College of Engineering and Computing Course Catalogs

NSU Course Catalogs and Course Descriptions

1990

Center for Computer and Information Sciences Application Package

Nova Southeastern University

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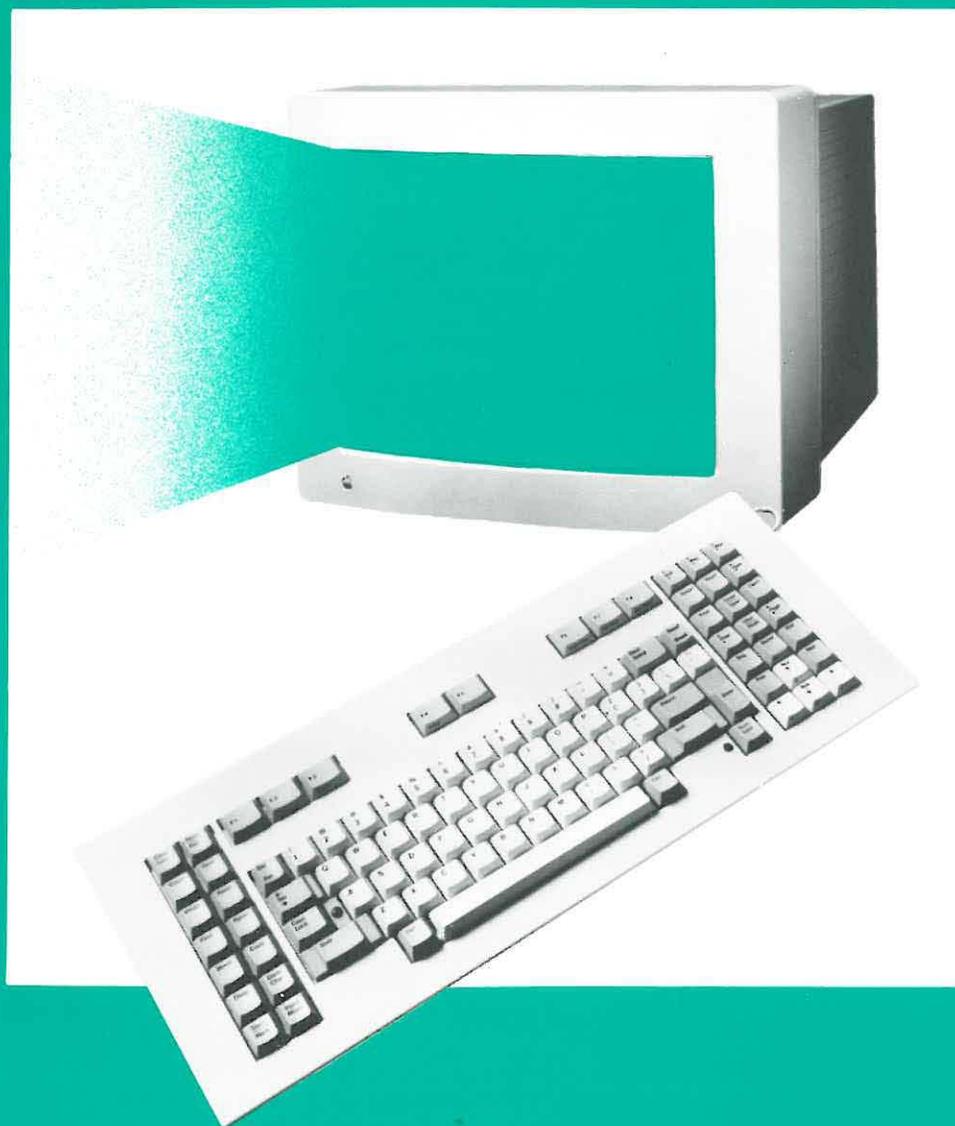
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CENTER FOR COMPUTER
AND
INFORMATION SCIENCES

APPLICATION PACKAGE

NOVA*UNIVERSITY*

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NOVA UNIVERSITY, accredited by the Commission on Colleges of the Southern Association of Colleges and Schools (SACS), has become a major force in the growth and development of educational innovation. We are distinguished by our commitment to traditional and nontraditional instructional modes to deliver quality education. Innovation is reflected in the undergraduate and graduate programs offered by the Center for Computer and Information Sciences (CCIS).

Our mission is to provide current knowledge and practice in computer science, information systems, information science, computer education, and training and learning technology. These programs are designed to provide breadth and depth of knowledge as the basis for generating professional competence in the computer and information sciences. We begin this process by instilling an awareness of the power and application of knowledge through exploration and identification of problems within computing environments. Individuals will become equipped with the intellectual maturity and practical skills necessary to stay abreast of the advancements made within the computing disciplines as well as interact with professionals and users of computer technology.. Today, CCIS faculty and staff serve the educational needs of undergraduate and graduate students throughout the United States.

DELIVERY SYSTEMS

Currently, the center offers both on-campus undergraduate and graduate programs in computer science, computer systems, computer information systems, and computer engineering, and computer-based graduate programs in information systems, information science, computer education, and training and learning technology.

CAMPUS-BASED undergraduate and graduate programs offer convenient course schedules (day, evening, and weekend courses), access to fully equipped computer labs with qualified lab tutors, exposure to computer hardware and software, library materials, and resident faculty.

COMPUTER-BASED graduate programs utilize telecommunications through electronic linkage to Nova University's mainframe (VAX 8550, running Ultrix 2.3). These programs offer seminar and institute sessions, residency requirements, and provide applied approaches to learning that stresses a blend of theory and practice by encouraging students to identify and solve problems of significance within their organizational environments.

CAMPUS-BASED PROGRAMS

The information age and the computing industry along with the field of computer science are changing rapidly. The programs in the Center for Computer and Information Sciences meet these challenges with quality programs that keep pace with rapidly changing professional and academic needs.

We currently offer four undergraduate degree programs in conjunction with Nova College. In addition, the center also offers a Master of Science in Computer Science and a Doctor of Science in Computer Science.

UNDERGRADUATE PROGRAMS

There are two divisions within Nova College: the division of Career Development Programs and the division of Professional and Liberal Studies Programs. The career development programs are intended primarily for working adults and are offered evenings and weekends. The Professional Studies Program and the Liberal Studies Program are designed for students who are interested in a full-time, daytime college experience.

Knowledge and skills are acquired in the areas of behavioral and social sciences, communications, humanities and arts, economics, science, mathematics, and technology. Moreover, students major in a preferred area of concentration. Once students are admitted to Nova College, they take a full complement of core courses within one of the two divisions and their major courses through the Center for Computer and Information Sciences. The four majors currently being offered are computer science, computer engineering, computer information systems, and computer systems.

COMPUTER SCIENCE deals with the systematic study of algorithms and data structures. This concentration provides a base for the student to work in a number of computer career fields and to pursue graduate work in computer science.

COMPUTER ENGINEERING concentrates on the design, architecture, and development of computer hardware. Areas covered are circuit design, firmware, and the high level trade off between hardware and software in computer systems.

COMPUTER INFORMATION SYSTEMS prepares the student for a career in business applications as a programmer/analyst. Emphasis is placed on programming languages, application software analysis, design and development, database management, and information system organization.

COMPUTER SYSTEMS is designed for students who intend to combine business knowledge with an applications approach to computer science. In addition to providing a background in computer function, language, and programming, this major focuses on the use of computers in the business environment.

ADMISSION REQUIREMENTS
- Completed admissions application and fee
- Official high school and/or college transcript(s)
- One of the following test scores or its equivalent (not required of transfer students with 15 or more credit hours), Scholastic Aptitude Test (SAT), Preliminary Scholastic Aptitude Test (PSAT) or the American College Test (ACT).
- A personal or telephone interview
- Recommendation letters

TUITION
Tuition is dependent upon which division you choose to attend. Please call Nova College Admissions office for more information.

MASTER'S PROGRAM

MASTER OF SCIENCE IN COMPUTER SCIENCE
The Center for Computer and Information Sciences offers a graduate program leading to a Master of Science degree with a major in Computer Science. This program is designed to give the student a thorough knowledge of computer systems through coursework, basic and applied research activities, and specialized projects. Current areas of specialization are network design, data communications, artificial intelligence, compiler construction, modeling and simulation, database design, computer systems performance, numerical analysis, operating systems design, structured programming, and software engineering.

CURRICULUM
In addition to allowing professionals to pursue a systematic program of graduate study while working, the core courses are specifically designed for understanding and direct application of technology and are taught by experts in these fields.

Two options (thesis and non-thesis) leading to a Master of Science degree with a major in computer science are offered. The requirements for both the thesis and the nonthesis option include--

1) The completion of 36 semester hours of graduate credit (of which 24 semester hours are required courses) include the following three credit hour courses:

    CISM 610 Theory & Principles of Programming
    CISM 620 Modeling & Simulation
    CISM 630 Compiler Design Theory
    CISM 640 Operating Systems Theory & Design
    CISM 650 Network Design & Analysis
    CISM 660 Database Management
    CISM 670 Artificial Intelligence/Expert Systems
    CISM 680 Software Engineering

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

3) The additional requirements for the thesis option are the completion of six semester hours of approved elective courses in computer science and six semester hours for a written thesis.

4) The nonthesis option has the additional requirement of the completion of 12 semester hours of approved elective courses in computer science. The three-credit courses can be chosen from the following:

CISM 600 Computer Systems
CISM 601 Programming Languages
CISM 611 Systems Programming & Project Implementation
CISM 612 Concurrent Programming Languages
CISM 621 Mathematical Programming
CISM 622 Numerical Analysis
CISM 631 Language Theory & Automata
CISM 632 Compiler Implementation
CISM 633 Graph Theory
CISM 634 Complexity Theory
CISM 643 Array Processors & Super-computers
CISM 644 Operating Systems and Implementation
CISM 645 Microprogramming & Micro-processors
CISM 651 Data Communications
CISM 661 Database Practicum

CISM 652 Systems Performance
    Evaluation
CISM 662 Distributed Database
CISM 681 Interactive Computer Graphics
CISM 690 Special Topics

CISM 671 Robotics and Automated
    Processing
CISM 682 Software Engineering
    Implementation

PROGRAM FORMAT

The Master of Science in Computer Science program operates on a 12-week term. Each three-credit course meets for four hours per week for 12 weeks (one semester). All courses in the program are scheduled in the evenings or on Saturday. The Master of Science in Computer Science program should take between 18 and 24 months to complete.

ADMISSION

This program has been designed for students with undergraduate training in computer science, engineering, mathematics, or physics. Applicants for this degree should have an undergraduate major in one of the above areas or a related area and must meet the following requirements:

- A bachelor's degree from a regionally accredited college or university representing completion of coursework which fulfills prerequisites for graduate work in the area of Computer Science.
- A 2.5 undergraduate G.P.A. (3.0 in the undergraduate major)
- A completed application with application fee and official transcripts of all prior graduate and undergraduate work
- Satisfaction of undergraduate prerequisites in:
    1. Data Structures
    2. Computer Architecture
    3. Experience with higher level programming languages such as FORTRAN, PASCAL, C, and assembly language programming
    4. Mathematics - including calculus, linear algebra, and discrete mathematics

Students not satisfying these prerequisites are required to make up the specific deficiencies before being granted full admission status.

TUITION

Tuition is $225 per credit hour or $5,400 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.

Subject to change

MASTER OF SCIENCE IN COMPUTER SCIENCE

Course Descriptions

CISM 600 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.

CISM 601 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.

CISM 610 Theory and Principles of Programming
The mathematics of algorithm and programming construction. The art of structured programming. The dynamic environment of a program and its record of execution. The theory of concurrent programming. Prerequisite:CISM 600, CISM 601

CISM 612 Concurrent Programming Languages (ADA, MODULA and SIMULA-67)
An introduction to concurrent programming languages. Modules and class structures, packages and concurrent tasks in ADA. Generic procedures. Concurrent programming, mailbox tasks, signals and semaphores. Abstract data types, operations on abstract objectives, hiding of the representation of objectives of a given type, private data types. Prerequisites: CISM 600, CISM 601

CISM 620 Modeling and Simulation
Introduction to modeling techniques. Discrete events systems. Development programs such as SIMULA, GPSS, and SIMSCRIPT. Prerequisite: Consent of instructor.

CISM 621 Mathematical Programming
Introduction to linear programming. Non-linear models. Integer programming. The transportation problem. Mathematical programming models. Model languages. Prerequisite: Consent of instructor.

CISM 622 Numerical Analysis
Introduction to error analysis, iterative methods, eigenvalue problems, integration and differentiation by computer, interpolation, ill-conditioned problems. Prerequisites: CISM 600, CISM 601

CISM 630 Compiler Design Theory
Language theory will be applied to the design of a compiler for a high-level language. Parsing, syntax analysis, interpretation phase and code generation. Other areas of the compilation process will be covered, such as storage allocation, symbol table management, searching and sorting, and recursion.Prerequisites: CISM 600, CISM 601

CISM 631 Language Theory and Automata
Introduction to formal grammars, Backus-Naur notation. The formal theory behind the design of a computer language is studied. The corresponding types of automata which may serve as recognizers and generators for a language will be described. Prerequisites: CISM 600, CISM 601

CISM 632 Compiler Implementation
Design, implementation, and testing of a compiler for a high-level language. Prerequisites: CISM 630

CISM 633 Graph Theory
Finite linear graphs. Applications to modeling optimization, networks, operating systems design, digital design. Prerequisites: CISM 600, CISM 601

CISM 634 Complexity Theory
A general theory of computational complexi Theory of algorithms, turing machines, unsolvable problems, exponential difficulty, NP-Completeness. Prerequisites: CISM 633

CISM 640 Operating Systems Theory and Design
Analysis of computer operating systems with emphasis on structured design. Multi-programming and multiprocessing, real-time, time-sharing, networks, job control, scheduling, synchronization and other forms of resource management: I/O programming memory and file system management. Prerequisites: CISM 600, CISM 601

CISM 641 Digital Computer Design
Principles and techniques of digital computer design. Integrated circuits, logic design, LSI and MSI design, sequential circuit analysis, processor logic design, arithmetic unit, memory systems, input-output structures, microprogramming. Prerequisites: CISM 600, CISM 601

CISM 642 Integrated Computer Systems (VLSI)
Introduction to MOS circuits. The technology of integrated systems. Design of elementary components and subsystems (shift registers, dynamic registers, stacks). Fabrication process and implementation procedures. The design of an integrated computer system (data path, controller, microprogrammed control). System timing, processor arrays and the physics of integrated system. Prerequisite: Consent of instructor

CISM 643 Array Processors and Supercomputers
An introduction to supercomputers. Parallel computer organization. Pipline, associative and array computer architectures. Examples: Texas Instrument ASC, Control Data STARAN, CRAY-I, Burroughs BSP. Control and parallel processors. Stream of micro-instructions. Conflict free memory, algorithmic detection of recurrent relations, and control flow graphs. Prerequisites: CISM 600, CISM 601

CISM 644 Operating Systems Implementation
Implementation and testing of operating system design on actual hardware. Prerequisite: CISM 640

CISM 645 Microprogramming and Microprocessors
The past, present and future of microprogramming will be discussed in detail with particular attention given to processor technology. An in-depth survey of commercially available microprogrammable microprocessors will be presented as well as monolithic microprogrammed devices. The students will implement a processor instruction set in both

vertical and horizontal microcode utilizing a Simulator, Micro-assembler, and Register Transfer language. Advanced topics in special-purpose processor design and architecture definition (dynamic) will be presented. Prerequisite: Consent of instructor

CISM 650 Network Design and Analysis
Distributed processing and other forms of network systems. Prerequisites: CISM 600, CISM 601

CISM 651 Data Communications
An introduction to basic data communication concepts, coding modes and types of transmissions, multiplexing, line protocols, switching techniques and communication satellite technology. Prerequisite: CISM 650

CISM 652 Systems Performance Evaluation
An analysis of the computer resources in a monitoring environment. CPU, channel, memory and mix utilization statistics. Hardware monitors and software monitors. Determining the overloaded computer system. Capacity analysis. Prerequisites: CISM 600, CISM 601

CISM 660 Database Management
Computer-oriented techniques for information storage and retrieval with emphasis on on-line capability. File structures, including data definition and manipulation languages. Prerequisites: CISM 600, CISM 601

CISM 661 Database Practicum
The techniques of Database Management will be applied to practical projects. Prerequisite: CISM 660

CISM 662 Distributed Database
The study of information storage and retrieval in a distributed environment. Distributed processing networks. Prerequisite: Consent of instructor

CISM 670 Artificial Intelligence/Expert Systems
This course emphasizes the area of programming involved with non-deterministic solutions to problems. Concepts of LISP, PROLOG, OPS5 and other specialized programming languages will be presented. The notion of knowledge bases will be developed and all students will be expected to produce a working expert system which embodies these concepts. Prerequisites: CISM 600, CISM 601

CISM 671 Robotics and Automated Processing
The principles and concepts of modern robots and automation are developed. The concepts of algorithmic and non-algorithmic control are presented along with the details of sensor and device I/O. Experiments with simulated and real robots will be performed to reinforce the basic concepts presented. Prerequisite: CISM 670

CISM 680 Software Engineering
This course offers a thorough analysis of the problems related to the design, development and implementation of software projects. First, the fundamentals of software project management are presented, followed by a discussion of the techniques of software development. A comprehensive, modern approach to structure programming, program modularization and program correctness is offered. Software verification and validation, software security and software protection will also be analyzed in detail. Prerequisite: Consent of instructor

CISM 681 Interactive Computer Graphics

The principles of interactive computer graphics are presented. Emphasis will be placed on mastering the concepts of two-dimensional graphics including the basic transformations (scale, translate, rotate), perspective, hidden-line removal and hardware support devices. The two-dimensional concepts will be extended to include three-dimensional computer graphics including smoothing algorithms, animation and a variety of related topics. Prerequisites: CISM 600, CISM 601

CISM 682 Software Engineering Implementation

The techniques of software engineering will be applied to practical projects. Prerequisite: CISM 680

CISM 690 Special Topics

This seminar will focus on the professor's current research interests. Prerequisite: Consent of instructor

DOCTORAL PROGRAM

DOCTOR OF SCIENCE IN COMPUTER SCIENCE

The Center for Computer and Information Sciences offers a graduate program leading to the degree of Doctor of Science in Computer Science (Sc.D.). It is designed to produce a computer scientist with knowledge in all major areas of computer science as well as the capacity for solving a problem of substance in the field. Each course consists of lectures given by leading computer scientists in the field, and completion of a research project by the end of the course. The research activities will be part of industry and University sponsored programs.

This program, by combining seminars, individual study and field projects in the student's own place of work permits acquisition of an advanced degree, and encourages students to make significant contributions to their organizations.

CURRICULUM

In addition to allowing working professionals to pursue a systematic program of graduate study, the core courses are specifically designed toward direct application of technology and are taught by experts in these fields.

The 68 semester hour program (48 semester hours of which are required major courses) takes approximately four years to complete, although students have seven years from their start date to complete the program requirements. Coursework currently being offered for this degree program is as follows: (*three credit hours per course*)

CISD 700 Theory & Principles of Programming
CISD 710 Modeling, Simulation and Mathematical Programming
CISD 720 Compilers, Language Theory and Automata
CISD 730 Operating Systems
CISD 740 Network Design and Data Communications
CISD 750 Database Management Systems and Distributed Databases
CISD 760 Artificial Intelligence and Expert Systems
CISD 770 Software Engineering
CISD 800 Theory and Principles of Programming Project
CISD 810 Modeling, Simulation and Mathematical Programming Project
CISD 820 Compilers, Language Theory and Automata Project
CISD 840 Network Design and Data Communications Project
CISD 850 Database Management Systems and Distributed Databases Project
CISD 860 Artificial Intelligence and Expert Systems Project
CISD 870 Software Engineering Project

PROGRAM FORMAT

The Doctor of Science in Computer Science program operates on a six-month term (semester). During the first three years, the student will select six major courses. Each course will take six months to complete. For each course, the student attends two seminars, develops a proposal for a project and implements the project.

During the fourth year of the program, in addition to the final two courses, the students will be involved in the dissertation process. The dissertation is the main focus of the final year of study and is the most important requirement for the Sc.D. degree. Each student is expected, with the help and approval of an advisor, to select a topic that is appropriate and of sufficient scope to satisfy this requirement. Students should reach conclusions and offer

recommendations that have the potential of contributing to the improvement of professional practice.

Final exams for each course are given at seminar meetings. Pre- and postseminar study materials are provided to each student. Students are responsible for their own lodging and travel expenses at these seminars.

ADMISSION

The Doctor of Science in Computer Science program is designed for students with a graduate degree in computer science, engineering, physics, or mathematics. Applicants for this degree should have a graduate major in one of the above areas or a related area and must meet the following requirements:

- A master's degree from a regionally accredited college or university representing completion of coursework that fulfills prerequisites for doctoral work in the area of computer science
- A 3.25 graduate G.P.A.
- A completed application with application fee and official transcripts of all prior graduate and undergraduate work
- Satisfaction of graduate prerequisites in:
     a. Structured programming
     b. Data communications
     c. Operating systems
     d. Compilers
     e. Databases
     f. Modeling & simulation

Students not satisfying the prerequisites are required to make up the appropriate deficiencies before being granted full admission status.

TUITION

Tuition is $5,250 per year in the Doctor of Science in Computer Science program.* There is a $60 yearly registration fee. Included in the tuition are computer online time, study guides, reading assignments and computer protocols. Students must purchase their own textbooks.

Subject to Change

DOCTOR OF SCIENCE IN COMPUTER SCIENCE

Course Descriptions

CISD 700 Theory and Principles of Programming
The mathematics of algorithm and programming construction will be presented, demonstrating the latest advances in structure programming, modular programming, and concurrent programming. The structures of modern languages will be analyzed in terms of ease of use, program development, correctness, reliability, and integrity Prerequisite: CISD 610

CISD 710 Modeling, Simulation, and Mathematical Programming
The design of a mathematical model will be presented, analyzing the techniques of model development and simulation using General Purpose Simulation Systems (GPSS), Systems Dynamics (DYNAMO), and Mathematical Programming Techniques (IMSL). Prerequisite: CISD 620

CISD 720 Compilers, Language Theory, and Automata
The design of a compiler will be presented, analyzing its structure in terms of the data types and program structures to be compiled; modules, classes, and abstract data types. The concept of parallelism in compilation techniques will also be presented. Prerequisite: CISD 630, CISD 631, CISD 632

CISD 730 Operating Systems
The design of a computer operating system will be presented, analyzing its structure in terms of its control function; multiprogramming, multiprocessing, real-time, time-sharing, and networking. The UNIX operating System will serve as a mode for operating system development. Arrays and networks of microprocessors will also be studied. Prerequisite: CISD 640, CISD 644

CISD 740 Network Design and Data Communications
The analysis of network design and data communications will be presented, illustrating the present protocols linking different microcomputers to a host of computers using local networks. Prerequisite: CISD 650, CISD 651

CISD 750 Database Management Systems and Distributed Databases
The design of relational databases will be presented, analyzing the interface between a database, its applications, and other utility programs; screen formatting, report generation, graphic display, and statistical analysis. Prerequisite: CISD 660, CISD 661, CISD 662

CISD 760 Artificial Intelligence and Expert Systems
The analysis of nondeterministic solutions to problems will be presented, using concepts developed in LISP, PROLOG, OPS5, and other specialized programming languages. The concept of knowledge bases will be developed. Prerequisite: CISD 670

CISD 770 Software Engineering
The design and implementation of a software system will be presented, analyzing the techniques of software integration, automatic program development, and application program generation. Prerequisite: CISD 680, CISD 682

CISD 800 Theory and Principles of Programming Project
The mathematics of algorithm and program construction are the basis for this project. The project illustrates the benefits of applying structured programming, of using program documentation, and of using program assertion to produce correct programs.

Current projects include the use of a modern language (C, Modula, Ada) to demonstrate the benefits of its structures on program development. Each program is designed as a general purpose unit that will become part of an industry or University sponsored program. Prerequisite: CISD 700

CISD 810 Modeling, Simulation, and Mathematical Programming Project
The mathematics of model representation and systems analysis are at the center of this project. From the design of a model to its analysis, each phase of a simulation model is analyzed.

Current projects use the techniques of discrete events simulation, mathematical programming, statistical precision, and systems analysis to study the performance of an industrial system.

CISD 820 Compilers, Language Theory, and Automata Project
Data structures and program constructs available in modern languages (C, Modula, Ada) are at the center of this project on compilers.

Current project compare the current tolls available for compiler construction to achieve the proper level of performance and reliability. Prerequisite: CISD 720

CISD 830 Operating Systems Project
This project analyzes the benefits of using a high level language (C, Modula, Ada) in implementing an operating system.

Current projects compare the traditional methods (writing an operating system in assembly language) and assesses the advantages and disadvantages of replacing assembly languages by modern languages. Prerequisite: CISD 730

CISD 840 Network Design and Data Communication Project
Current projects consist in a team effort to implement a Local Area Network at Nova University. Other projects include the analysis and implementation of academic delivery systems via satellite communication. Prerequisite: CISD 740

CISD 850 Database Management Systems and Distributed Databases Project
Relational Databases are at the center of this project. From the logical design of databases to their physical implementation, each phase of a database project is analyzed.

Current projects analyze the tools available to interface database management systems within the UNIX environment. Prerequisite: CISD 750

CISD 860 Artificial Intelligence and Expert Systems Project
This project consists in the implementation of an expert system dealing with Nova's course delivery system. Other projects include programming using the C-language of a manufacturing robot. Prerequisite: CISD 760

CISD 870 Software Engineering Project

Good engineering practices are the basis for this project. From program specification to program delivery, each phase of the program development is analyzed.

Current projects compare the current tools available in program development to achieve the proper level of program verification, reliability, and testing while keeping the project on target. Prerequisite: CISD 770
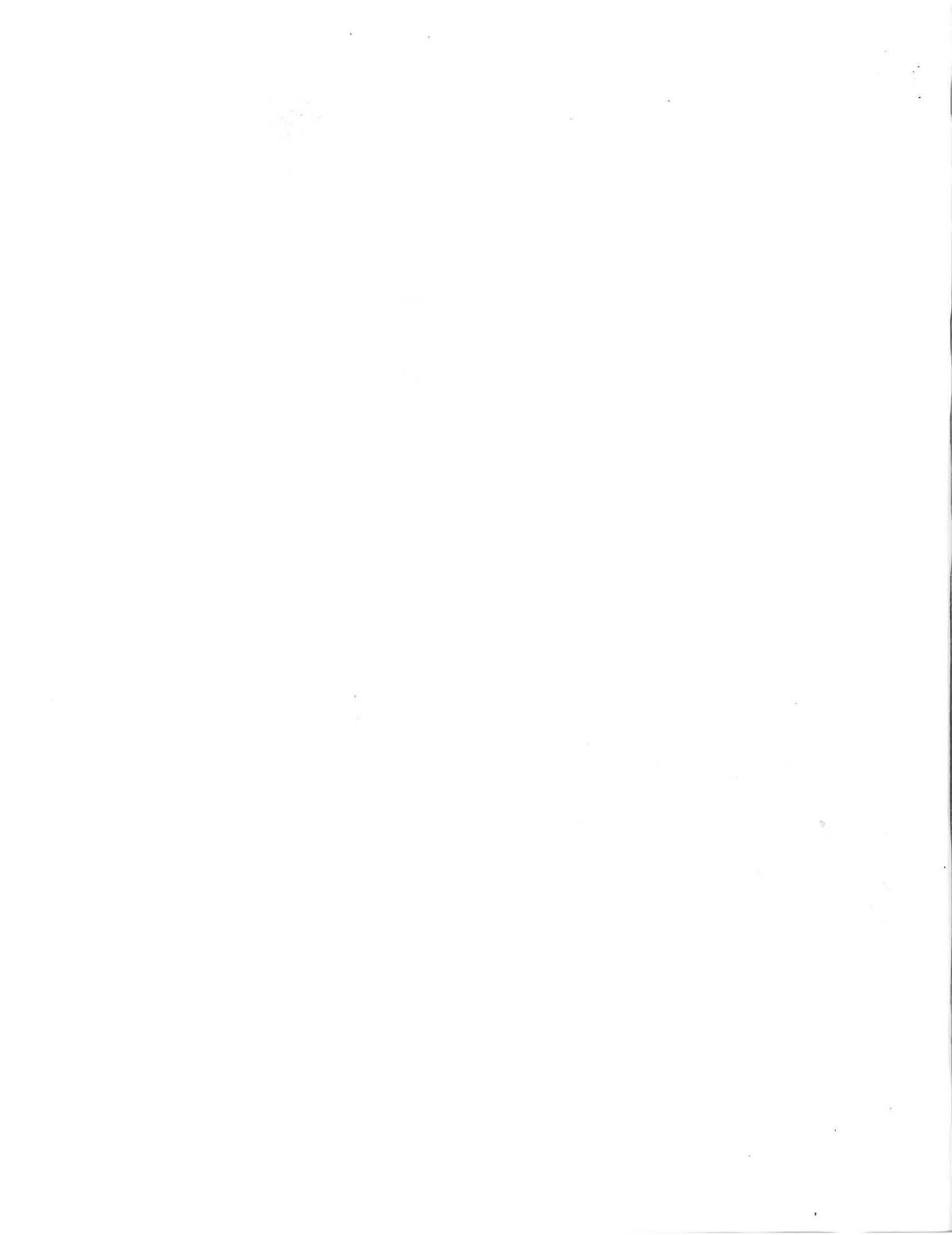
COMPUTER-BASED PROGRAMS

The Center for Computer and Information Sciences serves as a university-wide resource in the fields of computer science and telecommunications to train and develop a new breed of leaders-professionals who are prepared to lead in the rapidly expanding information society. With the advent of new developments in telecommunications and satellite technology, Nova University has taken the lead in technologically-based education. The mission of Nova University emphasizes the importance of alternative forms for the delivery of education through technology and telecommunications, and the center is a major vehicle for supporting this work.

The work of professionals is heavily involved with information. The explosive increase in the quantity of information has created a demand for persons trained in information management skills, and it has placed pressure on various professions to respond by training their own members in information handling techniques. To name a few, the professions of law, information management, medicine, engineering, education, and the sciences have felt the need to provide additional training in the information and computer science field to their constituencies.

In all discipline areas of information science, information systems, training, and computer education, a major problem has developed--the growth in technological tools for information handling and the escalation of information available has outstripped the rate with which professionals are able to maintain competency. This situation is aggravated by two conditions: the public's demand for more knowledge and the demand on organizations to understand their environments in new ways. The first condition has been brought on by the computer revolution, and the second was generated by the forces of international competition, especially the rise of industrial giants like Japan and Germany. Nova University works to meet these demands through its computer-based graduate programs.

Today, the computer is a necessary tool for knowledge workers. Much of the work in the information specialities, and in the field of training, is being accomplished using computers. Using the computer effectively is necessary for success in these fields. Nova University's philosophy is that it makes sense to use the student's natural work environment for learning.

The rationale for computer-based programs was stated by Dale Tillery of the University of California, Berkeley in his presentation before the National Board of Graduate Education: *"As in the clinic, the courts, and the laboratory the arena for much professional learning is in the daily life of real institutions. Why demand that the student leave these natural laboratories for the lecture hall or the seminar room? It makes more sense to import the theoretical and scholarly components to this real world than to deport the student from the very settings in which he needs to gain and refine new insights, sensitivities, and skills. This recognition of the great learning possibilities in professional settings need not result in provincialism or in self-confirmation."*

To this day, Tillery's comments continue to justify the delivery of instruction to the professional's locale--in the computer-based mode. In our computer-based programs, the electronic link between student and professor couples the strengths of the computer-based mode of delivery with telecommunications for a continuous interchange of ideas. The resulting environment for learning helps make the education of knowledge workers and information professionals a more meaningful and enriching experience. In this way Nova University produces the leaders for the emerging information society.

MASTER OF SCIENCE PROGRAMS

The Master of Science in Information Systems (MSIS) is designed for individuals who work or would like to work within the environment of an organization, integrating organizational functions with computer technology. The curriculum provides information systems concepts and processes within the framework of organizational functions, management knowledge, and technical information systems knowledge. Students choosing MSIS gain the ability to develop an information system structure for an organization and learn how to design and implement the structure's applications. Most organizations have a need for increased organizational productivity. The MSIS major is designed to meet these needs. *(This program is offered both on campus and through telecommunications).*

The Master of Science in Computer Education (MSCE) is designed for the educator who wishes to use high technology to improve teaching and administrative efficiency. This area offers administrative and management techniques for promoting a foundation in structured programming for educational applications of computers.

The Master of Science in Information Technology and Resource Management (MIRM) is designed for individuals working or planning to work as information professionals in business, industry, government, or the military. The MIRM seeks to merge telecommunications with computer, information science, and management services. MIRM is the keystone of information science and technology. Every activity in this profession relates to the complex processes in MIRM -- from system design and evaluation, user requirements and document and knowledge representation to database organization, online storage and retrieval techniques, and hard and soft computer technology applications as well as repackaging, dissemination, and marketing.

The Master of Science in Training and Learning (MSTL) is designed for individuals who want to learn, or to improve, skills in computer-based training designing (CBT). The new demands on specialists in the training field require them to collect the "right" information and package it in a form that leads to effective training programs. Students in the training and learning major acquire new skills in the design and application of computer-based training.

By combining individual study, computer-based learning, teleconferences, institutes, and a field project in the student's own place of work, these programs permit acquisition of an advanced degree and encourage students to make significant contributions to their organizations.

CURRICULUM

In addition to allowing working professionals to pursue a systematic program of graduate study, the program is innovative in that the core courses are completed through a computer-based learning delivery system available to the students in their locale. Online interactive learning methods and teleconferencing are used throughout the instructional sequence.

Regardless of the major selected, students will be scheduled to take a common core of eight courses during the first year in the program. During their second year, students will then begin their major and complete four courses, including a practicum component offered in two parts. The common core courses and major courses for each of the four majors are listed. *(3 credit hours per course)*

COMMON CORE COURSES

- An Introduction to Digital Computers and Telecommunications
- Online Information Systems
- Statistics, Measurement, and Quality Control
- The Theory of Human Factors
- Database Management Systems
- Systems Analysis and Design
- Strategic Management, Leadership, and Finance
- Case Analyses

THE MAJORS:

Information Systems (MSIS):

MSIS 5540	Planning and Policy Formulation in Management Information Systems
MSIS 5541	Emerging Technologies in Information Systems
MSIS 5509	Practicum Proposal in Information Systems
MSIS 5510	Practicum Report in Information Systems

Computer Education (MSCE):

CED 5572	Introduction to Structured Programming in Pascal
CED 5573	Advanced Programming in Pascal
CED 5509	Practicum Proposal in Computer Education
CED 5510	Practicum Report in Computer Education

Information Technology and Resource Management (MIRM):

MIRM 5540	Telecommunications in Information Technology & Resource Management
MIRM 554	Emerging Technologies in Information Technology & Resource Management
MIRM 5509	Practicum Proposal in Information Technology & Resource Management
MIRM 5510	Practicum Report in Information Technology & Resource Management

Training and Learning (MSTL):

MSTL 5540	Courseware and Software Design Systems
MSTL 5541	Emerging Technologies in Computer-Based Training
MSTL 5509	Practicum Proposal in Training and Learning
MSTL 5510	Practicum Report in Training and Learning

The practicum (5509 and 5510) enables students to investigate a situation directly related to activities within their own institutions or organizations and translate course theory into practice.

PROGRAM FORMAT

Several modes of delivery are provided in the courses: summer institutes; computer conferences; instruction on a supermini computer; interactive, online, real-time computer discussions with faculty members (ECR); electronic mail conversations; and electronic assignment delivery. Final examinations are taken both online and during the summer

institutes. All other assignments are forwarded through electronic mail and electronic classroom sessions (ECRs) and are stored in central databases.

Much of the work on assignments is done offline and then uploaded to the student's home directory from which it can be electronically mailed to their professors. It is highly recommended that all students know how to use the uploading and downloading (file transfer) capabilities of their communications software prior to beginning the program. It is also essential that new students be familiar with their wordprocessing software before they begin their first course.

ADMISSION
The entire program for the Master of Science degree is designed to be completed in 18 to 24 months. Each applicant must satisfy the following requirements in order to be accepted into the program:

- Official transcripts of all prior graduate and undergraduate work
- A bachelor's degree from a regionally accredited college or university
- A G.R.E. score or completion of a portfolio with appropriate work experience and credentials
- Three letters of recommendation
- A completed application with a $30 application fee

TUITION
Tuition is $150 per credit hour, or $3,600 per year.* There is a $60 yearly registration fee. Students must purchase their online time for the program. This is done in 20-hour blocks of time at a cost of $140. Students may register at any time during the year. Included in the tuition are study guides and instructional materials. Students must purchase the textbooks.

FOUR-YEAR COMBINED MASTER'S/DOCTORAL OPTION
In addition, the Center for Computer and Information Sciences offers a four-year combined master's and doctoral option in:

Computer Education (MSCE/CED)
Information Technology and Resource Management (MIRM/DAIS)
Information Systems (MSIS/DSIS)
Training and Learning (MSTL/DSTL)

Students interested in this option must first be accepted into the master's program. Once students have completed eight courses (and earn 24 credits) in the master's program, with a grade point average of at least 3.25, and attended one summer institute, they may be accepted into one of the corresponding doctoral programs. (Students must also fulfill all other doctoral admission requirements.)

Upon acceptance into the doctoral program and after the completion of 12 credits in the doctoral program, the student is awarded the Master of Science degree. These 12 credits also count toward the doctoral degree, thereby reducing the total time needed to acquire both degrees if they had been taken separately. Once admitted into the doctoral program,

* *Subject to Change*

students follow the format that pertains to doctoral students. For more information about this option, interested individuals should write to the Program Director of the specific doctoral program to which they are seeking admission.

Course Descriptions

MCBL 5501 An Introduction to Digital Computers and Telecommunications Students are required to demonstrate mastery of key concepts and rules pertaining to the use of digital computers and the UNIX operating system. Topics include: UNIX tools, data communications, uploading and downloading files, text formatting with nroff, text editing with ex, ed, vi, and sed. Students learn to apply applications packages that run under the UNIX system.

MCBL 5502 Online Information Systems Topics include computer-based information telecommunications networks such as DIALOG (ERIC), etc. Other topics include: teleconferencing, video-disc technology, and the electronic office. Key concepts of the telecommunications industry are presented. Online work is provided in UNIX network applications (uucp, TIP, Usenet, kermit protocols) and also in DIALOG search and retrieval simulations.

MCBL 5503 Statistics, Measurement, and Quality Control Course content includes the various sampling techniques, descriptive statistics, non-parametric statistics, inferential statistics, survey construction, evaluation methodologies, quality control techniques, and the application of computer statistical packages to problems.

MCBL 5505 Database Management Systems The Ingres relation DBMS is used to assist students in the development of databases for use in professional settings. Topics include database concepts, data dictionaries, data directories, query languages, database administration, management of data, menu design, and database planning.

MCBL 5507 The Theory of Human Factors Course content includes the principles of psychology applied to computer-based education and training; ergonomics of computer environments; learning theory in training and adult education; visual dimensions; instrumentation for human factors design; design rules; human limitations and capabilities in design; and design teams.

This course is further developed for each major area to include sections on: major theories of instructional theory and design; the exploration of instructional systems tools in the UNIX operating system and their applications to educational settings; the application of the theories of learning to the development of computer-based systems in training programs and in educational settings; the relationships between the information systems project and the external environment and its impact on the economic, social, political, and technological structures; the planning of information systems and their relationship to organization structures.

MCBL 5508 Systems Analysis and Design The principles of systems analysis and design are presented and include the analysis of complex situations, problem analysis, and model building; the design process and the implementation of an operational system from its logical design; Artificial Intelligence and the application of expert systems; and model building (simulation, optimization and scheduling).

This course is further developed for each major area to include sections on: CBT courseware development, standards in computer-based learning systems design, and the systems approach to project planning and evaluation; the principles of design and decision making through building models of complex systems; the integration of the appropriate software solutions to the information systems needed by organizations.

MCBL 5511 Strategic Management, Leadership and Finance   Presented in this course, to provide opportunities for students to demonstrate skills in the management of work organization, are methods of strategic management: strategic planning, portfolio analysis, strategy formulation, leadership, and strategies for changing structure. Concepts in finance include budgeting, cost studies, financial ratio analysis, and funds flow.

This course is further developed for each major area to include sections on: administrative and management applications of new technologies; administrative and management techniques, and technological developments that can improve the management process.

MCBL 5512 Case Analyses   Cases from the Harvard Business School Case Service are used by students to develop creative approaches to training program design. Emphasis is placed on designing alternative systems through use of the following methodologies: brainwriting, cross-impact analysis, critiques of science fiction stories, and scenario writing. Computer conferences are used to promote discussion. An online (searchable) database of a case prepared by students serves as a learning resource in this course.

This course is further developed for each major area to include sections on: specialized project in the K-12 setting; specialized project in adult education; higher education; or vocational, technical, or occupational settings

DOCTORAL PROGRAMS

The Doctor of Education in Computer Education (CED) is designed for practitioners working in an education or training setting. Educators and administrators at university, college, K-12 levels, as well as trainers in business and government, have the opportunity to become skilled in telecommunications, software and courseware design, and educational applications of research and theory.

The Doctor of Science in Information Systems (DSIS) is designed for managers in business, government, or industry, who are involved in computer-based information processing. The program's emphasis is on professional training and is offered for practitioners working in information fields such as computer centers and information centers.

The Doctor of Science in Training and Learning (DSTL) is based on the premise that training personnel today are managers of information. In this context, their role has been similar to that of the information scientist.

The Doctor of Science in Information Science (DAIS) is for professionals concerned with the effective transfer of information through systems from sources to users. The program is designed to provide a vehicle for individuals to advance in their professions by learning to apply to their organizations or institutions the latest developments in telecommunications, information science, computer science, and strategic management.

CURRICULUM

In addition to allowing working professionals pursuit of a systematic program of graduate study, the program is innovative in that the core courses are completed through a computer-based learning delivery system available to the students in their own locales and through seminars and institutes. Online interactive learning methods and teleconferencing are used throughout the instructional sequence.

Regardless of the degree selected, students are scheduled to take a common core of five courses. In addition to the core courses, students complete their major courses, two practicums, and their dissertation as a part of their degree program. The common core courses and major courses are listed below:

COMMON CORE COURSES

DAIS 7100   Computer-Based Research and Statistics
DAIS 8500   Database Management Systems
DSTL 8400   Human Factors in Software Design
DAIS 7200   Strategic Management of Information
DAIS 8700   Systems Analysis, Expert Systems & Artificial Intelligence
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15 credits for 5 common core courses

MAJORS:

Doctoral students also take two courses listed in their major area and five modules-of-expertise (MOE's), two practicums and their dissertation representing an additional 51 credits. (*3 credit hours per course unless otherwise noted*)

COMPUTER EDUCATION (CED)

CED. 7000	Advanced Structured Programming with Applications in Pascal & C
CED. 8600	Courseware and Software Design
CED. 7110	Data Analysis for Educators *(MOE)*
CED. 7210	Finance and Budgeting in Education *(MOE)*
CED. 8410	Curriculum and Learning Theory *(MOE)*
CED. 8510	Relational Databases in Education *(MOE)*
CED. 8710	Artificial Intelligence & Expert Systems for Educators *(MOE)*
CED. 7800	PRACTICUM I Proposal (3 credit hours)
CED. 7850	PRACTICUM 1 Report (3 credit hours)
CED. 7900	PRACTICUM II Proposal (3 credit hours)
CED. 7950	PRACTICUM 1I Report (3 credit hours)
CED. 8990	DISSERTATION Proposal (6 credit hours)
CED. 8995	DISSERTATION Report (12 credit hours)

INFORMATION SYSTEMS (DSIS)

DSIS 7000	Emerging Computer & Information Technologies for Information Systems Design
DSIS 8800	Planning & Policy Formulation In Management Information Systems
DSIS 7110	Data Analysis for Information Systems *(MOE)*
DSIS 7210	Finance and Budgeting in Information Systems *(MOE)*
DSIS 8410	Design of Human Interfaces to Information Systems *(MOE)*
DSIS 8510	Relational Databases in Organizations *(MOE)*
DSIS 8710	Artificial Intelligence & Expert Systems for Decision Support Systems *(MOE)*
DSIS 7800	PRACTICUM I Proposal (3 credit hours)
DSIS 7850	PRACTICUM 1 Report (3 credit hours)
DSIS 7900	PRACTICUM II Proposal (3 credit hours)
DSIS 7950	PRACTICUM 1I Report (3 credit hours)
DSIS 8990	DISSERTATION Proposal (6 credit hours)
DSIS 8995	DISSERTATION Report (12 credit hours)

TRAINING AND LEARNING (DSTL)

DSTL 8600	Software & Courseware Design for Computer-Based Learning
DSTL 7000	Emerging Computer & Information Technologies for Training & Learning Design
DSTL 7110	Data Analysis for Training & Learning *(MOE)*
DSTL 7210	Finance and Budgeting in Training & Learning *(MOE)*
DSTL 8410	Design of Human Interfaces *(MOE)*
DSTL 8510	Relational Databases in Organizations *(MOE)*
DSTL 8710	Artificial Intelligence & Expert Systems for Training & Learning *(MOE)*

| DSTL 7800 | PRACTICUM I Proposal (3 credit hours) |
| DSTL 7850 | PRACTICUM 1 Report (3 credit hours) |

| DSTL 7900 | PRACTICUM II Proposal (3 credit hours) |
| DSTL 7950 | PRACTICUM 1I Report (3 credit hours) |

| DSTL 8990 | DISSERTATION Proposal (6 credit hours) |
| DSTL 8995 | DISSERTATION Report (12 credit hours) |

INFORMATION SCIENCE (DAIS)

DAIS 7000	Emerging Technologies in Information Science
DAIS 7300	Telecommunications & Networking within Libraries & Information Centers
DAIS 7110	Data Analysis for Information Science *(MOE)*
DAIS 7210	Finance and Budgeting in Information Science *(MOE)*
DAIS 8410	Design of Human Interfaces in Information Science *(MOE)*
DAIS 8510	Relational Databases in Information Science *(MOE)*
DAIS 8710	Artificial Intelligence & Expert Systems in Information Science *(MOE)*

| DAIS 7800 | PRACTICUM I Proposal (3 credit hours) |
| DAIS 7850 | PRACTICUM 1 Report (3 credit hours) |

| DAIS 7900 | PRACTICUM II Proposal (3 credit hours) |
| DAIS 7950 | PRACTICUM 1I Report (3 credit hours) |

| DAIS 8990 | DISSERTATION Proposal (6 credit hours) |
| DAIS 8995 | DISSERTATION Report (12 credit hours) |

As noted above, the requirements include two practicums and a dissertation. Practicums enable students to investigate a situation directly related to activities within their own institutions or organizations and translate course theory into practice.

The dissertation is the main focus of the final year of study. Each student is expected, with the help and approval of their dissertation committee chair, to select a topic that is appropriate and of sufficient scope to satisfy this requirement. Students should be able to reach conclusions and offer recommendations that have the potential of contributing to the improvement of professional practice.

PROGRAM FORMAT
Several modes of delivery are provided in the courses: seminars, institutes, computer conferences, computer-assisted instruction on a supermini computer, interactive, online, real-time computer discussions with faculty members (ECR), electronic mail conversations and electronic delivery of assignments. Final examinations are taken by the students in person at either the seminar or institute sessions. All other written assignments are forwarded through electronic mail systems and stored in central databases.

Computer-based doctoral programs offer two options for attendance: *Seminars* (commence Friday evening and adjourn on Saturday evening), or *Institutes*. The seminars are held

every three months in Ft. Lauderdale, Florida.. Institutes are held twice a year in Ft. Lauderdale, Florida.

Both the institutes and the seminars consist of presentations by recognized authorities, small group discussions and workshop sessions. The latest developments in digital computers, telecommunications and information science will be demonstrated. Pre and post-seminar study materials are provided to each student. Students are responsible for their own lodging and travel expenses.

These programs, by combining individual study, computer-based learning, teleconferences, seminars, institutes and field projects in the student's own place of work, permit acquisition of an advanced degree and encourage students to make significant contributions to their organizations. We seek to maintain and develop student's knowledge and skills in the current and emerging technologies.

ADMISSION REQUIREMENTS

- A master's degree from a regionally accredited institution; however, a bachelor's degree is appropriate for the four-year combined program
- Current employment in a related field
- A minimum of two years of professional experience
- A G.R.E. score or completion of a portfolio with appropriate work experience and credentials
- Three letters of recommendation
- A completed application with application fee and official transcripts of all prior graduate and undergraduate work

TUITION

Tuition is $4500 per year*. This is a planned three year program. There is a $60 yearly registration fee. Students may register at any time during the year. Included in the tuition are computer online time, software and courseware necessary to complete the program. Students must purchase the textbooks.

Subject to Change

COMPUTER EDUCATION

Course Descriptions

CED. 7000 Advanced Structured Programming with Applications in Pascal and C Building on a foundation in structured programming, students will become proficient in the use of the Pascal programming language. Following structured programming techniques, the "C" programming language will be used to enable students to develop original programs and to convert shell scripts into more efficient "C" programs.

DAIS 7100 Computer-Based Research and Statistics An introduction to data and information analysis and inference.

CED. 7110 Data Analysis for Educators (MOE) The CED student will pursue one of the following majors: economic analysis of proposed resource commitments, analysis of different alternatives, and risk analysis for each case; information theory, and its application to education; recommendation of guidelines to the selection of the "best" solution in relation to education.

DAIS 7200 Strategic Management An introduction to MIS systems projects involvement with top management strategy formulation and implementation.

CED. 7210 Finance and Budgeting in Education (MOE) The CED student will become expert in one of the following areas: the role of information systems in education and how they relate to educational objectives and organizational structures; comparison of the information system plan to the organizational strategic plan; identification of the key organizational objectives and development of an information system to support these objectives.

DSTL 8400 Human Factors in Software and Courseware Design An introduction to the human interface in information projects.

CED. 8415 Curriculum and Learning Theory (MOE) The basic theories of learning, the use of these theories in the management of learning, and the application of learning theory and research to computer-based learning (CBL) constitute the main focus. Students will review various curriculum theories and become familiar with common instructional design models. Students will explore the psychology of software design and the relationship of curriculum design to computer-based learning (CBL) so they can create a curriculum project.

DAIS 8500 Database Management Systems, Text Processing and Information Retrieval An introduction to database management systems, data communications, and networks.

CED. 8515 Relational Databases in Education (MOE) The CED student will strengthen his/her education in one of the following topics : database concepts, hierarchical and plex structures, relational databases, normalization techniques, query languages, database management, and database administration; study of the impact of communications technology in education; database and data communications requirements in relation to education.

CED. 8600 Software and Courseware Design Topics include: the design, development, and evaluation of software and courseware along with documentation,

packaging, and marketing; the evaluation, examination and use of authoring systems; the analysis of current methods and practices in the field of computer-based training design; documentation, security, and database management; an introduction to CAI authoring systems in a UNIX environment, c-pilot, learn, course writers workbench, prolog, and inference.

DAIS 8700   Systems Analysis, Expert Systems and Artificial Intelligence
The principles of systems analysis and design are presented in a context of artificial intelligence applications. An approach to the design of systems is highlighted using examples of expert systems.

CED. 8710   Artificial Intelligence and Expert Systems for Education
(MOE)   These include: principles of decision making using knowledge-based examples (design expert systems with commercial shells); analysis of complex situations through problem analysis; tools for model building: simulation, optimization, statistical analysis, and scheduling; the information systems design process; systems software solutions to the information systems problems in education; artificial intelligence and application of expert systems in education (a PROLOG example).

INFORMATION SYSTEMS

Course Descriptions

DSIS 7000 Emerging Computer and Information Technologies for Information Systems Design   A design course using developing computer concepts, software systems, telecommunications, and videodisc systems. The DSIS student will develop specific competence in one of the following areas: emerging computer architectures, computer operating systems, and their implications for information systems design and operation (RISC, ASIC, VLSI, etc.); fourth generation languages and their application to information systems;- CD-ROM and optical disc technologies; telecommunications and data communications technologies (ISDN, changing standards, direct broadcast satellites and VSAT.)

DAIS 7100 Computer-Based Research and Statistics   An introduction to data and information analysis and inference.

DSIS 7110 Data Analysis for Information Systems (MOE) The DSIS student will pursue one of the following majors: economic analysis of proposed resource commitments, analysis of different alternatives, and risk analysis for each case; information theory, and its application to information systems; recommendation of guidelines to the selection of the "best" solution in relation to information systems.

DAIS 7200 Strategic Management   An introduction to MIS systems projects involvement with top management strategy formulation and implementation.

DSIS 7210 Finance and Budgeting in Information Systems (MOE)   The DSIS student will become expert in one of the following areas :the role of information systems in organizations and how they relate to organizational objectives and organizational structures; comparison of the information system plan to the organizational strategic plan; identification of the key organizational objectives and development of an information system to support these objectives.

DSTL 8400 Human Factors in Software Design   An introduction to the human interface in MIS projects.

DSIS 8410 Design of Human Interfaces to Information Systems (MOE) The DSIS student will further develop his/her expertise with one of the following subjects : ability to hear others and listen to others; analysis of task-oriented behaviors and time constraints in an organizational setting; prediction of future behavior in terms of commonly used variables of economics and psychology; optimization of the chances of implementing with success an information system in your organization.

DAIS 8500 Database Management Systems, Text Processing and Information Retrieval   An introduction to database management systems, data communications, and networks.

DSIS 8510 Relational Databases in Organizations (MOE)   The DSIS student will strengthen his/her education in one of the following topics: database concepts, hierarchical and plex structures, relational databases, normalization techniques, query languages, database management and database administration; study of the impact of communications technology on information systems; database and data communications requirements in relation to information systems.

DAIS 8700 Systems Analysis, Expert Systems and Artificial Intelligence
The principles of systems analysis and design are presented in a context of artificial
intelligence applications. An approach to the design of systems is highlighted using
examples of expert systems.

**DSIS 8710 Artificial Intelligence and Expert Systems for Decision Support
Systems (MOE)** These include: principles of decision making using knowledge-based
examples (design expert systems with commercial shells); analysis of complex situations
through problem analysis; tools for model building: simulation, optimization, statistical
analysis, and scheduling; the information systems design process; systems software
solutions to the information systems problems in organizations; artificial intelligence and
application of expert systems to decision support systems (a PROLOG example).

**DSIS 8800 Planning and Policy Formulation in Management Information
Systems**   This course is also specially designed for the DSIS students to provide: a
thorough background of information systems planning in the total environment: legal,
social, and technological implications; the overall information needs of an organization and
the role of information systems in providing them, and the relationship between
administrative and management issues and the administration of the information systems
functions; the impact of information technology on society and the political issues involved;
the relation between the information systems project and the external environment; its
impact on the economic, social, political and technological structures; implementation of an
information system.

TRAINING AND LEARNING

Course Descriptions

DSTL 7000 Emerging Computer and Information Technologies for Training and Learning Design A design course using developing computer concepts, software systems, telecommunications, and videodisc systems. The DSTL student will develop specific competence in one of the following areas: emerging computer architectures, computer operating systems, and their implications for training and learning design (RISC, ASIC, VLSI, etc.); authoring languages, training systems and their applications to training and learning; CD-ROM and optical disc technologies; telecommunications and data communications technologies (ISDN, changing standards, direct broadcast satellites and VSAT.)

DAIS 7100 Computer-Based Research and Statistics An Introduction to data and information analysis and inference.

DSTL 7110 Data Analysis for Training and Learning (MOE) The DSTL student will pursue one of the following majors: economic analysis of proposed resource commitments, analysis of different alternatives, and risk analysis for each case; efficient use analysis of these resources in a training environment; information theory, and its application to training and learning; recommendation of guidelines to the selection of the "best" solution in relation to training and learning; evaluating different training programs and testing their efficiency.

DAIS 7200 Strategic Management An introduction to information systems projects involvement with top management strategy formulation and implementation.

DSTL 7210 Finance and Budgeting in Training and Learning (MOE) The DSTL student will become expert in one of the following areas: the role of training and learning in organizations and how they relate to organizational objectives and organizational structures; comparison of the training and learning plan to the organizational strategic plan; identification of the key organizational objectives and development of budgets and financial plans for training and learning programs to support these objectives; depreciation and payback analysis on learning technology.

DSTL 8400 Human Factors in Software and Courseware Design An introduction to the human interface in information projects.

DSTL 8410 Design of Human Interfaces (MOE) The DSTL student will further develop his/her expertise with one of the following subjects: ability to identify human problems in a training environment; analysis of task-oriented behaviors and time constraints in a training and learning setting; prediction of future behavior in terms of commonly used variables of economics and psychology; optimization of the chances of implementing with success a training and learning environment in your organization; analysis of the factors working against a successful implementation of a training program: economic, political, personal problems.the relation between the company's long range, strategic plan and its ability to implement a successful training program.

DAIS 8500 Database Management Systems, Text Processing and Information Retrieval An introduction to database management systems, data communications, and networks.

DSTL 8510 Relational Databases in Organizations (MOE) The DSTL student will strengthen his/her education in one of the following topics: database concepts, hierarchical and plex structures, relational databases, normalization techniques, query languages, database management & database administration; database requirements in relation to training and learning; management of student's records: automatic recording of student progress in training and learning.

DSTL 8600 Software and Courseware Design for Computer-Based Learning Topics include: the design, development, and evaluation of software and courseware along with documentation, packaging, and marketing; the evaluation, examination and use of authoring systems; the analysis of current methods and practices in the field of computer-based training (CBT) design, documentation, security, and database management; an introduction to CAI authoring systems in a UNIX environment: c-pilot, learn, course-writers workbench, prolog and inference.

DAIS 8700 Systems Analysis, Expert Systems and Artificial Intelligence The principles of systems analysis and design are presented in a context of artificial intelligence applications. An approach to the design of systems is highlighted using examples of expert systems.

DSTL 8710 Artificial Intelligence and Expert Systems for Training and Learning (MOE) These include: principles of training and learning making use of knowledge-based examples (design expert systems with commercially available shells); analysis of complex training and learning situations through problem analysis; selection and use of appropriate tools for model building, simulation, optimization, statistical analysis, and scheduling in a training environment; the application of systematic design principles for training program development; the selection and application of appropriate hardware and software solutions to the training environment; artificial intelligence and application of expert systems to training and learning (a PROLOG example).

INFORMATION SCIENCE

Course Descriptions

DAIS 7000 Emerging Technologies in Information Science (3 credits) Topics covered include emerging concepts in computer hardware and software systems, data communications and optical disk technology. The student will develop an understanding of such concepts as computer architectures, protocols, and standards and their impact on information access and retrieval within libraries and information centers.

DAIS 7100 Computer-Based Research and Statistics An introduction to data and information analysis and inference.

DAIS 7110 Data Analysis for Information Sciences (MOE) Topics introduced include economic analysis of proposed resource commitments, risk analysis, and evaluation methodologies within the context of information theory. Emphasis is placed on optimizing data analysis applications in libraries and information centers.

DAIS 7200 Strategic Management An introduction to MIS systems projects involvement with top management strategy formulation and implementation.

DAIS 7210 Finance and Budgeting in Information Sciences (MOE) Techniques for developing budgets and financial plans in conjunction with organizational goals and objectives are presented.

DAIS 7300 Telecommunications and Networking within Libraries and Information Centers An introduction to the concepts and principles of telecommunications and an understanding of the technology of computer networking will be provided. Emphasis is on the technical and human issues that arise in the design, development, and deployment of computer networks and on preparing a plan for networking implementation that is consistent with the organization's goals and objectives and realistic performance requirements.

DSTL 8400 Human Factors in Software Design An introduction to the human interface in MIS projects.

DAIS 8410 Design of Human Interfaces in Information Sciences (MOE) In this course, the DAIS student will optimize his/her ability to implement successfully an information system within the work environment through studying such topics as the human/computer interface, ergonomics, time constraints and task-oriented behaviors in a learning setting, and economic and political variables that impact acceptance of new technologies.

DAIS 8500 Database Management Systems, Text Processing and Information Retrieval An introduction to database management systems, data communications, and networks.

DAIS 8510 Relational Databases in Information Sciences (MOE) Database concepts, database management, and database administration are presented to help the student develop his/her expertise in database planning and implementation.

DAIS 8700 Systems Analysis, Expert Systems and Artificial Intelligence
The principles of systems analysis and design are presented in a context of artificial intelligence applications. An approach to the design of systems is highlighted using examples of expert systems.

DAIS 8710 Artificial Intelligence and Expert Systems in Information Sciences (MOE) Concepts, principles, and applications of artificial intelligence and expert systems that are operational within the framework of libraries and informational centers are covered.

PROGRAM ADMINISTRATION

ON-CAMPUS 2-DAY UNIX TRAINING WORKSHOPS

A two-day introductory session on UNIX is offered in a workshop format. New students are urged to come to the Nova University main campus, attend the UNIX workshop, and get acquainted with the Center for Computer and Information Sciences. This workshop is included in the regular tuition however, students must pay their own travel and living expenses. Master's students are welcome to participate in these workshops and meet with the CCIS faculty and staff.

The times for the **workshops** are: Friday afternoon   1:00 P.M. - 5:00 P.M.
                                      Saturday   9:00 A.M. - 4:00 P.M.

The following 1990 dates are for the **on campus** UNIX workshops:

January 19-20	February 9-10	March 23-24
April 20-21	May 18-19	June 15-16
July 27-28	August 24-25	September 21-22
October 19-20	November 16-17	December 14-15

ADMISSION

Once the formal application has been made to the Center for Computer and Information Sciences, the Admissions Committee will review and make final decisions concerning admissions.

WITHDRAWAL

Students who wish to withdraw from the program - either temporarily or permanently - must inform the Admissions Office in writing to be eligible for allowable refunds. Students who give written notice of their intent to withdraw prior to a seminar will not be assessed for subsequent courses until they are formally readmitted. Students who withdraw are subject to the prevailing tuition rate.

READMISSION

Individuals on withdrawal status who wish to be readmitted must complete a readmission form and be approved for readmission by the Admissions Committee for the Center for Computer and Information Sciences.

PROGRESS RECORDS

The Center for Computer and Information Sciences maintains up-to-date progress records on each student. The University periodically furnishes each student with a working transcript, which shows the current status of grades and earned semester hours for all courses completed and/or attempted, plus grades for courses in which the student is currently enrolled.

GRADING SYSTEM FOR THE MASTERS PROGRAMS

Faculty for the Masters CCIS programs assign grades to coursework according to the following system:

GRADE	ACHIEVEMENT RATING	QUALITY POINTS
A	Excellent	4
B	Satisfactory	3
C	Marginal Pass	2
F	Failure	0
P	Pass (used for practicums)	
I	Incomplete	
PR	In Progress (practicums only)	
W	Withdraw	

WITHDRAW (W) 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 are deleted from the student's record. After that date, a grade will be assigned. *(This pertains only to Computer Science)*

INCOMPLETE (I) 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 there are mitigating circumstances to prevent completion of the course requirements.

Incompletes may be assigned at the discretion of the instructor at the request of the student. Should the instructor choose to assign an incomplete, an incomplete contract is to be completed and signed by both the instructor and the student, with the original kept on record in the Program Office. An incomplete must be made up within one year of the date the student originally registered for the course. If not, it becomes an "F" (Fail). Students who receive two FAIL grades will be dismissed from the program and may not be readmitted. A student will not be permitted to register for a sequential course when a grade of "I" or "F" has been received in a prerequisite course. *(Computer Science)*

GRADING SYSTEM FOR THE DOCTORAL PROGRAMS

Faculty for the CCIS Programs assign grades of *PASS*, *NO PASS*, and *INCOMPLETE* for courses and *PASS*, *NO PASS*, *IN PROGRESS*, and *UNACCEPTABLE* for practicums and dissertations. Course grades are assigned by the lecturer responsible for that course, practicum grades are assigned by the practicum evaluator, and dissertation grades by the committee chair.

PASS (P) Indicates that the student has satisfied all course, seminar, practicum, or dissertation requirements.

INCOMPLETE (I) Indicates that there are one or more assignments and/or other requirements to complete before a summative grade can be assigned. An Incomplete is not automatically granted at the completion of the initial registration period. On the contrary, an Incomplete is an earned grade and it is only awarded after a petition is submitted to and accepted by the instructor. If an instructor accepts the incomplete petition, then an incomplete contract for completion is drafted and signed by the student and the instructor of record.

NO PASS (NP)	Indicates that a student has not successfully completed all requirements to the satisfaction of the instructor. Any student receiving a NO PASS must repeat the course. Students receiving a grade of NO PASS in a course or on a practicum will be placed on academic probation until the course has been retaken and passed. Students who receive two NO PASS grades will be terminated from the program. Readmission following academic dismissal is not possible in this program.
WITHDRAW (W)	Is assigned if the student officially withdraws (in writing) from the course prior to the course exam.
IN PROGRESS (PR)	Is assigned as an interim grade until completion of the course, practicum, or dissertation has been reached.
UNACCEPTABLE (U)	Means the practicum needs revision. When a practicum receives a "U" on the second revision, a NO PASS is assigned and the student must begin a new practicum on a new topic.

INTERNATIONAL STUDENTS
International Student Advising Service
(305) 475-7413 or 1-800-541-6682 x 7413

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 in official English language translation); (3) demonstrate the ability to meet all costs of his/her education without financial aid from Nova University; (4) purchase medical insurance (J-1 visas only), contact the international student advisor for further information concerning insurance; (5) demonstrate proficiency in the English language through testing in the Nova University Intensive Language Program, or minimum of 500 on the TOEFL exam.

INTENSIVE LANGUAGE PROGRAM
Intensive Language Center
(305) 475-7430 or 1-800-541-6682 x 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. It also provides intensive instruction in other languages.

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 (Test of English as a Foreign Language) 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 & BENEFITS
(305) 475-7413 or 1-800-541-6682 x 7413

Nova University's academic programs are approved for the training of Veterans and other eligible persons by the Bureau of State Approval for Veteran's Training, State of Florida Department of Veteran's 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 6-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 recertify 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 1-800-541-6682 x 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; eligible for continued enrollment; a United States citizen, or in the U.S. for other than a temporary purpose; and 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

Nova College Admissions (Undergraduate)
    Liberal Studies (Day School)   (305) 475-7360 or 1-800-541-6682 x 7360
    Career Division (Night School)   (305) 475-7034 or 1-800-541-6682 x7034
Registrar's Office   (305) 475-7400 or 1-800-541-6682 x 7400
Student Housing   (305) 475-7052 or 1-800-541-6682 x 7052

STUDENT CONDUCT AND RIGHTS
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.

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.

ORIGINAL WORK AT NOVA UNIVERSITY

At Nova University it is plagiarism to represent another person's work, words, or ideas as ones 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 coping 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 expressed 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 student and become familiar with accepted scholarly and editorial practice.

CERTIFICATION

State certification, promotion, and pay increases for students enrolled in CCIS programs are local decisions made by agencies not connected with Nova University. Therefore, it is the individual responsibility of current and prospective students to check with the appropriate agencies to insure that the program selected meets their specific needs. No claims are made by the university about certification or licensure.

RESERVATION OF POWER

Nova shall reserve the right to amend, modify, change, add to or delete from such rules and regulations that may affect its relations with its students, as may be prescribed by law or deemed necessary by the administration. Further, Nova reserves the right to change academic requirements, curriculum, tuition, and/or fees when in the judgment of the administration such changes are required.

ADMISSION FORMS

I. *Undergraduate Career Program* (Evening)
Application Form
Three Transcript Request Forms

II. *Undergraduate Professional Studies and Liberal Studies Programs* (Day)
Application Form
Three Transcript Request Forms

III. *Graduate Programs* (All)
Application Form
Admissions Portfolio Form
Computer-related Skills Assessment Form
Three Recommendation Forms
Three Transcript Request Forms

Undergraduate Career Program
(Evening)

Application Form
Three Transcript Request Forms

NOVA UNIVERSITY

Nova College
Career Development Programs
Marketing and Admissions
Parker Building
3301 College Avenue
Fort Lauderdale, Fl 33314
(305) 475-7034

**Undergraduate
Career Development Program
Admissions Application**

Note: The Career Development Program schedules classes on evenings and Saturdays.

(Type or print - use black pen)   DATE OF DESIRED ADMISSION: _____
                                                                    Month   Year

SOCIAL SECURITY NUMBER (U.S.A.)   SEX   DATE OF BIRTH:

_____/_____/_____   ☐ Male ☐ Female   _____/_____/_____

Full Name *(Last, First, Middle Initial)*

Legal/Permanent Address: Street & Number

City   State   Zip   Home Phone   Work Phone

Local mailing address (if different)

City   State   Zip   Home Phone

EDUCATIONAL INFORMATION:

High School from which you
graduated or will graduate: _____
                            Name   City   State   Month   Year

Or General Education Diploma (G.E.D.) completed: _____
                                                 Month   Year

TEST information required of all education majors:

SAT Scores: Verbal _____ Math _____ Total _____ Date Taken _____
    OR
ACT (Composite Score) _____ Date Taken _____

Please list all Colleges and Universities attended. Official transcripts from all institutions are required before acceptance into a degree program can be effected.

Name of College	State	Date Started	Date Ended	Degree

ACADEMIC GOALS: Check One
☐ Bachelor of Science
☐ Special Student (non-degree seeking)
☐ Undecided

Major (Check one only)
☐ Computer Information Systems
☐ Computer Systems
☐ Computer Science
☐ Computer Engineering

INSTRUCTIONAL LOCATION: ☐ Main Campus ☐ Other (Specify) _____

IN CASE OF EMERGENCY:

Name of person to contact

Relationshiip of contact (parent, friend, etc.)

Address of person to contact

Home Telephone   Work Telephone

EMPLOYMENT STATUS: *(Optional)*

Full-time   Unemployed   Part-time   Job Title _____

Employer Name   Address: Street and and Numer

City   State   Zip   Work Telephone

CITIZENSHIP STATUS:

U.S. Citizen ☐ Yes ☐ No   Resident Alien   Indicate country of citizenship _____
Is English your   Non-resident Alien   Do you require an I-20? ☐ Yes ☐ No
primary language? ☐ Yes ☐ No   If you have a visa, indicate status code: _____

TOEFEL SCORE: _____ (Required of all international applicants)
Additional procedures are required for admission of non-resident alien students

ETHNIC ORIGIN DATA: *(This information is required for reporting purposes only)* Check one of the following:

☐ White not of Hispanic Origin   ☐ Hispanic Origin   ☐ American Indian or Native Alaskan
☐ Black not of Hispanic Origin   ☐ Asian or Pacific Islander   ☐ Other _____

APPLICANT STATUS AT TIME OF APPLICATION:

First time attending college? ☐ Yes ☐ No   First time attending Nova University? ☐ Yes ☐ No

FINANCIAL AID:
Have you applied for Financial Aid?   ☐ Yes   ☐ No
Have you filed a College Scholarship Service Financial Aid Form (F.A.F.)?   ☐ Yes   ☐ No

If yes, when was the F.A.F. sent to Princeton, New Jersey? _____

HOW DID YOU FIRST HEAR ABOUT THIS PROGRAM?

☐ Family/Friend   ☐ Newspaper   ☐ Flyer or announcement   ☐ Yellow Pages
☐ Employer   ☐ College fair   ☐ High school or college counselor   ☐ Guidance Magazine
☐ Nova student or graduate   ☐ Employer   ☐ Educational Directory   (e.g., Talbot's College
☐ Nova recruiter   (e.g., Barron's, Peterson's   Outlook, Key Magazine)
☐ General knowledge in the community   College Handbook, Lovjoy's)

☐ Other: _____   _____   Please specify
          Please specify   Please specify

For Admission purposes, this application must be accompanied by a $30.00 nonrefundable application fee.

I declare that the above information, to the best of my knowledge, is complete and accurate. I agree to abide by all rules and regulations of Nova University.

_____   _____
Applicant Signature   Date

NOVA UNIVERSITY

Nova College
Undergraduate Admissions Office
Parker Building - Room 102
3301 College Avenue
Fort Lauderdale, Florida 33314
305-475-7360

CD

TRANSCRIPT REQUEST FORM

STUDENT: To request a transcript from your past school, fill in the blanks on both parts. We suggest that you call your previous school to find out if a fee should accompany this transcript request form.

Previous School or College:

Please send an official transcript of my academic work while attending your institution to Nova College. Return the form below to Nova College.

A. I attended your school from _____ to _____.

B. While in attendance my name on your records was:

_____

FULL NAME

C. My student identification number was: _____

Thank you for your assistance.

Sincerely:

_____   _____
Signature   Date

- -

PREVIOUS SCHOOL: PLEASE RETURN THIS FORM WITH TRANSCRIPT, THANK YOU.

TRANSCRIPT TRANSMITTAL FORM

Social Security Number _____   Date _____

Name _____
      Full Name (Last, First, Middle Initial)

Address _____

City _____ State _____ Zip _____

Please send _____ copies to Nova College, Undergraduate Admissions, Parker Building Room 102, 3301 College Avenue, Fort Lauderdale, Florida, 33314, (305) 475-7360.

CD

NOVA UNIVERSITY

Nova College
Undergraduate Admissions Office
Parker Building - Room 102
3301 College Avenue
Fort Lauderdale, Florida 33314
305-475-7360

CD

TRANSCRIPT REQUEST FORM

STUDENT: To request a transcript from your past school, fill in the blanks on both parts. We suggest that you call your previous school to find out if a fee should accompany this transcript request form.

Previous School or College:

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A. I attended your school from _____ to _____ .

B. While in attendance my name on your records was:

_____
FULL NAME

C. My student identification number was: _____

Thank you for your assistance.

Sincerely:

_____   _____
Signature   Date

PREVIOUS SCHOOL: PLEASE RETURN THIS FORM WITH TRANSCRIPT, THANK YOU.

TRANSCRIPT TRANSMITTAL FORM

Social Security Number _____   Date _____

Name _____
        Full Name (Last, First, Middle Initial)

Address _____

City _____ State _____ Zip _____

Please send _____ copies to Nova College, Undergraduate Admissions, Parker Building Room 102, 3301 College Avenue, Fort Lauderdale, Florida, 33314, (305) 475-7360.

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. Nova University practices a policy of nondiscrimination in employment and admission. Nova University does not discriminate on basis of race, color, age, sex, religion or creed, national or ethnic origin, or handicap.

CD

NOVA UNIVERSITY
Nova College
Undergraduate Admissions Office
Parker Building - Room 102
3301 College Avenue
Fort Lauderdale, Florida 33314
305-475-7360

TRANSCRIPT REQUEST FORM

STUDENT: To request a transcript from your past school, fill in the blanks on <u>both</u> parts. We suggest that you call your previous school to find out if a fee should accompany this transcript request form.

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Please send an official transcript of my academic work while attending your institution to Nova College. Return the form below to Nova College.

A. I attended your school from _____ to _____.

B. While in attendance my name on your records was:

_____
FULL NAME

C. My student identification number was: _____

Thank you for your assistance.

Sincerely:

_____   _____
Signature   Date

- -

PREVIOUS SCHOOL: PLEASE RETURN THIS FORM WITH TRANSCRIPT, THANK YOU.

TRANSCRIPT TRANSMITTAL FORM

Social Security Number _____   Date _____

Name _____
      Full Name (Last, First, Middle Initial)

Address _____

City _____ State _____ Zip _____

Please send _____ **copies to Nova College,** Undergraduate Admissions, Parker Building Room 102, 3301 College Avenue, Fort Lauderdale, Florida, 33314, (305) 475-7360.

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. Nova University practices a policy of nondiscrimination in employment and admission. Nova University does not discriminate on basis of race, color, age, sex, religion or creed, national or ethnic origin, or handicap.

Undergraduate Professional Studies and Liberal Studies Programs (Day)

Application Form
Three Transcript Request Forms

NOVA UNIVERSITY

Nova College Admissions Office
3301 College Avenue
Fort Lauderdale, Fl 33314
(305) 475-7360

Undergraduate Application Form

This is a Nova College application for students interested in either the **Liberal Studies** or **Professional Studies** programs. Classes for both of these programs meet during the day.

(This form will also serve as our Nova scholarship and grant application)

APPLICATION FEE $30.00

(Type or print - use black pen)

DATE OF DESIRED ADMISSION: _____
                            Month   Year

SOCIAL SECURITY NUMBER (U.S.A.)   SEX   DATE OF BIRTH:

_____/_____/_____   ___ Male ___ Female   _____/_____/_____

Full Name *(Last, First, Middle Initial)*

Legal/Permanent Address: Street & Number

City   State   Zip   Home Phone   Work Phone

Mailing Address While Attending Nova (Local)

EDUCATIONAL INFORMATION:

High School from which you
graduated or will graduate: _____
                            Name   City   State   Month   Year

Or General Education Diploma (G.E.D.) completed: _____
                                                Month   Year

Please list all Colleges and Universities attended. Official transcripts from all are required.

Name of College	State	Date Started	Date Ended	Degree

ACADEMIC GOALS:
Please Check One

☐ Bachelor of Science

☐ Special Student (non-degree seeking)

☐ Certificate only

Major (Check one only)

Computer Engineering ☐
Computer Information Systems ☐
Computer Science ☐
Computer Systems ☐

PARENT'S NAME AND ADDRESS: (or emergency contact)

_____
Name

_____
Address   Home Telephone   Work Telephone

CITIZENSHIP STATUS:

_____ U.S. Citizen   Do you require an I-20?   Yes_____   No_____
_____ Resident Alien   If you have a Visa, indicate Status Code: _____
_____ Non-resident Alien   Country of Citizenship: _____
Additional procedures are required
for admission of non-resident Alien status   What language do you speak at home?_____

ETHNIC ORIGIN DATA: _(This information is required for reporting purposes only)_
Check one of the following:

____ White not of Hispanic Origin   ____ Hispanic Origin   ____ American Indian or Native Alaskan
____ Black not of Hispanic Origin   ____ Asian or Pacific Islander

APPLICANT STATUS AT TIME OF APPLICATION:

First time attending college? ☐ Yes ☐ No   First time attending Nova University? ☐ Yes ☐ No

TEST INFORMATION: At least one is required - ACT and/or SAT preferred

A. PSAT scores: Verbal _____   Math _____   Total _____   Date taken _____

B. SAT scores: Verbal _____   Math _____   Total _____   Date taken _____

C. ACT composite score _____

D. TOEFL score _____ (Required of all non-English speaking applicants)

E. Is your first Language English?   ☐ Yes   ☐ No

IN-SCHOOL ACTIVITIES:

A. School Organizations (e.g., Student Government, Band, Publications, Dramatics, etc.):

B. Scholastic Honors:

C. Athletics (indicate specific sports including event or position, varsity or intramural):

OTHER ACTIVITIES

A. Employment experiences:

B. Hobbies or recreational interests:

HOW DID YOU FIRST HEAR ABOUT THIS PROGRAM?

☐ Family/Friend   ☐ Newspaper   ☐ Flyer or announcement   ☐ Yellow Pages

☐ Employer   ☐ College fair   ☐ High school or college counselor   ☐ Guidance Magazine
                                                                                       (e.g., Talbot's College
☐ Nova student or graduate   ☐ Educational Directory   Outlook, Key Magazine)
                                              (e.g., Barron's, Peterson's
☐ General knowledge in the community   College Handbook, Lovejoy's)

                                                                              _____
                                                                                 Please specify

Other: _____   _____
          Please specify   Please specify

Do you have any friends or relatives attending Nova? _____ Yes _____ No

Who? _____

Are they attending now? _____ Graduated? _____

Have you visited teh Nova campus? _____ Yes _____ No   If yes, with whom did you speak? _____

Will you need on-campus housing? _____ Yes _____ No

What clubs, athletic teams or activities do you plan to participate in at Nova? Check as many as you like

☐ Baseball (men)   ☐ Newspaper

☐ Basketball (men)   ☐ Student Government Association

☐ Tennis (women)   ☐ Literary Magazine

☐ Soccer (men)   ☐ International Student Club

☐ Golf (men)   ☐ Yearbook

☐ Cross Country (coed)   ☐ Resident Student Association

☐ Volleyball (women)   ☐ Women's Forum

☐ Cheerleading (coed)   ☐ Black Student Association

To what other schools have you applied? _____

_____

_____

_____

Have you applied for Financial Aid? ☐ Yes ☐ No

Have you filed a College Scholarship Service Financial Aid Form (F.A.F.)? ☐ Yes ☐ No

  If yes, when was the F.A.F. sent to Princeton, New Jersey? _____

ESSAY   (This section is required and is used as an evaluation tool by the Admissions Committee):

In an original organized essay, please summarize your career goals, and describe how you feel Nova University can help you meet those goals.

(Continued on other side)

I DECLARE THAT THE ABOVE INFORMATION, TO THE BEST OF MY KNOWLEDGE, IS COMPLETE AND ACCURATE. I AGREE TO ABIDE BY ALL RULES AND REGULATIONS OF NOVA UNIVERSITY.

_____   _____
Applicant Signature   Date

Send Application To:

    Nova College
    Office of Undergraduate Admissions
    3301 College Avenue
    Fort Lauderdale, Florida 33314
    (305) 475-7360

NOVA UNIVERSITY
Nova College Day Program
Undergraduate Admissions Office P-100
3301 College Avenue
Fort Lauderdale, Florida 33314
305-475-7360

TRANSCRIPT REQUEST FORM

To request a transcript from your past school to Nova University, fill in the blanks on BOTH parts.

Dear High School or Previous College:

Please send an official transcript of my academic work while attending your institution to Nova College. Return the form below to Nova University.

A.   I attended your school from _____ to _____.

B.   While in attendance my name on your records was:

_____
FULL NAME

C.   My student identification number was: _____

Thank you for your assistance.

Sincerely:

_____   _____
Signature   Date

- -

DEAR PREVIOUS SCHOOL: PLEASE RETURN THIS BOTTOM FORM WITH TRANSCRIPT, THANK YOU.

TRANSCRIPT TRANSMITTAL FORM

Social Security Number _____   Date _____

Name _____
        Full Name *(Last, First, Middle Initial)*

City _____   State _____   Zip _____

Please send _____ copies to Nova College Admissions Office (P-100), 3301 College Avenue, Fort Lauderdale, Florida, 33314, (305) 475-7360.

NOVA UNIVERSITY
Nova College Day Program
Undergraduate Admissions Office P-100
3301 College Avenue
Fort Lauderdale, Florida 33314
305-475-7360

TRANSCRIPT
REQUEST FORM

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B.   While in attendance my name on your records was:

_____
FULL NAME

C.   My student identification number was: _____

Thank you for your assistance.

Sincerely:

_____   _____
Signature   Date

- -

DEAR PREVIOUS SCHOOL: PLEASE RETURN THIS BOTTOM FORM
WITH TRANSCRIPT, THANK YOU.

TRANSCRIPT TRANSMITTAL FORM

Social Security Number _____   Date _____

Name _____
       Full Name *(Last, First, Middle Initial)*

City _____   State _____   Zip _____

Please send _____ copies to Nova College Admissions Office (P-100), 3301 College Avenue, Fort Lauderdale, Florida, 33314, (305) 475-7360.

NOVA UNIVERSITY
Nova College Day Program
Undergraduate Admissions Office P-100
3301 College Avenue
Fort Lauderdale, Florida 33314
305-475-7360

TRANSCRIPT
REQUEST FORM

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Dear High School or Previous College:

Please send an official transcript of my academic work while attending your institution to Nova College. Return the form below to Nova University.

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B.   While in attendance my name on your records was:

_____
FULL NAME

C.   My student identification number was: _____

Thank you for your assistance.

Sincerely:

_____   _____
Signature   Date

- -

**DEAR PREVIOUS SCHOOL: PLEASE RETURN THIS BOTTOM FORM
WITH TRANSCRIPT, THANK YOU.**

TRANSCRIPT TRANSMITTAL FORM

Social Security Number _____   Date _____

Name _____
          Full Name *(Last, First, Middle Initial)*

City _____   State _____   Zip _____

Please send _____ copies to Nova College Admissions Office (P-100), 3301 College Avenue, Fort Lauderdale, Florida, 33314, (305) 475-7360.

Graduate Programs
(All)

Application Form
Admissions Portfolio Form
Computer-related Skills Assessment Form
Three Recommendation Forms
Three Transcript Request Forms

NOVA UNIVERSITY

Center for Computer & Information Sciences
3301 College Avenue
Fort Lauderdale, Fl 33314
305-475-7047 or 800-541-6682 ext. 7047

GRADUATE ADMISSIONS APPLICATION

APPLICATION FEE $30.00
Nonrefundable

If applying for the Computer Science or the Information Systems (campused-based) programs, **DO NOT** complete the box below. Applications for ALL other programs should complete this box.

Choose program **FORMAT**	
Seminar _____ (Weekend Meetings)	Institute _____ (Seminars)
Meets in Ft. Lauderdale	Meets in Ft. Lauderdale

Type or Print - Use Black Pen Only

Date of Desired
Admission: _____

Soc. Sec. No: _____/_____/_____

Date of Birth _____/_____/_____

Sex: ( ) Male   ( ) Female

Full Name *(Last, First, Middle Initial)*

Legal/Permanent Address: Street & Number

City, State, Zip   Home Phone   Work Phone

Mailing Address While Attending Nova (Local)

EMERGENCY CONTACT:

Name

Address   Home Phone   Work Phone

ACADEMIC GOALS: Please Check One

MASTER'S PROGRAMS	DOCTORAL PROGRAMS
☐ Computer Science ☐ Computer Education ☐ Information Systems *(Campus-based)* ☐ Information Systems *(Computer-based)* ☐ Training & Learning ☐ Information Tech. & Resource Mgt. ☐ 4 year Combined Master's/Doctoral Option _____ **Indicate Which Program**	☐ Computer Science ☐ Information Systems ☐ Computer Education ☐ Information Science ☐ Training & Learning

EDUCATIONAL INFORMATION

Please list all educational institutions. Official transcripts from all are required.

Name of Institution	State	Started	Ended	Major Field	Degree	GPA

CITIZENSHIP STATUS:

☐ U.S. Citizen
☐ Resident Alien
☐ Non-resident Alien

Additional procedures are required
for admission of non-resident Alien status

Do you require an I-20? ☐ Yes ☐ No
If you have a Visa, indicate Status Code: _____
Country of Citizenship: _____

Language spoken at home: _____

ETHNIC ORIGIN DATA: *(This information is requested for reporting purposes only)*
Check one of the following:

☐ White not of Hispanic Origin
☐ Black not of Hispanic Origin
☐ American Indian or Native Alaskan

☐ Hispanic Origin
☐ Asian or Pacific Islander

APPLICANT STATUS AT TIME OF APPLICATION:

First time attending Nova University? ☐ Yes ☐ No   Returning to Nova after absence? ☐ Yes ☐ No

FINANCIAL AID:

Have you applied for Financial Aid? ☐ Yes ☐ No
Have you filed a College Scholarship Service Financial Aid Form (F.A.F.)? ☐ Yes ☐ No
If yes, when was the F.A.F. sent to Princeton, New Jersey? _____
                                                                      Date

Are you Eligibile for Veteran Assistance (V.A.) benefits? ☐ Yes ☐ No

CENTER SPECIFIC DATA:

Employer:_____

Job Title: _____

HOW DID YOU FIRST HEAR ABOUT THIS PROGRAM?

☐ Colleague/Friend   ☐ Advertisement   ☐ Flyer/Announcement
☐ Conference   ☐ Employer   ☐ Nova Staff
☐ Direct Mail   ☐ Educational Directory   ☐ Professional Publication
☐ Nova Student/Graduate   ☐ College Professor/Counselor
Other:
Specify:_____

ESSAY:

Please describe your reasons for pursuing this degree. Why did you decide to apply to Nova University? Include the nature of work that you are involved in, and your long-term goals. Please continue on another page if necessary.

Family Educational Rights and Privacy Act FERPA) Buckley Amendment

Pursuant to the Buckley Amendment enacted on December 31, 1974, *I DO   I DO NOT* give permission for my name, address and/or phone number to be used for promotional purposes. Please circle the appropriate phrase and sign your name.

_____   _____
Applicant's signature   Date

I DECLARE THAT THE INFORMATION CONTAINED \ ̄HIN THIS APPLICATION, TO THE BEST OF MY KNOWLEDGE, IS COMPLETE AND A ̲CURATE. I AGREE TO ABIDE BY ALL RULES AND REGULATIONS OF NOVA UNIVERSITY.

_____   _____
Applicant Signature   Date

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NOVA UNIVERSITY
Center for Computer & Information Sciences
3301 College Avenue
Ft. Lauderdale, FL 33314

GRADUATE ADMISSIONS
PORTFOLIO FORM

Applicant Signature	Date

Please complete the following Admissions Portfolio to the best of your ability. Provide documentation or examples of any of these items that you feel necessary to support your portfolio. When you have completed these items, sign the portfolio form and return it with your portfolio.

Please type or use black pen.

1. Employment History (specific job descriptions and dates)

2. Experience with automated systems or computers (Micros, mini or mainframe -- describe the nature and length of the experience)

3. What computer equipment do you have available for use in this program? (Terminals, mainframes, micro computers, etc). Also indicate the types of operating systems you have used on these machines.

4. Graduate courses for credit

5. Workshops, seminars, conferences, and special meetings (list topics)

6. Publications, proposals, and reports you have authored

7. Major improvement projects or innovations you have instituted in your organization or institution

8. Awards, achievements, or special recognition you have received

9. Offices held in professional organizations

10. Community involvement (clubs, churches, committees, etc.)

NOVA UNIVERSITY
Center for Computer & Information Sciences
3301 College Avenue
Ft. Lauderdale, FL 33314

COMPUTER-RELATED
SKILLS ASSESSMENT FORM
(Graduate only)

If applying for the Computer Science programs, DO NOT complete this form. ALL other programs complete.

SOCIAL SECURITY NUMBER   DATE

FULL NAME (*Last, First, Middle Initial*)

HOME ADDRESS

CITY   STATE   ZIP

PROVINCE   COUNTRY

HOME PHONE   WORK PHONE

Please Indicate Program (check one)

____ Master of Science in Computer Education   ____ Doctor of Education in Computer Education
____ Master of Science in Information Systems   ____ Doctor of Science in Information Systems
____ Master of Science in Training & Learning   ____ Doctor of Science in Training & Learning
____ Master of Science in Information Technology   ____ Doctor of Science in Information Science
      and Resource Management

____ 4 year Combined Master's/Doctoral Option: _____
                                                   Indicate Which Specialty

Please complete the following by either circling the appropriate response or filling in the blank.

How would you rate your overall computer ability? *Please circle*   1   2   3   4   5
      0 = I have no experience with computers.
      3 = I am able to use standard software (i.e., Wordperfect, Lotus 1-2-3, Appleworks).
      5 = I am a very experienced computer user and I can do almost anything with a computer.

Do you have computer experience in:

1. Wordprocessing   ____ Yes ____ No

      Software Used: _____   _____   _____

GO TO NEXT PAGE

2. Spreadsheet analysis   _____ Yes _____ No

     Software Used: _____

3. Database Management   _____ Yes _____ No

     Software Used: _____

What type of computer do you have at **home**?

1. IBM or IBM-compatible   _____ Yes _____ No

2. Apple II series   _____ Yes _____ No

3. Apple MAC series   _____ Yes _____ No

4. Other(s): _____

What type of computer are you able to use at **work**?

1. IBM or IBM-compatible   _____ Yes _____ No

2. Apple II series   _____ Yes _____ No

3. Apple MAC series   _____ Yes _____ No

4. Mainframe, Midi, or Mini Computer   _____ Yes _____ No

5. Dedicated Workstation   _____ Yes _____ No

6. Other(s): _____

How many years have you been using a computer?   _____ years

Are you able to use a modem and a computer to
upload and download files?   _____ Yes _____ No

Are you able to use a modem and a computer to
gain access to an electronic bulletin-board?   _____ Yes _____ No

NOVA UNIVERSITY
Center for Computer and Information Sciences
Admissions Office
3301 College Avenue
Ft. Lauderdale, FL 33314

GRADUATE TRANSCRIPT
REQUEST FORM

To request a transcript from your previous school to Nova University, fill in the blanks on BOTH parts.

Dear Alma Mater:

Please send to Nova University an official transcript of my academic work while attending your institution. Return the form below to Nova University with my transcript.

A. I attended your school from _____ to _____.

B. While in attendance my name on your records was:

_____

FULL NAME

C. My student identification number was: _____

Thank you for your assistance.

Sincerely:

_____   _____
Signature   Date

- -

TRANSCRIPT TRANSMITTAL FORM

To: Alma Mater
From: Nova University CCIS Admissions Office

Please return this form with transcript. Thank you.

Social Security Number _____ Date _____

Name _____
        Full Name *(Last, First, Middle Initial)*

City _____ State _____ Zip _____

Please send _____ copies to Nova University, CCIS Admissions Office, 3301 College Avenue, Fort Lauderdale, Florida 33314.

_____
(Please enter academic goal)

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**GRADUATE
RECOMMENDATION
FORM**

Applicant's Section

Full Name (Please Print)

Family Educational Rights and Privacy Act (FERPA) Buckley Amendment

Under the provisions of this act you have the right, if you enroll at Nova University, to review your educational records. The act further provides that you may waive your right to see recommendations for admission. Please indicate below by circling the appropriate phrase and signing your name whether or not you wish to waive that right. <u>I WAIVE</u>   <u>DO NOT WAIVE</u>   any right of access that I have to this recommendation.

Applicant's signature   Date

Recommender's Section

Name of Recommender   Title or Position

University or Company   Telephone

Address   (City, State, Zip)

The programs offered by the Center for Computer and Information Sciences are designed to prepare outstanding students each year. The Admissions Committee would appreciate your assessment of this applicant's potential. Your evaluation will be regarded as confidential information, exclusively for the use of the Admissions Committee. Please complete both sides of this form. If more space is needed, please continue on additional sheets (label each with a page number and the applicant's name). Please return the completed form to:

<div align="center">

NOVA UNIVERSITY
Graduate Admissions Committee
Center for Computer & Information Sciences
3301 College Avenue
Fort Lauderdale, Florida 33314

</div>

Thank you for taking the time to respond. The Admissions Committee feels that recommendations are among the most valuable data in the selection process. We sincerely appreciate your help.

Recommender's signature   Date

<div align="center">

(OVER)

</div>

EVALUATION CRITERIA:

The Admission Committee's assessment of this student is based strongly on your recommendation. How long have you known this applicant, and in what capacity? Does this applicant have the maturity and stability to be able to work independently and with others? Please describe the particular strengths/weakness of this applicant. Also describe any special talents or experience that the applicant can bring to the program of study. If you have worked with the applicant on any special projects, please describe his/her role on the project and give an evaluation of his/her performance.

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| |
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| Applicant's signature   Date |
└───┘

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