

**ACADEMIC AFFAIRS**  
**Mission Statement, Program Outcomes, and Assessment**  
**For Associate Degree in Computer Technology (Electives in Programming)**

**Mission Statement:**

To fulfill the community's need for a competent workforce and economic growth by providing instruction in programming, information technology and pc support.

**Program Outcomes:**

Computer Technology (Electives in Programming)

Graduates with a degree in Computer Technology (Electives in Programming) should be able to demonstrate knowledge and skills in the following areas:

A. Programming Functions

- |                                                                                                      |                                                                                                   |
|------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|
| 1. Listen to user and determine user's need                                                          | CPT 111, CPT 211, CPT 213, CPT 115, CPT 234, CPT 235, CPT 236, IST 226, IST 237                   |
| 2. Practice logic and design skills                                                                  | CPT 111, CPT 211, CPT 213, CPT 234, CPT 235, CPT 236, CPT 115, CPT 272, IST 226, IST 237          |
| 3. Present solution to user for adjustments/approval                                                 | IST 225, IST 226, IST 237, IST 290                                                                |
| 4. Convert present solution requirements to layout utilities, pseudo code, program/software language | CPT 111, CPT 211, CPT 213, CPT 115, CPT 234, CPT 235, CPT 236, IST 237                            |
| 5. Key in code and document project                                                                  | CPT 111, CPT 211, CPT 213, CPT 115, CPT 234, CPT 235, CPT 236, CPT 272, IST 225, IST 226, IST 237 |

- |                                                                                |                                                                                                   |
|--------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|
| 6. Debug the code and use debugging tools                                      | CPT 111, CPT 211, CPT 213, CPT 115, CPT 234, CPT 235, CPT 236, CPT 272, IST 225, IST 226, IST 237 |
| 7. Create test data with user                                                  | CPT 111, CPT 211, CPT 213, CPT 115, CPT 234, CPT 235, CPT 236                                     |
| 8. Test program against anticipated problems                                   | CPT 111, CPT 211, CPT 213, CPT 115, CPT 234, CPT 235, CPT 236                                     |
| 9. Test program with user                                                      | CPT 111, CPT 211, CPT 213, CPT 115, CPT 234, CPT 235, CPT 236                                     |
| 10. Implement program/software                                                 | CPT 111, CPT 211, CPT 213, CPT 115, CPT 234, CPT 235, CPT 236                                     |
| <br>                                                                           |                                                                                                   |
| B. Operation Functions - General                                               |                                                                                                   |
| 1. Distinguish between hardware and software problems                          | CPT 213, CPT 115, CPT 234, CPT 235, CPT 236, CPT 208, IST 245                                     |
| 2. Determine when to ask for assistance (and from whom)                        | CPT 101, CPT 170, CPT 111, CPT 211, CPT 213, CPT 115, CPT 234, CPT 235, CPT 236, CPT 208, CPT 272 |
| 3. Explain hardware system components including methodology of troubleshooting | CPT 101, CPT 176, IST 245                                                                         |
| <br>                                                                           |                                                                                                   |
| C. Operation Functions - Hardware                                              |                                                                                                   |
| 1. Read/Interpret technical manuals                                            | CPT 111, CPT 211, CPT 213, CPT 115, CPT 234, CPT 235, CPT 236, CPT 208, CPT 272                   |
| 2. Explain the principles of system start-up and shut-down                     | CPT 101, CPT 176                                                                                  |
| 3. Explain the system backup (different media: tape, disk, etc.)               | CPT 101, CPT 176                                                                                  |
| 4. Manage peripheral devices                                                   | CPT 176                                                                                           |
| 5. Make verbal explanation of operation problems to maintenance personnel      | CPT 213, CPT 115, CPT 234, CPT 235, CPT 236, CPT 176                                              |
| 6. Follow company security                                                     | CPT 176                                                                                           |

policies and procedures

D. Operation Functions - Software

1. Perform data entry  
OST 105, CPT 170, CPT 172, CPT 272, CPT 111, CPT 211, CPT 213, CPT 115, CPT 234, CPT 235, CPT 236, CPT 208
2. Use software operating system utilities  
CPT 170, CPT 172, CPT 176, CPT 272, CPT 111, CPT 211, CPT 213, CPT 115, CPT 234, CPT 235, CPT 236, CPT 208, IST 225, IST 226, IST 237, IST 290
3. Recognize/describe setup procedures being used to run job  
CPT 176, CPT 213, CPT 115, CPT 234, CPT 235, CPT 236
4. Use reference manuals to clarify error messages  
CPT 170, CPT 172, CPT 176, CPT 272, CPT 111, CPT 211, CPT 213, CPT 115, CPT 234, CPT 235, CPT 236, CPT 208, IST 225, IST 226, IST 237
5. Use operation manuals to execute and solve problems with jobs  
CPT 170, CPT 172, CPT 176, CPT 272, CPT 111, CPT 211, CPT 213, CPT 115, CPT 234, CPT 235, CPT 236
6. Explain compiling, linking, and running  
CPT 115, CPT 234, CPT 235
7. Develop proficiency in Microsoft Office Suite  
CPT 170, CPT 172, CPT 272
8. Develop Java/Web skills  
CPT 208, CPT 236, IST 225, IST 226, IST 237
9. Demonstrate knowledge of software licensing/copyrights  
CPT 101

E. Communications

1. Read and interpret documentation  
CPT 170, CPT 172, CPT 176, CPT 272, CPT 111, CPT 211, CPT 213, CPT 115, CPT 234, CPT 235, CPT 236, CPT 208, IST 225, IST 226, IST 237
2. Acquire assistance from vendors/other experts (via phone)  
CPT 170, CPT 172, CPT 176, CPT 272, CPT 111, CPT 211, CPT 213, CPT 115, CPT 234, CPT 235, CPT 236, CPT 208, IST 225, IST 226,

- |                                                                                             |                                                                                                                                                |
|---------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| 3. Prepare technical/user documentation                                                     | IST 237<br>IST 290, ENG 165                                                                                                                    |
| 4. Demonstrate functions of programs to user                                                | CPT 213, CPT 234, CPT 235, CPT 236, IST 225,<br>IST 226, IST 237                                                                               |
| 5. Help users clarify needs and/or problems                                                 | CPT 213, CPT 234, CPT 235, CPT 236, IST 237                                                                                                    |
| 6. Assist others with software packages                                                     | CPT 170, CPT 172, CPT 176, CPT 272, CPT<br>111, CPT 211, CPT 213, CPT 115, CPT 234,<br>CPT 235, CPT 236, CPT 208, IST 225, IST 226,<br>IST 237 |
| 7. Prepare justification to support projects                                                | IST 290, ENG 165, IST 226, IST 237                                                                                                             |
| 8. Make presentations (demos, lectures) to individuals and groups (management, users, etc.) | IST 225, IST 226, IST 237, IST 290, ENG 165                                                                                                    |
| 9. Prepare correspondence and reports                                                       | IST 290, ENG 165                                                                                                                               |

F. Job Market Skills

- |                             |                                                                                                                                                                                                |
|-----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Think logically          | CPT 170, CPT 172, CPT 176, CPT 272, CPT<br>111, CPT 211, CPT 213, CPT 115, CPT 234,<br>CPT 235, CPT 236, CPT 208, IST 225, IST 226,<br>IST 237, BUS 140, MAT 101, ENG 101, ENG<br>165, ECO 201 |
| 2. Exercise patience        | CPT 111, CPT 211, CPT 213, CPT 115, CPT<br>234, CPT 235, CPT 236, CPT 208, IST 225, IST<br>226, IST 237                                                                                        |
| 3. Express creativity       | IST 225, IST 226, IST 237, CPT 208, IST 290                                                                                                                                                    |
| 4. Be adaptable             | CPT 101, CPT 170, CPT 172, CPT 176, CPT<br>272, CPT 111, CPT 211, CPT 213, CPT 115,<br>CPT 234, CPT 235, CPT 236, CPT 208, IST 225,<br>IST 226, IST 237                                        |
| 5. Demonstrate perseverance | CPT 111, CPT 211, CPT 213, CPT 115, CPT<br>234, CPT 235, CPT 236, IST 225, IST 226, IST                                                                                                        |

6. Accept criticism 237  
ENG 101, ENG 165, IST 225, IST 226, IST 237,  
IST 290
7. Take initiative  
CPT 213, CPT 115, CPT 234, CPT 235, CPT  
236, CPT 208, IST 225, IST 226, IST 237, IST  
290, ENG 165
8. Demonstrate active listening  
skills  
CPT 101, CPT 170, CPT 172, CPT 176, CPT  
272, CPT 111, CPT 211, CPT 213, CPT 115,  
CPT 234, CPT 235, CPT 236, CPT 208, IST 225,  
IST 226, IST 237, IST 245, IST 290, BUS 140,  
MAT 101, ENG 101, ENG 165, ECO 201,  
HUMANITIES, OST 105
9. Work independently  
CPT 213, CPT 115, CPT 234, CPT 235, CPT  
236, IST 236, IST 237, IST 290
10. Be goal oriented (meet  
deadlines)  
CPT 101, CPT 170, CPT 172, CPT 176, CPT  
272, CPT 111, CPT 211, CPT 213, CPT 115,  
CPT 234, CPT 235, CPT 236, CPT 208, IST 225,  
IST 226, IST 237, IST 245, IST 290, BUS 140,  
MAT 101, ENG 101, ENG 165, ECO 201,  
HUMANITIES, OST 105
11. Work in teams  
CPT 213, CPT 115, CPT 234, CPT 235, CPT  
236, IST 245, IST 290
12. Work under pressure  
CPT 170, CPT 172, CPT 176, CPT 272, CPT  
111, CPT 211, CPT 213, CPT 115, CPT 234,  
CPT 235, CPT 236, CPT 208, IST 225, IST 226,  
IST 237, IST 245, IST 290, OST 105
13. Practice time management  
and multiple projects  
management  
CPT 101, CPT 170, CPT 172, CPT 176, CPT  
272, CPT 111, CPT 211, CPT 213, CPT 115,  
CPT 234, CPT 235, CPT 236, CPT 208, IST 225,  
IST 226, IST 237, IST 245, IST 290, BUS 140,  
MAT 101, ENG 101, ENG 165, ECO 201,  
HUMANITIES, OST 105
14. Discernable communication  
skills  
IST 225, IST 226, IST 237, IST 290, ENG 101,  
ENG 165
15. Observe housekeeping and  
safety procedures

- |                                                           |                                                                                                                                                                                                                                    |
|-----------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 16. Develop open communication with peers and supervisors | CPT 101, CPT 170, CPT 172, CPT 176, CPT 272, CPT 111, CPT 211, CPT 213, CPT 115, CPT 234, CPT 235, CPT 236, CPT 208, IST 225, IST 226, IST 237, IST 245, IST 290, BUS 140, MAT 101, ENG 101, ENG 165, ECO 201, HUMANITIES          |
| 17. Develop problem solving skills                        | CPT 172, CPT 176, CPT 272, CPT 111, CPT 211, CPT 213, CPT 115, CPT 234, CPT 235, CPT 236, CPT 208, IST 225, IST 226, IST 237, BUS 140, MAT 101                                                                                     |
| 18. Practice work ethics                                  | CPT 101, CPT 170, CPT 172, CPT 176, CPT 272, CPT 111, CPT 211, CPT 213, CPT 115, CPT 234, CPT 235, CPT 236, CPT 208, IST 225, IST 226, IST 237, IST 245, IST 290, BUS 140, MAT 101, ENG 101, ENG 165, ECO 201, HUMANITIES, OST 105 |

## **Assessment Methods:**

### **Direct Student Learning Outcomes**

This program has a capstone course, IST 290 – Special Topics in Information Science. It includes an option for the students either to do research in their particular area of study or to do a hands-on project related to their area of study. Both options require that a formal presentation be given. The overall pass rate for students in IST 290 in 2004 was 78%. Steps were taken to improve the success of students in this class (see Computer Technology Actions below). Students graduating in Programming will certify their academic knowledge and skills through a WorkKeys Career Readiness Certification, which includes the following subtests: Reading for Information, Locating Information, and Applied Mathematics.

### **Indirect Student Learning Outcomes**

The Degree Program faculty review the following indirect measures of student and program success yearly or as needed ensure program viability: student portfolios comprised of their completed rigorous and relevant scenario-based assessments; grade distribution and failure rates; student evaluations; job placement results; employer satisfaction survey; enrollment statistics; retention rates, and graduation rates.

## **Retention**

OCtech Benchmark #1 – The program will have retained in the following Fall semester not less than 60% of the new students who enrolled in the prior Fall semester.

- Over the last three years, program retention has been: 2002 (69%), 2003 (52%), and 2004 (54%).

### **Job Placement**

OCtech benchmark #2 – Using the State Technical College System definitions for employment, not less than 80% of the graduates of the program will have secured employment in the field.

- Over the past three years, job placement has been: 2001 (76%), 2002 (70%), and 2003 (74%)

### **Graduation Rates**

OCtech benchmark #3 – The number of graduates will average 25% of the average annual fall enrollment for the program.

- Over the past three years, graduation rates have been: 2001-2002 (9%), 2002-2003 (9%), and 2003-2004 (12%).

### **Internal Measures of Success**

Direct measures of soft skills and academic/program foundation skills:

- ACT Work Keys: Students will score a 4 or better on all areas of Work Keys.
- 90% of Capstone course students will achieve “satisfactory” status on the final presentation for the course.

Indirect measures of program success

- Strive for an 80% or better level of job placement.
- Re institute an Employer Satisfaction Survey to be implemented at the end of the Spring semester 2005.
- Improve retention over the FY03-04 Benchmark.
- Incorporate 100% of validated DACUM competencies into Computer Technology course outlines with demonstrated student performances.

### **Review Process and Use of Results:**

Programming is a competency-driven curriculum. Its competencies are determined through qualified DACUM panels and are validated by industry professionals and the curriculum’s own advisory committee. DACUMS are usually conducted every four years to ensure currency; however, our last DACUM was held in 1999. A new DACUM will be held within the next year and

based on the result of that DACUM, the Computer Technology faculty will perform the following internal processes yearly as part of the strategic planning and review process.

- :
- Ensure that program outcomes are appropriate and current.
  - Ensure that program outcomes are addressed in the exit competencies of at least one required course.
  - Ensure that within those required courses that students demonstrate the desired program outcome either through written or performance-based tests and/or graded assignment.
  - Ensure that equipment inventory, facilities, and budget support program outcomes and the strategic plan.
  - Ensure that successful completion of prerequisite courses is a satisfactory predictor of student success in subsequent courses.
  - Monitor student portfolios from capstone performances against DACUM competencies.
  - Review grade distribution and failure rates; student evaluations; job placement results; employer satisfaction survey; enrollment statistics; retention rates, and graduation rates.
  - Ensure that the College Library can assure access to appropriate and current research materials.
  - Provide feedback to the general education faculty on observed general education competencies and make recommendations as needed.
  - Make a report to the advisory committee on assessment findings and solicit feedback.
  - Work with Division Dean to revise syllabi and/or course/department offerings as needed.
  - Conduct program self study as required by accrediting agencies.

The Computer Technology Program is accredited by The Association of Collegiate Business Schools and Programs (ACBSP).

### **What action(s) did the Program take this past academic year that improved and expanded student-learning outcomes?**

Changes have been made within the Computer Technology program to improve student success based on recommendations from our advisory committee, instructors, and DACUM panel. The DACUM panel consists of members of local industry who would be in the positions to hire our graduates or hold the same types of jobs as our graduates. The Panel meets separately from the Advisory Committee to discuss the competency requirements of the program and make recommendations for changes.

### **Computer Technology Actions**

*Data Source:* Grade distribution data for three-year period, and course failure rates

*Increased prerequisites for classes.* After studying the course failure rates, we found that a high percentage of students were failing CPT 101 and CPT 111. Therefore, additional prerequisites or increased entrance test scores were added to these courses. CPT 101 or CPT 170 was added as an additional prerequisite for CPT 111. Also, an elementary algebra entrance test score was added for CPT 111. The reading entrance test score for CPT 101 was increased to 40 (Asset) or 80 (Compass). In addition, ENG 101 was included as the required English course instead of ENG 155. This was done to better prepare students for IST 290.

*Measurement:* Results pending based on data collected from grade distribution and failure rates.

*Data Source:* DACUM panel, Advisory Committee, and instructor anecdotal records

*Increased emphasis on soft skills.* The DACUM panel and the advisory board stressed the importance of emphasizing soft skills in the classroom. All of the major business courses now have a soft skills component.

*Measurements:* Results are pending based on data collected from the selected assessment tools, including ACT Work Keys and independent rubric-based assessments for formal presentations given by students.

Benchmark #1 Plan of Action: See 1<sup>st</sup> Computer Technology Action

Benchmark #2 Plan of Action: Information gathered through interviews with students show that students are not eager to leave the areas in which they live for full time work, rather they work part time as web designers or computer technicians. Unfortunately, the workforce in Orangeburg County does not have a huge market for computer technicians and thus, the job placement rate is low. Emphasis will be placed on developing partnerships with business outside of the County to increase job placement.

Benchmark #3 Plan of Action: Students in the CPT curriculum can get employment without the associate degree. When employers hire candidates in the CPT field, they look for certification(s) (e.g. MOUS, MCSE, CISCO). Typically, students will enroll in the courses necessary for employment without having completed the degree.