UNDERGRADUATE CURRICULUM COMMITTEE
NEW PROGRAM/PROGRAM CHANGE PROPOSAL FORM

1. Which category (categories) best describes the curriculum change for this proposal:

    - Newly established degree program
    - Newly established major
    - Newly established minor
    - Newly established track/concentration/emphasis/certificate within an existing program
    - Newly developed program offering no major or minor
    - **Significant changes to an existing program's major/minor/ track/concentration/ emphasis/certificate**
    - Termination of an existing program/major/minor/concentration/certificate/emphasis

2. Title of Program:

    Bachelor of Science Degree in Computer Foundations, The Major in Computer Science

    Catalogue Description (including credits): (Required only for new catalogue descriptions or changes to current catalogue descriptions)

THE BACHELOR OF SCIENCE DEGREE IN COMPUTER FOUNDATIONS

This program is designed to prepare students in the foundations of computer hardware and software. Students in this program can choose to major in **Applied Physics** or **Computer Science**. In addition to requiring the successful completion of all general education and degree studies requirements (see index), the Bachelor of Science program in Computer Foundations requires the **successful completion of the common core courses, the major courses, and the support courses.**

Common Core Courses:
  1) CPEN 214, 371W;
  2) CPSC 125, 150/150L-250/250L;
  3) MATH 140*, 240;
  4) For applied physics: PHYS 201/201L*-202/202L*, 340;
  5) For computer science: PHYS 151/151L*-152/152L* or PHYS 201/201L*-202/202L* and PHYS 340 or MATH 235 or 260;

* Courses bearing an asterisk may be used simultaneously to satisfy, in part, certain general education and degree studies requirements.

THE MAJOR IN COMPUTER SCIENCE

The major in computer science is designed to prepare a student for a computer-oriented career, such as scientific applications or systems programming, or for graduate work in computer science. The core courses provide a background in computer engineering, computer science, mathematics, and physics. The major and support courses continue building this background. Advanced courses in the program provide additional study in data structures, programming languages, computer organization, operating systems, and algorithms, with additional electives to extend the student's knowledge in an area of his/her choice. Degree studies requirements are those of the Bachelor of Science degree.

Graduates will be prepared for further study in graduate school or employment as computer scientists or researchers in various high technology laboratories. Students pursuing the major in computer science are strongly encouraged to pursue studies in other academic fields in which there are significant applications of computer science. A minor in business, economics, mathematics, science, or psychology would be a viable choice. Students interested in the scientific or engineering applications of computers are strongly urged to take MATH 380, 480 and PHYS 441. See your advisor or departmental brochures for more details on the computer science major.

Support Courses in Computer Science:
  1) ENGR 213;
  2) PHYS 341;.
Major Courses in Computer Science:
  1) CPSC 260, 270, 410, 420;
  2) CPSC 330 or CPEN 414;
  3) Three major electives from CPSC 425, 427, 440, 450, 460, 470, 471, 480, 485, 495, and any 500 level course with advisor's permission; MATH 380, 480; PHYS 421, 441, with courses numbered 495 and above used no

more than twice.

Capstone Course: PCSE 499W (3 credits).

3.   What are the objectives for this program?

Quoting from the catalog copy above: "The major in computer science is designed to prepare a student for a computer-oriented career, such as scientific applications or systems programming, or for graduate work in computer science. The core courses provide a background in computer engineering, computer science, mathematics, and physics. The major and support courses continue building this background. Advanced courses in the program provide additional study in data structures, programming languages, computer organization, operating systems, and algorithms, with additional electives to extend the student's knowledge in an area of his/her choice. Degree studies requirements are those of the Bachelor of Science degree."

4.   For whom is the new curriculum primarily intended? Explain why it should become part of the curriculum, and how this proposal relates to the University's mission.

This is a minor change to the requirements for the Major in Computer Science.

5.   What is the anticipated enrollment in the new curriculum for the next three years?

Roughly the same as currently, or approximately 40 -50 graduating majors per year.

6.   How will the new curriculum be staffed/administered?

No staffing changes are needed, as the curriculum changes are very minor.

7.   Has this curriculum, or one closely related to it, been offered at CNU previously?
If so, is that curriculum currently being offered? How does the proposed curriculum differ? When is the last term the old curriculum will be offered?

Yes, this exact major has been offered at CNU for many years. We are submitting this program change proposal to the UCC as we are proposing four minor changes to the program. The first is the addition of PHYS 340 as an option along with MATH 235 and MATH 260. Any of these three courses will satisfy the knowledge requirements in linear algebra and matrices for a Computer Scientist. The second is substitution of PHYS 341 (Design and Analysis of Experiments – a new course but already approved by the UCC) for MATH 125 (Statistics), which was deemed too low level. This course is also required of our Computer Engineering majors. The third is the addition of a new (and already approved) course, CPSC 427 (C++ Programming), to the list of approved electives, as we certainly want to encourage our CS students to consider this course. This course is required of Computer Engineering majors. The fourth change is the addition of a capstone course – PCSE 499 W. This was added as the CS degree was the only major in our department without a capstone requirement, and we believe our CS graduates also need a capstone research experience.

8.   Does the new curriculum or the change being proposed involve the creation of new courses, deletion of existing courses, or changes to existing courses? Please briefly list all changes here and indicate how these changes affect hours required for graduation.

For EACH new course being proposed, please complete the Undergraduate Curriculum Committee New Course Proposal Form and attach to this form. Remember to include a syllabus for each proposed course.

The only new courses involved are CPSC 427 and PHYS 341, both of which have already been approved

by the UCC.

9.   Does the new curriculum involve special equipment or costs? If so, please explain.
       No.

This program was reviewed by: *Concur*   *Do Not*
(Areas of Inquiry must be approved by   *Concur***
* BOTH academic Deans and both Curriculum Cttees)*

Department(s): (1) _____ Date: _____   ☐   ☐

Department(s): (2) _____ Date: _____   ☐   ☐

CLAS Chairs: _____ Date: _____   ☐   ☐

SoB Curriculum Committee: _____ Date: _____   ☐   ☐

Dean: _____ Date: _____   ☐   ☐

Dean: _____ Date: _____   ☐   ☐

University Curriculum Committee: _____ Date: _____   ☐   ☐

Faculty Senate: _____ Date: _____   ☐   ☐

Provost: _____ Date: _____   ☐   ☐

President: _____ Date: _____

Board of Visitors: _____ Date: _____

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Distribution by the Provost Office following approval:
Department Chair(s), UCC Chair, Deans, Registrar

**If "Do Not Concur" is checked, please provide a statement of explanation.

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