

**Subject: Computing Sciences Five Year Plan – 2006-2011**

References: [Department Assessment Plan](#)  
[CIS Student Outcomes](#)  
[CSC Student Outcomes](#)

## **Department Mission Statement**

It is the mission of the department to:

- a) create and maintain high quality programs in the computing sciences that prepare students for graduate study and professional work,
- b) create and offer computing courses of interest to the general student population, and
- c) create and maintain relationships with other departments that may lead to special purpose course offerings or the creation of interdisciplinary programs.

## **Departmental Goals, Objectives, and Action Plans**

### **1. General**

**Explore department's identity including its mission, focus, potential niche, and strengths.**

### **2. Curriculum**

**Goal – Provide an exciting and challenging curriculum that will meet the needs of students.**

**Related Elon Strategic Plan Goal: Academic Excellence**

**Objective 2.1 – Work towards accreditable and innovative curricula in CSC and CIS.**

Description: Continue to work towards the development of accreditable Computer Science and Computer Information Systems programs that also meet the specific needs of the Elon University environment.

Action – Assess curricula annually and strive to maintain up-to-date Computer Science and Computer Information Systems curricula. We should continue to consider changes in accreditation requirements and changes in the disciplines of computer science and computer information systems when developing course offerings and requirements for major and minor degree programs. We should follow the established best practices of keeping course assessment documents and course documentation in the suggested ABET format. A new ABET Computer Science Curriculum recommendation is due in 2006-2007 and a new Computer Information Systems Curriculum recommendation is due in 2007-2008.

Action - Complete review of Computer Science program upon release of ABET's Computer Science Curriculum Volume, CS 2006. Every five years, ABET

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updates the Computer Science Curriculum recommendations. The current volume is from 2001 with the next volume due in 2006-2007. This document may make suggestions for significant changes to the core structure of the curriculum. A formal review informed by the new document will be made of the current CSC curriculum.

Action - Complete review of Computer Information Systems program upon release of ABET's Information Systems Curriculum Volume 2007-2008.

Action - Monitor and assess impact of new accreditation guidelines in Software Engineering and Information Technology and newly accredited programs at other schools.

Action – Explore the use of a common, initial two-course sequence used for both CSC and CIS. The idea is that it would provide additional flexibility for a student to switch between majors or major in one and minor in the other.

Action – Explore synergy between CSC and CIS coursework and requiring participation by both disciplines.

Action – Explore developing three-course concentrations in key technology areas.

Action – Explore moving networking to the freshman or sophomore portion of the CSC curriculum.

### **Objective 2.2** – Define and implement solutions for assessment.

Description: Determine if defined outcomes (see CIS and CSC Student Outcomes) are assessed by current senior assessment mechanisms or whether new assessment mechanisms should be introduced and implemented.

Action – Update annually the course matrix map with each student outcome to identify where each outcome is taught and assessed. Define annually the program outcomes to be assessed and conduct the assessments.

Action – Define and implement a CIS senior assessment.

Action – Administer the ETS Computer Science test to Computer Science seniors, and continue to require finishing within one standard deviation of mean as a requirement for graduation.

### **Objective 2.3** – Develop courses that enhance relationships between CS department and other university entities.

Description: Continue to develop role in reaching out to non-majors, and seeking synergies with other departments and schools.

Action - Continue to develop and teach the experimental course called *Perspectives on Computer Science* with the goal of segregating departmental majors and nonmajors into separate courses to improve the challenge and learning of each segment.

Action – Continue development and support of minors in Multimedia Authoring and GIS and of the MIS concentration in Business Administration. Explore ways to revise the requirements of the minor in Multimedia Authoring to increase enrollments.

Action – Explore development of additional interdisciplinary/disciplinary minors to increase enrollment, for example, a new minor in game programming supported by courses in Art and CS.

Action – Explore the role of current 100-level courses.

Action – Continue ongoing collaboration with teacher preparation programs and revise CIS 220 goals and expectations to insure successful licensure of teacher candidates and successful program accreditation.

**Objective 2.4** – Enhance library holdings.

Action: Spend 100% of allocated library budget.

### 3. Faculty

**Goal – Support computer science and computer information systems faculty members in all areas of professional growth.** Maintaining a diverse and qualified faculty is key to the department’s mission. Faculty must be given opportunities to remain proficient in their disciplines through support for research and sabbaticals. All faculty must be pedagogically proficient and should also be supported in providing service to the institution and wider community.

**Related Elon Strategic Plan Goal: Academic Excellence**

**Objective 3.1** – Provide ongoing support for faculty professional development activities.

Action – Implement and monitor department’s policy for reassigned time provided by the university to support teaching, scholarship, and/or service to the institution.

**Objective 3.2** – Support faculty in routinely publishing in refereed conference proceedings and journals and/or creating peer reviewed software applications and/or performing professional consultation within the discipline.

Description: In the fall of 2004, the Promotion and Tenure Committee began using departmental guidelines for evaluation of scholarship in promotion and tenure decisions. Additionally, scholarship is required for ABET accreditation.

Action –The external reviewer in fall 2004 indicated that the current level of professional contributions is acceptable for accreditation. The department will monitor continued scholarship by faculty through their annual Unit 1 evaluations and their annually updated curriculum vitae.

**Objective 3.3** – Reduce faculty semester new course preps to an average of 2.

**Objective 3.4** – Attract and retain outstanding faculty with complementary skills to support entire curriculum.

**Objective 3.5** – Have periodic lunch presentations by faculty on current topics and research interests to foster communication and potential collaborations.

**Objective 3.6** – Continue to provide support to students, faculty, and administration in the undergraduate and graduate level teacher education programs.

Action: Maintain ongoing print and electronic communication aimed at informing faculty and students of technology procedures and updates.

Action: Provide individual and group instruction for faculty and students to assist them in the integration of technology in teaching and learning.

Action: Provide support to program faculty and administration for assessment management technology aimed at maintaining national and state accreditations.

#### 4. Students

**Goal – Meet the educational needs of students and prepare them for professional careers and/or graduate school by maintaining challenging and rewarding computer science and computer information systems curricula and establishing an atmosphere in which learning can flourish and develop into a passion and commitment to lifelong learning.** Majors should not only learn the fundamental content and skills of the major, but also practice problem solving, teamwork, ethical behavior, and oral and written communication. Graduates of the Computer Science and Computer Information Systems majors will be assessed according to the stated outcomes for the respective major.

##### **Related Elon Strategic Plan Goal: Academic Excellence**

**Objective 4.1** – Internally work to attract more students into Computer Information Systems and Computer Science majors and minors, the minor in Multimedia Authoring, and the concentration in MIS.

Action – Continue to support a student computing organization for women.

Action – Explore additional opportunities for experiential and service learning in courses.

Action - Improve computing environment of Carpenter Lab.

Action- Send letters each semester to students who receive a B or better in entry-level courses to CIS and CSC majors.

Action – Explore new avenues for promoting the department’s programs.

**Objective 4.2** – Assess student outcomes annually.

Description: It is useful to have an agreed-upon list of standards, objectives, or learning outcomes which students must attain and which will drive some curriculum choices.

Action – Identify program outcomes to be assessed and assess these items.

Action – Administer survey to graduating seniors in CIS and CSC for self assessment against student outcomes.

**Objective 4.3** – Continually establish research opportunities and internships for undergraduate majors.

**Objective 4.4** – Publish a departmental newsletter annually for Elon Computing Sciences graduates to solicit advice, internship opportunities and job opportunities.

## 5. Lab/Computer Facilities

**Goal – Expand the current facilities to support diverse course content and teaching styles. Maintain hardware and software at state-of-the-practice levels, within budgetary constraints.**

**Related Elon Strategic Plan Goal: Facilities**

**Objective 5.1** – Continue to provide technologically up-to-date classrooms and labs, including hardware and software.

Action - Upgrade hardware for department computer lab(s) and servers every three years.

Action – Update software packages with latest versions twice a year in all campus labs used for computing sciences courses.

Action – Support two major operating systems on department servers.

Action – Recommend purchase of hardware and software upgrades and software licenses to support students and faculty in teacher preparation programs.

**Objective 5.2** – Continue to seek sufficient system support for department servers and laboratories.

**Objective 5.3** – Expand the current physical space to accommodate additional classrooms and laboratory work spaces.

**Objective 5.4** – Create a systems teaching laboratory for teaching hardware, network and other physical technologies.

**Objective 5.5** – Continue discussion of ideal facilities including classrooms with flexible/modular structures and student project/work rooms.

## **6. Internationalization**

**Goal: Enhance internationalization of the curricula and faculty.**

**Related Elon Strategic Plan Goal: Internationalization**

**Objective 6.1** - Continue department commitment to teaching GST 110.

**Objective 6.2** – Explore planning and proposing study abroad courses for Winter Term, for example one on outsourcing.

**Objective 6.3** - Investigate Fulbright opportunities as well as other possibilities for faculty study abroad.

**Objective 6.4** - Incorporate international/global components in current course offerings.

**Objective 6.5** - Increase participation and attendance by faculty at international conferences.