



Program Assessment Plan

<http://www.caspercollege.edu/assessment/index.html>

Instructions: To submit an assessment plan for a specified program, please respond to each of the questions below. *Use as much space as you need to describe the program assessment plan.* Once this form is completed, please email it as an attachment to kthatcher@caspercollege.edu. For guidelines and/or assistance in developing a plan for assessing student learning, please contact Kathleen Thatcher or consult resources on the Assessment website at <http://www.caspercollege.edu/assessment/index.html>.

1. **Program:** Computer Science
2. **Department:** Computer Science
3. **School:** School of Science
4. **Person(s) Responsible for Developing Plan:** James Krumm
5. **Email:** jkrumm@caspercollege.edu
6. **Phone:** (307) 268-2519
6. **Date Submitted:** 5/12/2010

1. Does this program offer a distance learning ? Yes No

(*Note: Please complete a separate Assessment Plan form for each program.)

A. Conceptual Assessment Plan Components

Assessment enables an understanding of what students are learning as a result of the program. Assessment findings can be used for a variety of purposes including making decisions regarding curriculum and instruction as well as providing feedback to students.

1. *List your program's mission and goals.*

The Computer Science Department seeks to provide a sufficient and relevant computer science background in related languages, concepts, and technology to allow the successful transfer of students pursuing a higher degree or employment in computer science.

Goal 1: To teach our students in state-of-the-art computer science problem solving methods, and content widely adopted by other institutions.

Goal 2: Courses will be taught in such a way that they are student focused.

Goal 3: To be actively involved in recruitment of students.

2. *List the student learning outcomes for the program addressed by this plan.* (Note: Please complete a separate Assessment Plan form for each program.)

The following objectives are assessed using a capstone programming assignment: Student is able to successfully solve problems writing programs which appropriately incorporate selection structures, iteration structures, and functions. Student is able to successfully solve problems using object oriented programming (create their own classes. Student is be able to successfully

apply search, and sort algorithms with abstract data arrays to solve problems. Student is able to successfully debug their own programs.

3. *Explain the student learning outcomes relation to the unit mission and goals (i.e. Do the student learning outcomes reflect the unit goals and objectives, further the mission, are rooted in the academic discipline, etc.?)*

Object oriented programming, debugging, successful problem solving, and incorporation of sort, search, and files saving are typical and important skill areas required by academia listed in the goals and mission as an integral part of “To teach our students in state-of-the-art computer science problem solving methods, and content widely adopted by other institutions”. These skills are firmly rooted in academia in the instruction of computer science.

4. *Describe how and by whom assessment findings will be used.*

The findings are determined in using capstone assignment given to students (specifically the Templated Phonebook) in the upper level course Computer Science 2. The findings will be used to assess the success the instruction of the identified content area in all the related courses which teach this content, and to determine if instructional changes are required by the instructor(s) involved.

B. Implementation Assessment Plan Components

It is important to create a detailed implementation plan that aligns each student learning outcome with each of the following items:

- (A) how/where program outcomes are learned,
- (B) what evidence/indicator(s) will be collected, including both direct and indirect evidence,

- (C) how the evidence/indicator(s) will be collected and by whom,
 (D) how the evidence/indicator(s) will be analyzed and by whom, and
 (E) how assessment findings will be communicated back to the academic unit's faculty and students and used to improve the program.

Please note, it is important that the implementation plan collects useful information and that the collection and analysis methods are manageable given the resources available in your academic unit.

1. *Instructions:* For each program-level outcome (not course objectives), please provide information for each category listed below. Both direct and indirect evidence/indicators should be utilized in your assessment plan. You are encouraged to utilize existing evidence/indicators when feasible to keep the process manageable. You should also collect evidence/indicators throughout the program and not just at the end.

Program Learning Outcome	A How/Where is outcome learned?	B Evidence/ Indicator(s) of Learning	C Collection method(s) for each source of evidence	D Analysis method(s) for each source of evidence	E Feedback Procedures (Faculty, staff & students)
Student is able to successfully solve problems writing programs which appropriately incorporate selection structures, iteration structures, and functions.	COSC1010, COSC1030, COSC2030 (however it will only be assessed in COSC2030). The skills necessary will be taught in lecture and which incorporates hands on practice in class	The program will be run to determine if the Student successfully created a working Templated Address Book which properly implements selection structures, iteration structures and functions. Student assignments will be kept pertaining to this outcome.	Students will submit their assignments via Moodle. Student's programs will be analyzed by the instructor. It will either solve the problem or it will not.	The number of students writing programs which successfully solve the problem will be reported, as will the number of students who do not, or do not submit the program who are still in the class at its completion. The instructor will assess the outcome.	The final summary report will be available for any interested parties. This form tally the results of how many students mastered the outcome as and will contain the requirements of the assignment used to assess the outcome. Students will receive feedback in Moodle if they have any issues with this assignment.
Student is able to successfully solve problems using object	COSC2030 The skills necessary will be taught in	The program will be run to determine if the Student	Students will submit their assignments via Moodle.	The number of students writing programs which	The final summary report will be available for

oriented programming (create their own classes).	lecture and which incorporates hands on practice in class	successfully created a working Templated Address Book which properly implements classes. Student assignments will be kept pertaining to this outcome.	Student's programs will be analyzed by the instructor. It will either correctly implement object oriented programming or it will not.	successfully solve the problem will be reported, as will the number of students who do not, or do not submit the program who are still in the class at its completion. The instructor will assess the outcome.	any interested parties. This form tally the results of how many students mastered the outcome as and will contain the requirements of the assignment used to assess the outcome. Students will receive feedback in Moodle if they have any issues with this assignment.
Student is be able to successfully apply search, and sort algorithms with abstract data arrays to solve problems.	COSC1010, COSC1030, COSC2030 (however it will only be assessed in COSC2030) The skills necessary will be taught in lecture and which incorporates hands on practice in class	The program will be run to determine if the Student successfully created a working Templated Address Book which properly implements search and sort algorithms, and arrays. Student assignments will be kept pertaining to this outcome.	Students will submit their assignments via Moodle. Student's programs will be analyzed by the instructor. It will either correctly implement search and sort algorithms as applied to arrays or it will not.	The number of students writing programs which successfully apply the search and sort algorithms on the data arrays will be reported, as will the number of students who do not, or do not submit the program who are still in the class at its completion. The instructor will assess the outcome.	The final summary report will be available for any interested parties. This form tally the results of how many students mastered the outcome as and will contain the requirements of the assignment used to assess the outcome. Students will receive feedback in Moodle if they have any issues with this assignment.
Student is able to successfully	COSC1010, COSC1030,	The program will be run to	Students will submit their	The number of students	The final summary

debug their own programs.	COSC2030 (however it will only be assessed in COSC2030). The skills necessary will be taught in lecture and which incorporates hands on practice in class	determine if the Student successfully created a working Templated Address Book which has been properly debugged. Student assignments will be kept pertaining to this outcome.	assignments via Moodle. Student's programs will be analyzed by the instructor. It will either be correctly debugged, and correctly run various tests of the program or it will not	writing programs which successfully solve the problem will be reported, as will the number of students who do not, or do not submit the program who are still in the class at its completion. The instructor will assess the outcome.	report will be available for any interested parties. Students will receive feedback in Moodle if they have any issues with this assignment.
---------------------------	---	---	--	---	---

2. Describe the responsibilities, timeline, and the process for implementing this assessment plan.

C. Global Design & Use

It is critical that program assessment plans be developed and approved by all faculty in the department. In addition, *include student input and external sources* (e.g., national standards, advisory boards, employers, alumni, etc.) in the development of the assessment plan(s).

1. *Describe the process through which your academic unit created this assessment plan.*

Include:

- a. *Timeline regarding when or how often this plan will be reviewed and revised. (This could be aligned with your unit's departmental review schedule.)*
- b. *How students were included in the process and/or how student input was gathered and incorporated into the assessment plan.*
- c. *What external sources were consulted in the development of this assessment plan?*
- d. *Assessment of the manageability of the plan in relation to departmental resources and personnel*

The outcomes will be evaluated once a semester in the computer science II course. Computer Science II is typically taught each semester. The one computer science member of the department who is also the department head will analyze the results each semester. Students will be required to turn in the assignment. It will count as a grade and will be told it is an important assignment which is used to assess the entire program. Because of its importance, it will count twice as much as a normal assignment. Two members of local companies Russell Cowan from True Oil and Shenandoah Redding from Automation Electronics involved in programming were involved in discussing the validity of using a capstone assessment of the program. Two members involved in academia, Micki Goodro (former Computer Science Instructor) and Ralph Andrel (retired Computer Science Instructor and Department Head) and Allyson Anderson (University of Wyoming Computer Science Instructor and UW COSC articulation contact) were also involved in discussing the validity of this capstone approach and said that it sounded good. Allyson in particular said that the University of Wyoming was told that the evaluation of their outcomes had to be tied to measurable things like evaluating student work and said that this approach sounded pretty good. All agreed the approach was valid. All were contacted January of 2010. The plan

will cause increased work assessing and documenting the result, but the assignment is a good and appropriate assignment.