1991

Master of Science--Computer Information Systems 1991-92

Nova Southeastern University

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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).


**PROGRAM FORMAT**

The Master of Science in Computer Information Systems Program operates on a 12-week term. Each three-credit course meets for four hours per week for 12 weeks. All courses in the program are scheduled in the evening or on Saturday. The master of science in computer information systems program should take between 18 and 24 months to complete.

**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 Information Systems. Applicants must request an official transcript that reflects the undergraduate degree conferral date. The official transcript should be sent by the institution directly to Nova at the following address:

   Center for Computer and Information Sciences
   Department of Computer Science
   Nova University
   3301 College Avenue
   Fort Lauderdale, Florida 33314

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) Undergraduate experience with high-level programming languages, preferably C and/or PASCAL. Experience with other programming languages (e.g., COBOL, FORTRAN, Assembly) will be considered by the Admissions Committee to determine if the applicant has satisfactory programming experience to pursue the master's degree.
   B) Undergraduate mathematics completion of:
      1. College Algebra or higher
      2. Statistics (including Probability as a major emphasis)
      3. Quantitative Methods

Applicants with undergraduate training other than computer information systems or computer science who have not satisfied requirements under A) and B) will be required to make up the appropriate deficiencies before being admitted with full graduate admission status. The Admissions Committee will determine if deficiencies are to be made up at the undergraduate or graduate level and advise the applicant accordingly.

5. Three letters of recommendation
TUITION AND FEES
Tuition is $240 per credit hour or $5,760 per year (eight courses). There is a $100 yearly registration fee. Included in the tuition are instructional materials, handouts, and the use of the computer lab. Students must purchase their textbooks. Tuition and fees are subject to change.

Tuition (per credit) $240
Application Fee (nonrefundable) $30
Registration Fee (nonrefundable) $25
Late Registration Fee $30
Graduation Fee $30

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 6, 1992 - March 27, 1992
April 6, 1992 - June 26, 1992
June 29, 1992 - September 18, 1992
September 21, 1992 - December 11, 1992

Registration is two weeks prior to the start of classes.

CURRICULUM
Two options leading to a master of science degree with a major in Computer Information Systems are offered. The requirements for both the thesis and the nonthesis options include—

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:

CISC 6010 Operations Research
CISC 6020 Information Systems in Organizations
CISC 6030 Database Management Systems
CISC 6040 Information and Systems Analysis
CISC 6050 Data Communications Systems and Networks
CISC 6060 Modeling and Decision Systems
CISC 6070 Systems Design Process
CISC 6080 Information Systems Management

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

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

3) The nonthesis option has the additional requirement of the completion of 12 semester hours of approved elective courses in Computer Information Systems. The three-credit courses can be chosen from the following:

CISC 6013 Survey of Fourth Generation Languages
CISC 6021 Office Automation Systems
CISC 6022 Legal and Ethical Aspects of Computing
CISC 6023 Information Systems in Manufacturing
CISC 6025 Computer Graphics for Information Managers
CISC 6031 Database Management Systems Practicum
CISC 6032 Distributed Database Management
CISC 6051 Computer Security
CISC 6071 Expert Systems

CISC 6072 Computer-Assisted Software Engineering
CISC 6081 Human Factors in Computing Systems
CISC 6082 Information Systems Project
CISC 6083 Data Center Management
CISC 6090 Special Topics in Information Systems

4) The additional requirements for the thesis option are completion of six semester hours of approved elective courses in Computer Information Systems and six semester hours for a written thesis.

(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.)

Note that any prerequisites that are to be satisfied at either the undergraduate or graduate level will be taken in addition to required 36 semester hours. Therefore, students who must satisfy prerequisite admission requirements will graduate with 36 semester hours or more.

OTHER PROGRAM OPTIONS
Professionals with an undergraduate accounting background may be interested in obtaining the Master of Accounting and Computer Information Systems offered jointly through the School of Business and Entrepreneurship and the Center for Computer and Information Sciences. For more information, contact the Program Director of the master's CISC program (800-541-6682, Ext. 1947) or the Program Director of the master's accounting program, School of Business and Entrepreneurship (800-541-6682, Ext. 1947).

PROGRAM ADMINISTRATION
TRANSFER CREDIT
Up to six 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. Transfer credit is not automatic. Students must submit a request in writing to the Program Director. The request must include the name of the course(s), the institution where the credit was awarded, indication of what Nova CIS course the transfer course is directly related to, and a course description of the transfer course. 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 readmission 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 readmitted to the program. Only those courses with grades of "B" or better will be applicable to the M.S. program.
GRADING POLICY

The instructors in the master's program assign grades to coursework 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>0.0</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>Withdrew</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 11th 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 that 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" or "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 in either academic probation or dismissal as detailed below.

PROBATION POLICY

Students failing to achieve a minimum of 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.

Grades normally are based on what has been achieved in the courses, only when serious exigencies prevent the student from completing the course requirements. Students are expected to comply with the legal and ethical standards of Nova University. Academic dishonesty and nonacademic misconduct are subject to disciplinary action. Specific instances of misconduct include, but are not limited to, cheating, plagiarism, knowingly furnishing false information to the University, and forging or altering University documents 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.

STUDENT CONDUCT AND RIGHTS

Students who feel their rights have been denied are entitled to due process. Information on grievance procedures is contained in the Policy and Procedures Manual and is available from the Center for Computer and Information Sciences.

PLAGIARISM

At Nova University it is plagiarism to represent another person's work, words, or ideas as one's own without use of a University-recognized method of citation.
Assignments such as course preparations, exams, tests, projects, term papers, practicums, etc., must be the original work of the student. Original work may include the thoughts and words of another, but if this is the case, those ideas or words must be indicated in a manner consistent with a University-recognized form and style manual. Violation of the requirement of original work constitutes plagiarism at Nova University and may result in disciplinary action up to and including termination from the institution.

Work is not original that has been submitted previously by the author or by anyone else for academic credit. Work is not original that has been copied or partially copied from any other source, including another student, unless such copying is acknowledged by the person submitting the work for the credit at the time the work is being submitted or unless copying, sharing, or joint authorship is an express part of the assignment. Exams and tests are original work when no unauthorized aid is given, received, or used prior to or during the course of the examination.

REFERENCING THE WORK OF ANOTHER AUTHOR

All academic work submitted to Nova University for credit or as partial fulfillment of course requirements must adhere to the accepted rules of documentation. Standards of scholarship require that proper acknowledgement be given by the writer when the thoughts and words of another author are used. It is recommended that students acquire a style manual appropriate to their program of study and become familiar with accepted scholarly and editorial practice.

INTERNATIONAL STUDENTS

International Student Advising Service
(305) 370-5695 or toll free (800) 541-6682, Ext. 5695

An international student applying to Nova University must (1) obtain a student (F-1) visa or an exchange visitor (J-1) visa (students are not permitted to study in the United States on a visitor [B-2] visa); (2) submit all secondary school and/or college level transcripts (transcripts must be an official English language translation); (3) demonstrate the ability to meet all costs of his or her education without financial aid from Nova University; (4) purchase medical insurance (J-1 visas only), contact the international student adviser for further information concerning insurance; (5) demonstrate proficiency in the English language through testing in the Nova University Intensive Language Program or receive a minimum of 550 on the TOEFL (Test of English as a Foreign Language) exam.

INTENSIVE LANGUAGE PROGRAM

American Culture and Language Institute
(305) 475-7430 or toll free (800) 541-6682, Ext. 7430

The Intensive Language Program provides students from non-English language backgrounds with English language proficiency through one of two curricular emphases: college preparatory or career preparatory.

The college preparatory curriculum provides students with the necessary English language skills to enable them to function in American colleges and universities. This curriculum prepares students for successful university study in English, as well as providing TOEFL preparation.

The career preparatory curriculum provides students with the English language skills to enable them to function in career and professional situations requiring English proficiency.

VETERANS’ SERVICES AND BENEFITS

(305) 370-5685 or toll free (800) 541-6682, Ext. 5685

Nova University’s academic programs are approved for the training of veterans and other eligible persons by the Bureau of State Approval for Veterans’ Training, Florida Department of Veterans Affairs.

The VA representative will assist veterans in applying for benefits. A VA student must attain and maintain satisfactory progress as determined by the Program Director each evaluation period. The VA student who, at the end of any evaluation period, has not attained and maintained satisfactory progress will be placed on academic probation for the next evaluation period. Should the student not attain and maintain satisfactory progress by the end of the probationary period (one six-month term), 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 recertified after one six-month term 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.

FINANCIAL AID INFORMATION

(305) 485-7411 or toll free (800) 541-6682, Ext. 7411

Nova University offers several programs of student financial aid in order to assist the greatest number of its students possible in meeting educational expenses. In order to qualify and remain eligible for financial aid, students must be accepted for admission into a University program; be eligible for continued enrollment; be a United States citizen or in the U.S. for other than a temporary purpose; and be making satisfactory academic progress toward a stated educational objective in accordance with the University’s policy on satisfactory progress for financial aid recipients.

OTHER INFORMATIONAL PHONE NUMBERS

Registrar’s Office (305) 475-7400 or 1-800-541-6682, Ext. 7400
Student Housing (305) 475-7052 or 1-800-541-6682, Ext. 7052
CISC 6000 Computer Systems
Introduction to digital computer design, peripheral devices, storage allocation, operating systems, compilers and assembly. 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), monitors. Prerequisite: This is not an elective course. It is intended as a graduate-level prerequisite course only for those students who have been advised to make up deficiencies prior to receiving full admission status in the master's program.

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 C and PASCAL. Prerequisite: This is not an elective course. It is intended as a graduate-level prerequisite course only for those students who have been advised to make up deficiencies prior to receiving full admission status in the master's program.

CISC 6002 Program, Data, and File Structures
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, or CISC 6001. This is not an elective course. It is intended as a graduate-level prerequisite course only for those students who have been advised to make up deficiencies prior to receiving full admission status in the master's program.

CISC 6010 Operations Research
An introduction to the theory and methodology of mathematical programming (linear and nonlinear 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
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 products (hardware/software) for 4GLs; mainframe and PC-based 4GLs are included.

CISC 6020 Information Systems in Organizations
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.

CISC 6021 Office Automation Systems
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 computer and OA applications including electronic mail and voice mail; word processing; multitasking; 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
This course focuses on issues that involve computer impact and related societal concerns. Topics covered include transactional 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
This course provides a framework for understanding how functional organization structure impacts the design of a manufacturing 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 6025 Computer Graphics for Information Managers
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 graphic techniques (e.g., histograms, bar charts, pie charts), the theory of graphic presentation of information, desktop publishing software, presentation software, graphics monitors (EGA, CGA, VGA, R-G composite), laser printers, computer screen projection systems, and standards.

CISC 6030 Database Management Systems
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 languages, 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
This course provides practical experience in designing and implementing database management systems. Prerequisite: This course provides an introduction to the use of database management system tools and techniques. The course focuses on the practical aspects of database management system design and implementation, including the selection, configuration, and maintenance of database systems. Students will learn the principles of database management system design and implementation, and will gain experience in the practical aspects of database management system design and implementation.

CISC 6032 Distributed Database Management
Students will study information retrieval and retrieval in a distributed environment. Topics also include distributed control, file organization, CODASYL specifications, hierarchical versus relational databases, query languages, issues in managing data, database administration, DBMS evaluation, and distributed databases. Students will survey commercial DBMS tools including 4GLs (Fourth Generation Languages).

CISC 6040 Information and Systems Analysis
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 postimplementation evaluation will be presented.

CISC 6050 Data Communication Systems and Networks
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; LANs; common carrier services; network management; standards, and the regulatory environment. Prerequisite: An undergraduate course in probability and statistics.
COURSE DESCRIPTIONS

CISC 6051 Computer Security
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.

CISC 6080 Modeling and Decision Systems
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
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; output; 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
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
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
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; postinstallation 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
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
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
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
This seminar will focus on the professor's current research interests. Prerequisite: Consent of instructor.
WHY THE MASTER OF SCIENCE IN COMPUTER INFORMATION SYSTEMS IS RIGHT FOR YOU

- Fully accredited programs
- Part-time and full-time degree programs designed to meet the needs of South Florida industry
- Evening classes
- A graduate degree program for those who need a technical degree
- Solid academic foundation with a practitioner's approach to technology
- Faculty: practicing computer scientists and engineers

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.