LANS, electronic mail, decision support systems, etc.), and alternatives for distributed processing.
Prerequisite: CISC 6030 Database Management Systems

CISC 6040 Information and Systems Analysis (Required, 3 cr.)
The analysis stage is the first step in an information system's life cycle. Topics include application development strategies, problem identification, feasibility assessment, requirements analysis, logical specification of the planned system, project management, documentation and standards, and the new "object-oriented" methods of systems analysis. Material on individual behavior and group dynamics in the development process, techniques for project management, feasibility assessment, and post implementation evaluation will be presented.

CISC 6050 Data Communication Systems and Networks (Required, 3 cr.) The explosive growth of data communications based networks has triggered rapid advancements in data communications technology. This course focuses on the principles and applications of data communications. Topics covered include an examination of basic concepts and major components in a data communications system; hardware requirements and equipment; systems design considerations; network architecture; Local Area Networks; common carrier services; network management; standards; and the regulatory environment.
Prerequisite: An undergraduate course in probability and statistics.

CISC 6051 Computer Security (Elective, 3 cr.)
This course provides a foundation for understanding computer and communications security issues and a framework for creating and implementing a viable security program. Topics covered will include hardware, software, and network security; the regulatory environment; personnel considerations; protective measures against a variety of potential threats including hackers, disgruntled insiders, and software viruses; and techniques for responding to incidents not prevented. Through this course, the student will learn about strategic and analytic tools and contingency methods that can be used to safeguard computer and communications systems.

CISC 6060 Modeling and Decision Systems (Required, 3 cr.)
This course introduces students to the principles and techniques needed for using an information system in decision making.
Topics include problem representation, structured and unstructured decision making, model formulation, decision theory, linear programming, queuing, simulation, risk analysis, cost-benefit analysis, idea generation, delphi techniques.

Prerequisite: An undergraduate course in probability and statistics.

CISC 6070 Systems Design Process (Required, 3 cr.)
This course focuses on the information system design process and methodology. Among the issues to be addressed are: the user oriented application description; functions to be performed by the application system; logical and physical design; outputs; hardware and software selection; planning to accommodate change; and audit and control processes such as, quality assurance, program development testing and maintenance.

CISC 6071 Expert Systems (Elective, 3 cr.)
Expert systems are used in an organization whenever valuable "expert" or other procedural knowledge needs to be codified or distributed. Topics include program identification and feasibility, choice of platform (program "shell" and hardware), techniques of knowledge acquisition, verification, and some theoretical subjects such as methods of reasoning, knowledge representation, inference engines, and backward and forward chaining. Students will use a commercial shell to build a working expert system.

CISC 6072 Computer-Aided Software Engineering (Elective, 3 cr.)
Computer-Aided Software Engineering (CASE) is a technique in which the path between initial systems analysis and the final coding of programs can be at least partly automated. Topics include a critical comparison between CASE and 4GLs (Fourth Generation Languages), upper CASE (analysis/design), lower CASE (code generation and testing), toolkits, workbenches, methodology companions, platforms, completeness and consistency checking.
Prerequisite: An undergraduate course in a structured programming language (e.g., C, Pascal).

CISC 6080 Information Systems Management (Required, 3 cr.)
This course focuses on strategies for translating information requirements into an installed system that satisfies organizational goals and objectives and is accepted by its users. Tasks that are required to convert the information system design into a working system are examined. Topics covered include establishing project control; identifying user requirements; creating performance criteria; developing standards for the design and operation of the information system; acceptance testing; post installation review; project management; information security procedures; management responsibilities; computer center administration, the training of computer personnel; and the role of the information systems executive.
CISC 6081 Human Factors in Computing Systems (Elective, 3 cr.)
This course focuses on the dynamics of human-computer interaction. This course provides a broad overview of the human factors field and offers specific background relating to the role of human factors in information systems applications. Areas to be tied to the course include, but are not limited to: the merging of computer and communication technologies, uses and users of information systems, anticipated developments in human factors products, the study of person-computer interaction, the user interface and software design, software tools, and information systems in the office.

CISC 6082 Information Systems Project (Elective, 3 cr.)
Students are assigned a project that involves part or all of the system development cycle. Students will gain experience in analyzing, designing, implementing, and evaluating information systems applications.
Prerequisite: Consent of instructor.

CISC 6083 Data Center Management (Elective, 3 cr.)
This course stresses information center methods for building systems between users and analysts. The traditional life-cycle development will be reviewed. The role and services of the information center will be discussed within the context of these issues: user support, goals in terms of user education and training, promoting systems support and development services, and promulgating and monitoring use of standards for software and for protection of data resources. Other topics in this course include principles of application generators, prototyping, user and provider roles in an information center. Students will be able to identify strengths and limitations of the information center approach.

CISC 6090 Special Topics in Information Systems (Elective, 3 cr.)
This seminar will focus on the professor's current research interests.
Prerequisite: Consent of instructor.