

Appendix C

THE UNIVERSITY OF NORTH CAROLINA Request for Authorization to Establish a New Degree Program

INSTRUCTIONS: Please submit five copies of the proposal to the Senior Vice President for Academic Affairs, UNC Office of the President. Each proposal should include a 2-3 page executive summary. The signature of the Chancellor is required.

Date: September 22, 2008

Constituent Institution: UNCW

CIP Discipline Specialty Title: Information Technology

CIP Discipline Specialty Number: 11.0103 Level: Baccalaureate

Exact Title of the Proposed Program: Information Technology

Exact Degree Abbreviation (e.g. B.S., B.A., M.A., M.S., C.A.S.): B.S.

Does the proposed program constitute a substantive change as defined by SACS? Yes ___ No

a) Is it at a more advanced level than those previously authorized? Yes ___ No

b) Is the proposed program in a new discipline division? Yes ___ No

Proposed date to establish degree program (allow at least 3-6 months for proposal review):

month: August year: 2009

Do you plan to offer the proposed program away from campus *during the first year of operation*?

Yes ___ No

I. Description of the Program

A. Describe the proposed degree program (i.e., its nature, scope, and intended audience).

The Department of Computer Science in the College of Arts and Sciences and the Department of Information Systems and Operations Management in the Cameron School of Business will offer a multi-disciplinary program leading to a BS degree in Information Technology (IT). The program will closely follow the guidelines set forth by professional societies for such programs including the Association for Computing Machinery, the Association of Information Systems, and the IEEE Computer Society.

The proposed program will consist of 56 hours of required courses and a minimum of 9 hours of electives (total 65 hours). The goals of this program are to develop students' skills in the critical and practical understanding of information technology and to prepare them for information technology-related work and/or further study at the graduate level. The curriculum will provide a foundation for information technology professionals to have a perspective of the rapidly expanding and evolving science of technology and how it can be managed and leveraged to support and further commerce and trade activities.

B. List the educational objectives of the program.

The overarching goal of the program is to prepare students as "information technologists" and professionals who can assist general users, including individuals and organizations, in evaluating

needs and solving problems related to information technology (IT), as well as in applying IT effectively in a global work environment driven by rapidly changing technology.

The primary educational objective of the program is to produce graduates who can enter into and advance in the professions of information technology, as well as continue their education and obtain advanced degrees in this and related fields. With regard to program outcomes, graduates must be able to evaluate current and emerging technologies; identify user needs; design user-friendly interfaces; apply, configure, and manage IT technologies; assess IT impact on individuals, organizations, and the environment; and apply fundamental IT concepts and strategies to real-world problems.

Students in the B.S in IT program must complete 30 credit hours of core courses, 26 credit hours of related course work, and 9 credit hours of electives (total of 65 hours). Courses in the core curriculum consist of six new courses and four newly designated CIT courses that are being converted from existing courses in both the CSC and ISOM departments. (Note: we will delete CSC 110, CSC 204, MIS 310, & MIS 312 in the next catalog if this proposal is approved).

Core (30 hours):

- *CIT 110 – Introduction to Information Technology (3). Convert existing CSC 110 into CIT 110.
- *CIT 204 – Digital Media (3). Convert existing CSC 204 into CIT 204.
- *CIT 215 – Human Computer Interfaces (3). **New course.**
- *CIT 310 – Web Development: Client-side (3). Convert existing MIS 310 into CIT 310.
- CIT 324 – Network Security Management (3). **New course.**
- CIT 352 – Systems Administration (3). Convert existing MIS 312 course into CIT 352.
- CIT 410 – Web Development: Server-side (3). **New course.**
- CIT 411 – Information Systems Analysis (3). **New course.**
- CIT 445 – Platform Technologies (3). **New course.**
- CIT 480 – IT Resource Planning and Management (3). **New course.**

Required (26 hours):

- LIB 103 – Introduction to Library Research and Technology (3)
- CSC 121 – Introduction to Computer Science I (3)
- CSC 221 – Introduction to Computer Science II (4)
- *CSC 385 – Professional and Ethical Issues in Computer Science(1).
- MIS 316 – Business Application Development (3)
- STT 215 – Introduction to Statistics (3) or *QMM 280 – Statistical Analysis for Business and Economics (3)
- MAT 151 – Basic Calculus with Applications (3)
- MIS 323 – Business Telecommunications (3) or CSC 344 – Computer Networks (3)
- MIS 315 – Management of Database Systems (3)

Electives (9 hours):

Nine credit hours chosen from either CSC or MIS at the 300-level or higher.

Note: * denotes courses currently or planned as online distance education courses.

The IT curriculum provides students the opportunity to take several elective courses in addition to required IT core courses. These electives can be used to fulfill concentrations in areas such as web development, computer systems administration, network administration, and project management. Students will obtain a well-rounded education from the basic studies requirements in the Liberal Arts, Business, Mathematics, and Science.

- C. Describe the relationship of the program to other programs currently offered at the proposing institution, including the common use of: (1) courses, (2) faculty, (3) facilities, and (4) other resources.

The proposed program will complement the existing minor in IT, the BS in Computer Science, and the BS in Management Information Systems. It also builds on the working relationship and collaboration between two academic departments, the Department of Computer Science and the Department of Information Systems and Operations Management, and their jointly offered Master of Science in Computer Science Information Systems program. Core courses in the information technology discipline will be created by faculty in the two departments following guidelines from their professional societies, the Association for Computing Machinery (ACM) and the IEEE Computer Society (IEEE-CS) who co-developed international guidelines and accreditation standards for the computer science, information systems, and information technology disciplines. Finally, the two departments have recently moved into a new state-of-the-art Computer Information Systems Building. This new building will be the primary facility of the proposed IT program.

II. Justification for the Program—Narrative Statement

- A. Describe the proposed program as it relates to:

1. The institutional mission and strategic plan

With its commitment to intellectual growth and development of problem-solving skills, the mission of the proposed degree program is fully consistent with the mission of UNCW. Like the university of which it is a part, it will be dedicated to excellence in teaching, learning, research, academic achievement, and service to local and global communities. Furthermore, its tie to one of Southeastern North Carolina's more productive sources of economic development underscores its relevance to the regional interests of this university.

The mission statement of UNCW states that it is a "...public comprehensive university dedicated to learning through the integration of teaching and mentoring with research and service." It further emphasizes its commitment to providing "...an extensive array of programs at the baccalaureate and master's levels...", to enrich its quality of life, economy, and education. The proposed program will expand upon existing programs by taking advantage of the extensive faculty expertise in computer science and information systems already available at UNCW. It will provide students with an exciting new degree option in a discipline that is synonymous with the mission of UNCW.

Finally, UNCW's University Strategic Goal I is "Create the most powerful learning experience for our students". The establishment of a new BS program in IT will support this goal.

2. Student demand

There is strong student demand for degree programs in Information Technology as indicated by the number of student minors in IT, survey data from current students, and information from other universities who offer IT degrees.

UNCW started an IT Minor in 2004. There are currently 39 minors in the program and it is currently one of the largest minors at the university.

A Spring 2008 survey to 104 undergraduate UNCW students in several lower-level computer science and management information systems courses found that 49% (51 of the 104 students) indicated that they would consider a degree in Information Technology if it were available. Since most of the students responding to the survey were not Computer Science and/or Management Information Systems majors (only 21 of the 104 students listed CSC or MIS as their intended major), it is clear there will be a tremendous demand for this new major. In conversations with other schools who have recently begun to offer the Information Technology major (e.g., Georgia Southern and George Mason), we know that there has been great demand from students at other universities as well. At Georgia Southern, for example, the IT major (now housed in an IT Department) has more majors than the computer science department and the information systems department combined!

Another example of the anticipated demand for an IT major is the rapid growth of the MS CSIS program. In its first three years, the master's program currently has over 45 students.

3. Societal need (For graduate, first professional, and baccalaureate professional programs, cite manpower needs in North Carolina and elsewhere.)

The UNC Tomorrow report projects the demand for *new* computer and technology workers to be 23,000 by 2014. This is the third highest growth profession for North Carolina.

The Bureau of Labor and Statistics (BLS) lists "information" as one of the top eight areas for future employment with jobs growing by more than 11 percent by 2014, with some areas growing as much as 67.6 percent. The BLS also states that the five fastest growing occupations are "technology" based with a projection of an addition 1.5 million jobs.

The advisory board for the Information Systems and Computer Science departments has reviewed the tentative program and indicated a high need for this program. One member said "can we have this graduate NOW?"

4. Impact on existing undergraduate and/or graduate academic programs of your institution. (e.g., Will the proposed program strengthen other programs? Will it stretch existing resources? How many of your programs at this level currently fail to meet Board of Governors' productivity criteria? Is there a danger of proliferation of low-productivity degree programs at the institution?)

Establishing a Bachelor of Science in Information Technology is a logical next step for the UNCW as it reaches out to students and the community in this highly computerized world.

Beginning 1998, the Department of Computer Science separated from the Department of Mathematics and Statistics to recognize the need to focus and prepare students for working in computer science. A bachelor of science in Computer Science was created with two major

options. The first option emphasizes the study of computers as systems. The second option offers students the opportunity to select a concentration in a computer science application area, including business, biology, chemistry, digital arts, and statistics. With virtually identical core requirements, both options prepare students to attend graduate school in computer science and closely related areas, or to pursue career opportunities following graduation.

The Information Systems and Operations Management Department in the Cameron School of Business was created in 2000. It evolved from the Production and Decision Sciences Department in the Cameron School of Business. Students graduate with a B.S. in Business Administration with a concentration in Management Information Systems. Students are prepared for graduate school as well as managerial positions in information systems, systems analysis, databases and e-strategies.

As a result of continuous expansion in technology, a new area has arisen in the area of information technology (IT). IT is defined by the Information Technology Association of America as the "the study, design, development, implementation, support or management of computer-based information systems, particularly software applications and computer hardware." Students who have inquired into receiving a degree in IT have been denied the chance to receive a complete education in the field but have had the opportunity to receive a minor in the field. Currently, an interdisciplinary degree minor in IT is offered at UNCW. The need for a degree in IT has come from the work setting. Employers specifically are looking for individuals with skills in data management, computer networking, database administration and more. The Bureau of Labor Statistics lists jobs in the IT field to include software publishers; Internet publishing, broadcasting; Internet service providers, Web search portals, and data processing services; as well as telecommunications and publishing.

As stated earlier, the proposed program will complement the existing minor in Information Technology, the BS in Computer Science, and the BS in Management Information Systems. It builds on the working relationship and collaboration between two academic departments, the Department of Computer Science and the Department of Information Systems and Operations Management, and their jointly offered Master of Science in Computer Science Information Systems program. A new state-of-the-art Computer Information Systems Building will house the proposed Information Technology program.

B. Discuss potential program duplication and program competitiveness.

1. Identify similar programs offered elsewhere in North Carolina. Indicate the location and distance from the proposing institution. Include a) public and b) private institutions of higher education.

At present, only two North Carolina institutions offer undergraduate B.S. degrees in Information Technology: UNC Pembroke (UNCP) and Winston-Salem State University (WSSU).

A few other institutions in North Carolina offer related degrees, but they are considerably different than what is proposed here. For example, East Carolina University offers a B.S. in Design and a B.S. in Information & Computer Technology, both housed in the Department of Industrial Technology. Elizabeth City State University offers a degree program in Engineering Technology offers specializations in Computer and Information Technology and Mechanical and Automation, both housed in the School of Mathematics, Science and

Technology. Finally, the University of North Carolina Charlotte offers a Bachelor of Arts in Software and Information Systems - Information Technology Track which is housed in the Department of Software and Information Systems of the College of Computing and Informatics.

2. Indicate how the proposed new degree program differs from other programs like it in the University. If the program duplicates other UNC programs, explain a) why is it necessary or justified and b) why demand (if limited) might not be met through a collaborative arrangement (perhaps using distance education) with another UNC institution. If the program is a first professional or doctoral degree, compare it with other similar programs in public and private universities in North Carolina, in the region, and in the nation.

This is an interdisciplinary degree. A unique aspect of the proposed program at UNCW will be to offer the only undergraduate degree that combines the strength of two academic departments across schools (Cameron School of Business) and colleges (College of Arts & Sciences) to offer a joint degree in information technology. In addition, a goal of the program is to offer a percentage of the program on-line to provide access to working information technology professionals who desire to seek a BS degree.

The Computing Curricula 2005 report from the Association for Computing Machinery (ACM), the Association for Information Systems (AIS) and the IEEE Computer Society (IEEE-CS) calls for a new major as the field of computing technology expands. In this report they define the new area of Information Technology as a unique area merging Computer Science and Information Systems disciplines. The report details the unique needs for Information Technology degrees.

- C. Enrollment (baccalaureate programs should include only upper division majors, juniors and seniors).

Headcount enrollment

Show a five-year history of enrollments and degrees awarded in similar programs offered at other UNC institutions (using the format below for each institution with a similar program); indicate which of these institutions you consulted regarding their experience with student demand and (in the case of professional programs) job placement. Indicate how their experiences influenced your enrollment projections.

According to the UNC General Administration Program Inventory of Degree Programs (May 2008) only two UNC institutions currently offer IT degree programs: UNCP and WSSU. We have contacted both of these programs to discuss their experience with student demand and job placement opportunities for students. Since both of these programs are fairly new, there is limited enrollment history and job placement data.

Institution: UNC Pembroke
 Program Title: B.S. in Information Technology

	2003-04	2004-05	2005-06	2006-07	2007-08
Enrollment	N/A	N/A	N/A	N/A	10
Degrees-awarded	N/A	N/A	N/A	N/A	0

Institution: Winston-Salem State University
 Program Title: B.S. in Information Technology

	2003-04	2004-05	2005-06	2006-07	2007-08
Enrollment	N/A	N/A	N/A	13	18
Degrees-awarded	N/A	N/A	N/A	0	unknown

Use the format in the chart below to project your enrollment in the proposed program for four years and explain the basis for the projections:

	Year 1 (2009-2010)	Year 2 (2010-2011)	Year 3 (2011-2012)	Year 4 (2012-2013)
Full-time	15	30	70	100
Part-time	3	10	20	25
TOTALS	18	40	90	125

Please indicate the anticipated steady-state headcount enrollment after four years:

Full-time: 100 Part-time: 25 Total: 125

SCH production (upper division program majors, juniors and seniors *only*, for baccalaureate programs).

Use the format in the chart below to project the SCH production for four years. Explain how SCH projections were derived from enrollment projections (see UNC website for a list of the disciplines comprising each of the four categories).

Year 1	Student Credit Hours		
Program Category	UG	Masters	Doctoral
Category I			
Category II			
Category III	108		
Category IV			

Year 2	Student Credit Hours		
Program Category	UG	Masters	Doctoral
Category I			
Category II			
Category III	240		
Category IV			

Year 3	Student Credit Hours		
Program Category	UG	Masters	Doctoral
Category I			
Category II			
Category III	540		
Category IV			

Year 4	Student Credit Hours		
Program Category	UG	Masters	Doctoral
Category I			
Category II			
Category III	750		
Category IV			

Assumptions on SCH calculation: (a) on average, each full-time student enrolls in three 3-credit courses per semester and (b) on average, each part-time student enrolls in one 3-credit course per semester.

III. Program Requirements and Curriculum

A. Program Planning.

1. List the names of institutions with similar offerings regarded as high quality programs by the developers of the proposed program.

Georgia Southern - <http://cit.georgiasouthern.edu/it/index.htm>

George Mason - <http://www.gmu.edu/catalog/0506/ite/ait.html>

UNC-Pembroke - <http://www.uncp.edu/mathcs/degrees.htm>

2. List other institutions visited or consulted in developing this proposal. Also discuss or append any consultants' reports, committee findings, and simulations (cost, enrollment shift, induced course load matrix, etc.) generated in planning the proposed program.

We consulted with faculty from Georgia Southern, George Mason, and UNC-Pembroke.

B. Admission. List the following:

1. Admissions requirements for proposed program (indicate minimum requirements and general requirements).
2. Documents to be submitted for admission (listing or sample).

Student may declare a major in Information Technology after completion of CIT110 and two additional CIT/CSC/MIS courses at the 200 level with a grade point average of 2.5 on these three courses.

C. Degree requirements. List the following:

1. Total hours required.

Total for the B.S. = 124

Total required for Information Technology = 65