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Doctoral Degree in Computer Education

Nova Southeastern University

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Doctoral Degree in Computer Education

**You can earn the Doctor of Education (Ed.D.) degree
with a major in computer education.**

The Center for Computer-Based Learning offers a three-year doctoral degree program with a major in computer education. This degree is designed for educators of all types: preschool, elementary, secondary, college, university, and industry.

The degree program consists of eight study areas plus three practicums. Students earn 24 semester hours per year for a total of 72 semester hours. Students use a microcomputer, modem, and essential software; therefore, much of the work is home-based via telecommunications.

Summer seminars (one intensive week each) are spent in a cluster format on campus in Fort Lauderdale. One-week winter seminars are held on campus and/or in conjunction with a major national association such as the Association for Educational Communications and Technology (AECT). Each student also becomes a member of AECT and the Division for Instructional Systems and Computers (DISC).

The eight **study areas** that must be completed are—
Digital Computers and Telecommunications
Educational Research and Evaluation
Learning Theory and Computer Aided Learning (CAL)
Database Management Systems
Courseware
Structured Programming
Instructional Systems
Educational Futures

For the successful completion of each of the study areas, the student earns 6 semester hours of credit. In addition, the student earns six semester hours each for the completion of Practicums 1 and 2. The student earns 12 semester hours of credit for successful completion of the MARP.

THE DEGREE The degree is the doctor of education degree (Ed.D.) The major is computer education.

ADMISSION Admission to the doctor of education program is dependent upon the applicant's being employed in an education-related field. To be admitted, applicants must hold a master's degree from a regionally accredited institution and have recommendations as being unusually competent and computer literate educators. Applicants must also demonstrate competency in BASIC programming by submitting a computer program or equivalent that they created. (Applicants lacking advanced BASIC techniques may be admitted on a conditional basis for a maximum of one year while they obtain that competency level). Applicants must prepare and submit a portfolio describing their prior experience, three letters of recommendation, a resume, and have a record of success in prior graduate work. It is expected that applicants will demonstrate effective oral and written communication skills.

RESIDENCY Each summer for three years students are required to spend one week on the Nova campus. In addition, each year students must attend a winter seminar meeting. The first year's winter seminar is usually held on the main campus in Fort Lauderdale. First year students may elect to attend the winter session in conjunction with the national conference (AECT) instead of the campus meeting. The second year's winter seminar is held in conjunction with the Association for Educational Communications and Technology's annual conference—or a similar professional body. Students have a choice for their third winter seminar. It may be in conjunction with the national association again or through an individually proposed plan for active participation with other national and state associations that better meet the student's particular needs.

PROGRAM REQUIREMENTS There are eight study areas that must be completed for the degree. Three practicums, including a major applied research project (MARP) undertaken by students to apply the use of microcomputers to education. Study areas and practicums are graded on a Pass/Fail basis. Specified competencies must be achieved within the stated time limits (usually six months) and at the criterion level indicated to receive a "Pass." Students must also attend three summer and three winter seminars. In addition, students must design and implement an approved individualized professional development experience project (PEP) to help insure their continued professional growth and the development of a network of colleagues on a national level.

COURSE DESCRIPTIONS

STUDY AREA #1—DIGITAL COMPUTERS AND TELECOMMUNICATIONS

CED 7711—DIGITAL COMPUTERS IN EDUCATION Students will begin to develop the skills needed to demonstrate mastery of the key concepts and rules pertaining to the use of digital computers and the UNIX* operating system.

CED 7712—APPLICATIONS IN TELECOMMUNICATIONS AND NETWORKING Expanding on their basic skills within the UNIX operating system, students will develop advanced competencies in communications to work with the UNIX environment and to apply this knowledge to access information in other databases via telecommunications.

STUDY AREA #2—EDUCATIONAL RESEARCH AND EVALUATION

CED 7721—EDUCATIONAL RESEARCH AND EVALUATION Basic statistical concepts and techniques of research design will be mastered and utilized, including the development of a potential practicum proposal.

CED 7722—APPLICATIONS OF EDUCATIONAL RESEARCH AND EVALUATION Students will use computer-based research and statistical resources to apply the basic concepts of research and evaluation to educational problems.

*UNIX is a trademark of Bell Laboratories.

STUDY AREA #3—LEARNING THEORY AND CBL

CED 7751—LEARNING THEORIES 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 of this course.

CED 7731—CURRICULUM DESIGN AND CBL During this course students will explore 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.

STUDY AREA #4—DATABASE MANAGEMENT SYSTEMS

CED 7745—FUNDAMENTALS OF DATABASE MANAGEMENT SYSTEMS Students will become familiar with database management systems, hierarchical and relational models, design philosophies, data dictionaries, and data directories.

CED 7746—APPLICATIONS OF DATABASE MANAGEMENT SYSTEMS Each student will be expected to build his or her own database and to utilize it in an appropriate situation selected by the student. The student will identify major issues, problems, and the structure of Management Information Systems (MIS).

STUDY AREA #5—COURSEWARE

CED 7755—COURSEWARE DESIGN FOR COMPUTER-BASED LEARNING This course enables students to explore such topics as principles involved in authoring systems; graphics; documentation design and formatting; packaging and marketing software and courseware for training and educational programs; computer-managed instruction; courseware evaluation and selection guidelines; copyrighting; software development tools; database management techniques in courseware design; and educational applications of video disc systems.

CED 7756—APPLICATIONS OF SOFTWARE AND COURSEWARE DESIGN PRINCIPLES Students will be required to demonstrate their knowledge of courseware design principles by designing and implementing a project in which selected principles may be applied.

STUDY AREA #6—STRUCTURED PROGRAMMING

CED 7732—APPLICATION OF CBL DESIGN PRINCIPLES IN A STRUCTURED PROGRAMMING LANGUAGE Students will be introduced to a structured programming language and its value for CBL.

CED 7741—ADVANCED PASCAL Building a foundation in structured programming, students will become proficient in the use of the PASCAL programming language.

STUDY AREA #7—INSTRUCTIONAL SYSTEMS

CED 7761—INTRODUCTION TO SYSTEMS ANALYSIS Investigating the skills and techniques needed to analyze computer systems design problems, will enable students to propose alternative problem solving approaches. Systems models, development and design, and networking will be included in the topics explored.

CED 7762—APPLICATIONS OF SYSTEMS ANALYSIS Students will conduct a study of selected computer systems, identify a problem, and prepare a final proposal for the solution of the problem selected. Implementation, testing, measuring effectiveness and efficiency, and reporting will constitute the major focus of this course.

STUDY AREA #8—EDUCATIONAL FUTURES

CED 7781—AN INTRODUCTION TO EDUCATIONAL FUTURES The impact of technology on society today and in the near future will be explored. The writings of educational futurists and the techniques they utilize will be discussed.

CED 7790—SPECIALIZED PROJECTS Students with unique needs and interests may design specific projects for investigation under the guidance of an assigned faculty mentor. A complete plan will be submitted and approved with the final product clearly documented and evaluated.

PRACTICUMS

CED 7701—PRACTICUM IN THE UTILIZATION OF COMPUTERS IN EDUCATION A highly structured process to allow students to investigate and attempt to solve an educational problem that is directly related to their work. The microcomputer and/or the on-line system will be utilized in the solution strategy.

CED 7702—PRACTICUM IN THE UTILIZATION OF COMPUTERS IN THE PROBLEM SOLVING PROCESS The practicum process will be utilized to identify and solve a problem that is amenable to the use of computers for its solution. There is to be an interaction between the graduate study completed and the working environment of the practicum.

CED 7703—MAJOR APPLIED RESEARCH PROJECT (MARP) As the capstone of the student's educational experience, the Major Applied Research Project must be potentially useful in a professional situation, and it must lead to a significant improve-

ment in educational practices through the utilization of "high technology." An extensive proposal must be approved before the implementation phase can occur. The final report must be thorough and exemplify doctoral-level writing skills.

INDEPENDENT AND REGIONAL CLUSTER FORMATS Students may elect to pursue the degree in one of two formats. Independent Format students meet for two week-long intensive formats each year (summer and winter) and spend approximately six months on-line between meetings. Regional Cluster Format students meet about the same number of days as the independents, but they meet four or five times a year over weekends at a regional location. There are Regional Clusters in several different states; starting dates for new clusters are determined when there are sufficient numbers of students to begin a new group.

STUDENT FLOW MODEL The order in which study areas are completed will differ with the format selected and with the term in which the student enters the program. Students are admitted into the program during any month of the year once they have submitted a successful application packet, completed an oral interview, and received formal acceptance. All new students begin the program with Study Area #1; it is accomplished on-line from their home setting in a self-paced mode. Students entering the Independent Format between August and January are classified with the January Cluster; those beginning between February and July and part of the July Cluster. Students entering a Regional Cluster are classified as part of that (geographical) cluster.

SEQUENCE OF INSTRUCTION

The following represent typical schedules for both the **INDEPENDENT** format and the **CLUSTER** format.

It is recommended that students begin work in the first study area at least three months before the scheduled start date in order to become familiar with the on-line operations.

INDEPENDENT FORMAT—CURRICULUM SEQUENCE (JANUARY START)

FIRST YEAR	SECOND YEAR	THIRD YEAR
TERM 1 STUDY AREA #1—6 semester credits. Digital Computers and Telecommunications	TERM 3 STUDY AREA #6—6 semester credits. Structured Programming	TERM 5 STUDY AREA #7—6 semester credits. Instructional Systems
STUDY AREA #3—6 semester credits. Learning Theory and CBL	STUDY AREA #5—6 semester credits. Courseware	TERM 6 STUDY AREA #8—6 semester credits. Educational Futures MARP—12 semester credits
TERM 2 STUDY AREA #2—6 semester credits. Educational Research and Evaluation PRACTICUM #1—6 semester credits.	TERM 4 STUDY AREA #4—6 semester credits. Database Management Systems PRACTICUM #2—6 semester credits.	

INDEPENDENT FORMAT— CURRICULUM SEQUENCE (JULY START)

FIRST YEAR	SECOND YEAR	THIRD YEAR
TERM 1 STUDY AREA #1—6 semester credits. Digital Computers and Telecommunications	TERM 3 STUDY AREA #4—6 semester credits. Database Management Systems	TERM 5 STUDY AREA #7—6 semester credits. Instructional Systems
STUDY AREA #2—6 semester credits. Educational Research and Evaluation	STUDY AREA #5—6 semester credits. Courseware	TERM 6 STUDY AREA #8—6 semester credits. Educational Futures MARP—12 semester credits
TERM 2 STUDY AREA #3—6 semester credits. Learning Theory and CBL PRACTICUM #1—6 semester credits.	TERM 4 STUDY AREA #6—6 semester credits. Structured Programming PRACTICUM #2—6 semester credits.	

CLUSTER FORMAT—TYPICAL CURRICULUM SEQUENCE

FIRST YEAR	SECOND YEAR	THIRD YEAR
TERM 1 STUDY AREA #1 —6 semester credits. Digital Computers and Telecommunications STUDY AREA #3 —6 semester credits. Learning Theory and CBL TERM 2 STUDY AREA #2 —6 semester credits. Educational Research and Evaluation PRACTICUM #1 —6 semester credits.	TERM 3 STUDY AREA #4 —6 semester credits. Database Management Systems STUDY AREA #5 —6 semester credits. Courseware TERM 4 STUDY AREA #6 —6 semester credits. Structured Programming PRACTICUM #2 —6 semester credits.	TERM 5 STUDY AREA #7 —6 semester credits. Instructional Systems TERM 6 STUDY AREA #8 —6 semester credits. Educational Futures MARP —12 semester credits

DELIVERY SYSTEM There are five major components in the delivery of instruction in this program:

- 1) Telecommunications—interactive learning in each study area using a portable microcomputer, modem and software; on-line using the UNIX operating system and off-line using individual word processors, etc.
- 2) Summer and Winter Seminars—residential setting for completion of study areas and the introduction of new study areas and guest experts.
- 3) National Meetings—intensive workshop format for meetings and study of selected topics plus exposure and participation in national conferences with national experts and an opportunity to contribute to the profession.
- 4) Optional Cluster Meetings with another Nova Center—meeting at regional locations throughout the U.S., students may attend once-a-month weekend meetings with students from the Center for Higher Education as an alternative way to complete nine credits of work in two study areas (i.e. #2 and #3).
- 5) Bimonthly, Regional, Cluster Format Meetings—a complete, alternative approach: meeting on weekends at various regional locations.

COMPUTERS Students must provide and maintain their own microcomputers, modems, and communications software. Almost any brand of microcomputer can be used (8 or 16 bit) as long as it can be upgraded to communicate on-line and can emulate a common terminal such as a vt-52, vt-100, or H-19. Applicants will be put in touch with students who already have experience with the type of computer they plan to use so they have some specific advice. Micros are to be brought to seminars held on the main campus.

APPLICATION PROCEDURE Application should be made at least one month prior to the desired starting time of the program. Students should try to begin their initial on-line work at least two to three months before the initial meeting date of their cluster. Application is made to the Ed.D. Admissions Committee, Nova University, Center for Computer-Based Learning (CBL). Applications are reviewed each month; new groups in the Independent Format begin quarterly (i.e. January, April, July, and October).

TUITION Tuition and fees will be paid for 12 consecutive quarters. Students register for courses twice a year but payments may be made quarterly. Tuition for 1985-1986 is \$3,700/year plus transportation, room, and board for the seminar and national meetings. Quarterly payments for the current year are \$950; there is a \$25 registration/service fee included in each quarterly payment. Tuition and fees are subject to change.

OTHER FEES Nonrefundable fees include an application fee of \$25 that must be submitted with the original application form; a matriculation fee of \$250 that is due upon acceptance into the program; a \$50 late fee that is added to the quarterly payment on

overdue payments; a \$100 leave-of-absence fee, if it is requested by the student; and a readmittance fee that is equivalent to the current matriculation fee for students approved by the Admissions Committee for readmittance after withdrawing.

For those not completing their work, including the practicums and the MARP, by the end of a 3½ year period, a continuation fee equivalent to one-half of the tuition will be charged each quarter.

There is a graduation fee and a separate charge for cap and gown rental.

PAYMENT SCHEDULE Applicants, once accepted into the program, will make an initial payment of \$1,200; this includes the matriculation fee, registration fee, and first quarterly payment. The remaining tuition for the first year will be made in three equal payments at the beginning of each remaining quarter. Tuition for the next two years may be made in entirety at the beginning of each year or in four equal payments each year at the then-current tuition rates.

WITHDRAWAL To withdraw from the program, the student is to submit a letter of withdrawal to the Ed.D. Admissions Committee, CBL. Students will be liable for tuition until the withdrawal letter is received by the University. A three day "cooling off" period is provided in states where applicable. Students failing to pass a study area or a practicum will be placed on probation. Incomplete grades that are not made up within six months will become "No Pass" grades unless the time period is officially extended. Students failing to pass two study areas will result in dismissal from the program. A student withdrawn or terminated by the University will be notified in writing.

ADDITIONAL INFORMATION Additional information can be obtained by writing to Doctoral Program in Computer Education, Center for Computer-Based Learning, Nova University, 3301 College Avenue, Fort Lauderdale, Florida 33314 or by calling 305/475-7445.

Information regarding financial aid and veteran's benefits can be obtained by contacting the Nova University Financial Aid Office, 305/475-7411.

Information in this fact sheet subject to change.

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Nova University is accredited by The Commission on Colleges, Southern Association of Colleges and Schools and admits students of any race, color, and national or ethnic origin.