

**Computer Science Department**  
**Computer Science Major Assessment Procedures**  
Updated 2017 May 23

Assessment of the Computer Science Department Computer Science Major is conducted on an ongoing basis via the following scheduled activities:

- CSC Curriculum Committee meetings
  - ▶ Frequency: immediately following May Course Review, plus additional as needed
  - ▶ Objectives:
    - act on curriculum enhancement proposals (course addition, modification, or deletion; changes in required courses; changes in course content / topic lists) relating to courses supporting the major
    - review program-level objectives (student outcomes) with respect to local and accreditation recommendations (particular and specific focus of May Course Review meeting)
  - ▶ Outcome format:
    - minutes of formal meetings, specifically including the May Course Review meeting
    - for approved proposals that change the nature of the curriculum (formal course descriptions, course prerequisites, changes to courses required in the major, etc), formal requests for curriculum actions sent to the College Curriculum Committee
    - for approved proposals that affect course content or organization, updated course description documents
    - summary documenting all proposals submitted during the academic year and each proposals discussion(s) and actions (approved, not approved, still open)
  
- Student major-level course assessment
  - ▶ Frequency: every section of every major course, every semester
  - ▶ Objective: collect student input on course content and pedagogy, technical support, and course objectives via a student questionnaire (sample can be found [here](#))
  - ▶ Outcome format
    - Tabulation of results from student questionnaire
  
- Industry Advisory Board meetings
  - ▶ Frequency: at least once a year, preferably twice (Fall and Spring semesters)
  - ▶ Objective: collect independent opinions of program and course content, suggestions for program improvement (program and course level), report on curriculum changes / proposals and actions taken with respect to previous IAB recommendations since the last IAB meeting
  - ▶ Outcome format:
    - minutes of meeting
  
- Review of major-level course offerings
  - ▶ Frequency: at least annually, preferably every semester
  - ▶ Objective: assess every major-level section offering in order to
    - document actions taken on improvements / action plans suggested in previous course reviews
    - evaluate relevant Industry Advisory Board recommendations
    - evaluate and identify strengths and weaknesses of individual courses
    - suggest opportunities for improvement based on the current offeringAdditional objectives and specific course aspects to be considered and evaluated can be found [here](#)
  - ▶ Outcome format:

- completed Course Review Document (based on current template) which addresses open action items, course delivery successes and failures, evaluation of student course assessment, and recommendations for future actions
- Documentation of Faculty professional development activities
  - ▶ Frequency: annually (typically May)
  - ▶ Objective: document faculty activities taken to maintain and enhance professional skills
  - ▶ Outcome format:
    - for each Faculty teaching major-level courses, a list of professional development activities, *with each item accompanied by objective(s) and result(s) relating to the CIS major and/or to specific professional development intentions*
    - list submitted to Department Chairperson *in anticipation of the deadline for the annual Department Report that is submitted to Academic Affairs* (submit no later than early May or as specified by the Department Chairperson)
- ABET/CAC accreditation maintenance
  - ▶ Frequency: six year cycle beginning with AY 2002-2003
    - Initial visit: Fall 2003
    - Second visit: Fall 2009
    - Third visit: Fall 2015
    - Next visit: Fall 2021
  - ▶ Objective: evaluate the CSC major as a whole to insure that ABET/CAC guidelines are followed
  - ▶ Outcome format:
    - self-study that addresses all ABET/CAC standards and requirements for support documentation, prepared at the beginning of the evaluation cycle
      - self-study generated the academic year *before* the visit is scheduled (i.e., during AY 2020-2021)
      - preparation for the self-study (collecting documentation to be included in the self-study, specifically including materials that will be used to create course displays and deciding which semester / section of each CS major course a course display will be based on) **must begin two years before the visit is scheduled** (i.e., during AY 2019-2020) – this is critical, given that some CS major courses run once every other year, others are offered “as needed”, and some *anticipated* course offerings can be cancelled due to low enrollment of staffing issues
    - note that a follow-up *focused* self-study *may be required* to address any standards that ABET/CAC decides requires action on, complete with documentation of completed actions designed to address concerns – if required, completed during the academic year of the visit (i.e., during AY 2020-2021)
    - formal course displays that present all materials used in presenting each major-level course, accompanied by assessment documentation for that course (includes recent course reviews and samples (good, typical, and poor) of assigned student work) - displays are designed to support self-study requirements and claims
      - course displays based on most recent offerings of courses, one display per course, **display reflects a specific section of the course and NOT an aggregate of all sections**
    - results of formal assessment of program-level program objectives (student outcomes)
      - display based on a **single** student experience within each course *specified as being responsible for performing formal assessment for a specific program-level program objective* (student outcome)
      - display includes:
        - experience description as distributed to students
        - collection of *every student’s submission*
        - assessment of *every student’s submission*
        - summary of assessments

- documentation that the summary of assessments indicates that the target objective(s) for the program objective:
  - is/are met or is/are *not* met, **and**
  - recommendations for future actions (note – for all cases where a target objective is **not** met, specific actions **must** be specified to remediate the situation)
- ongoing documentation collection / generation in anticipation of all preceding activities

Analysis and integration of assessment findings takes place in two specific activities:

- the review of major-level course offerings (conducted at least annually) and
- ABET/CAC accreditation maintenance (PEO and PO review yearly (May); full curriculum review every three years (base year 2001 - next reviews 2016-2017 and 2019-2020))

## Computer Science Course Assessment

Code Number: \_\_\_\_\_ Course and Section: \_\_\_\_\_ Instructor: \_\_\_\_\_

2016 Spring

For each question, please circle the number representing the response that you feel most accurately describes your answer to the question. The results of this assessment will be used to assist the Computer Science Department in enhancing curriculum offerings: your participation is important and appreciated. Please do not write your name anywhere on this form.

	<b>Grading, Exams, Assignments, Laboratory Exercises</b>	<b>Very Effective</b>	<b>Effective</b>	<b>Moderately Effective</b>	<b>Somewhat Ineffective</b>	<b>Ineffective</b>	<b>Not Applicable</b>
1	Information in the syllabus about how the final grade is determined	1	2	3	4	5	6
2	Clarity of exam questions	1	2	3	4	5	6
3	Exams' focus on important aspects of the course	1	2	3	4	5	6
4	Effectiveness of assignments in understanding course material	1	2	3	4	5	6
5	Effectiveness of closed lab exercises relating to important course concepts	1	2	3	4	5	6
6	Effectiveness of closed lab exercises relating to important technical details	1	2	3	4	5	6
7	Effectiveness of instructor availability and support in closed lab	1	2	3	4	5	6
8	Effectiveness of the textbook as a technical resource	1	2	3	4	5	6
9	Effectiveness of the textbook in understanding course concepts	1	2	3	4	5	6
10	Effectiveness of small group discussion in understanding course material	1	2	3	4	5	6
11	Effectiveness of term papers	1	2	3	4	5	6
12	Effectiveness of programming projects	1	2	3	4	5	6
13	Effectiveness of group projects	1	2	3	4	5	6

	<b>Course Results</b>	<b>Strongly Agree</b>	<b>Agree</b>	<b>Neutral</b>	<b>Disagree</b>	<b>Strongly Disagree</b>
14	My knowledge and understanding of Computer Science increased in this course	1	2	3	4	5
15	I understood and made progress towards achieving course objectives	1	2	3	4	5
16	My interest in Computer Science has increased as a result of the course	1	2	3	4	5
17	This course helped me to think independently about the course material	1	2	3	4	5
18	This course actively involved me in what I was learning	1	2	3	4	5

	<b>Course Workload</b>	<b>Too Many</b>	<b>About Right</b>	<b>Too Few</b>	<b>Not Applicable</b>
19	The number of closed lab exercises in this course was ...	1	2	3	4
20	The number of program assignments in this course was...	1	2	3	4

	<b>Course Workload</b>	<b>Very Difficult</b>	<b>Difficult</b>	<b>About Right</b>	<b>Somewhat Elementary</b>	<b>Very Elementary</b>	<b>Not Applicable</b>
21	For my preparation, the level of difficulty of this course was...	1	2	3	4	5	6
22	The pace at which the material was covered was...	1	2	3	4	5	6
23	The workload for this course compared to similar courses I have taken was...	1	2	3	4	5	6
24	The workload for this course compared to similar courses I have taken in the CSC major was...	1	2	3	4	5	6

(CONTINUED ON REVERSE)

	<b>Hardware &amp; Software Support</b>	<b>Strongly Agree</b>	<b>Agree</b>	<b>Neutral</b>	<b>Disagree</b>	<b>Strongly Disagree</b>	<b>Not Applicable</b>
25	Hardware used to support closed lab for this	1	2	3	4	5	6

	course was adequate						
26	Software used to support closed lab for this course was adequate	1	2	3	4	5	6
27	Hardware used to support open lab for this course was adequate	1	2	3	4	5	6
28	Software used to support open lab for this course was adequate	1	2	3	4	5	6

	<b>Student Effort</b>	<b>Much More Than Most Courses</b>	<b>More Than Most Courses</b>	<b>About The Same As Other Courses</b>	<b>Less Than Most Courses</b>	<b>Much Less Than Most Courses</b>
29	I studied and put effort into this course...	1	2	3	4	5
30	I was challenged by this course...	1	2	3	4	5

	<b>Student Information</b>	<b>Requirement within Computer Science Major</b>	<b>Requirement within <i>non</i>-Computer Science major</b>	<b>Requirement within Computer Science <i>Minor</i></b>	<b>College Requirement (Division II)</b>	<b>Free Elective</b>
31	Which best describes why you took this course?	1	2	3	4	5

	<b>Student Information</b>	<b>Freshman</b>	<b>Sophomore</b>	<b>Junior</b>	<b>Senior</b>
32	What is your class level?	1	2	3	4

	<b>Program (Major) Objectives</b>	<b>Strongly Agree</b>	<b>Agree</b>	<b>Neutral</b>	<b>Disagree</b>	<b>Strongly Disagree</b>	<b>Not Applicable</b>
33	This course improved my knowledge of current terminology, concepts and methodologies in the computer field	1	2	3	4	5	6
34	This course improved my ability to analyze a problem, design and defend potential solutions to the problem, and implement and verify a solution	1	2	3	4	5	6
35	This course improved my ability to generate appropriate documentation for a problem and its solution	1	2	3	4	5	6
36	This course improved my ability to present in written and oral form a discussion of a problem and its solution	1	2	3	4	5	6
37	This course improved my ability to develop and present in oral and written form a proposal for an independent or group project, and give a formal presentation of the completed project	1	2	3	4	5	6
38	This course improved my awareness of the interdisciplinary connections of Computer Science	1	2	3	4	5	6
39	This course improved my awareness of the ethical and societal issues relating to the impact of computers on society	1	2	3	4	5	6
40	This course improved my understanding of relevant areas of mathematics, including discrete structures, probability and statistics, and elementary calculus, and applications of these areas to Computer Science	1	2	3	4	5	6

<b>Additional Comments</b>							

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End of Semester  
Course Review Procedures

Updated 2017 May 23

After the close of the Spring semester final exam period (or at the close of the Fall and Spring semesters if deemed necessary) all faculty who have taught a Computer Science major course will gather to review all major-level courses taught during the just-completed year / semester. Every faculty member will prepare a course review document and a short presentation for each course that she/he has just completed. The objectives of the course review document, presentation, and subsequent discussion are to:

- Document significant aspects of the course offering
- Assess the effectiveness of the course in realizing stated course goals and objectives;
- Assess the effectiveness of the course in realizing stated program goals and program objectives (student outcomes);
- Consider possible enhancements to the course and to the overall curriculum.

The following items will be considered by faculty in preparing their course review documentation and presentation:

- Course goals and objectives as specified in formal department course documents, specifically including whether documented indicators of what is to be covered and time allocated during class have been addressed
- Quizzes and results
- Tests (including final exam) and results
- Laboratory exercises and results
- Programming assignments and results
- Homework and results
- Student in-class presentations
- Other student activities and the results of such activities

After considering the above, the assessment must address those of the following points that are relevant:

- Was the course presentation a substantive deviation from the department course document? If so, why, what was the specific nature of the deviation, and should the deviation form the basis for modification to the department course document?
- Does the amount of material covered in the course need adjusting upwards or downwards?
- Are there specific topics that should be added to the course? Dropped from the course?
- Should the amount of time allotted for each topic be increased? Decreased?
- Does the current format for the course need reconsideration?
- Were there problems in meeting all of the course objectives? If so, why?
- Were there any new techniques (technical and/or pedagogical) implemented in the course presentation? If so, what were they and how did they affect student performance?
- Are the course goals and objectives compatible with current program goals and objective?
- Are the course goals and objectives current and appropriate for the state of the industry?
- Do the course objectives adequately express and allow for assessment of the course goals?
- Are there additional or alternate student activities that could prove useful?

Documentation of the course offering, assessment results, and analysis will take the form of a Word document that implements content and formatting standards set forth in the Course Review Document template. Note that the template is an evolving document that is reviewed annually and revised as appropriate – when preparing a review, **it is important that the *current* template be consulted to insure that all required elements are included.**

Faculty will submit completed documentation to a designated collector (typically chair of CS-CC, possibly chair of CS assessment or CS accreditation) for archival; archives will subsequently be made available for inspection by current and future faculty supporting the program.

The presentation of the documentation for each course is to be a summary that takes approximately five minutes, with questions and discussions to follow. The department will use the results of the presentations and discussions to determine which courses (if any) will undergo more rigorous review and possible revision. Note that while it is the responsibility of a course presentation to raise any issues deemed appropriate, it is *not necessarily* the objective of the review presentation and discussion to provide solutions to issues: discussions of a presentation should be brief, with any unresolved issues noted and additional discussion and action plans deferred to the next Computer Science Curriculum Committee meeting.

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**COURSE REVIEW DOCUMENT**  
**Updated 2017 August 11**

**semester year**

**CSC *nmn* Title**  
**Prerequisite(s):**  
**Instructor:**

***nm cr.* [DII] [W/Q] [W-II|W-III]**

**Required resources(s):** Author. **Title.** Publisher, copyright date.  
**Additional reference resources:** (journals, websites, articles, texts, **software**, etc.)

**Course typically offered:** {Every Semester|Yearly|Every Other Year|As Needed}

**Recommendations from previous offering of course:**

- for frequently offered courses ( $\leq$  CSC260) *go back at least three or four semesters* and include recommendations from *all* reviews for the course, *not just your own*
- for less frequently offered courses, go back at least two offerings, *not just your own*
- say "none" if no specific recommendations were made (this should never be encountered unless dealing with an initial offering of a course)

**Recommendations from Industry Advisory Board:**

- look for any IAB recommendations that might be directly *or even indirectly* relevant to the course – review IAB minutes from at least past two years
- say "none" if no specific recommendations were made

**Recommendations from Computer Science major curriculum committee minutes and/or discussions:**

- look for any CS-CC recommendations that were relevant to the course – review minutes from at least past two years
- say "none" if no specific recommendations were made

**Professional development activities that led to changes in the course offering:**

- look for *any* activities that were or will be listed under your "Professional Development" review component that were *in any way* related to changes in the way that the course was offered – go back two years
- say "none" if you engaged in no professional development activities that caused *any* changes in the way the course was offered – again, go back two years

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**Analysis of Course Offering**

**Actions on previous recommendations:**

- for any recommendations or activities listed above, **EXPLICITLY** indicate actions taken to address the recommendations
- if there were recommendations that were not addressed, indicate why (lack of resources, a better text couldn't be located, etc.)
- if you wish to provide lengthy discussion and/or details relating to recommendations, include them in the narrative discussion (next section) and include a "see narrative for details" note here

**Narrative discussion of the course offering:**

**During the discussion, explicitly address recommendations from previous offerings and the IAB in detail if the recommendations were acted on and produced significant results (positive or negative) - this will result in some overlap with the prior bulleted list of actions on recommendations.** Also, explicitly relate how any professional development activities influenced the course offering. Include information about pedagogical techniques that seemed successful and/or unsuccessful. This section should be thought of as a "mini diary" that you and others can refer to the next time that the course is offered. Include anything that may be of value, because the course may not be offered in the near future and/or you may not be scheduled to teach in it the immediate future.

**Enrollment & Grade results:**

enrollment statistics	start of semester	disappears (awarded "NG")	withdrawals	students receiving grade
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Section Number	a	b	c	d
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assert (a == b + c + d); add rows if teaching multiple sections

	100-90	89-80	79-70	69-60	59-50	> 50
exam 1						
exam 2						
final exam						
quiz 1						
quiz 2						
labs						
projects						
paper						

Remove/add rows from the preceding table as needed - delete the whole table if appropriate. Labs, projects and papers can be reported on a "per assignment" basis or in summary form, whichever makes more sense (in general, less detail is preferable, but if a new assignment approach was introduced, more detail may be useful in supporting your analysis - **just make sure it's clear whether you're reporting aggregate or individual assignment results**). If grades are awarded on other than the scale provided, please convert to the scale above, otherwise **create another table and make your scale very clear**.

	A	A-	B+	B	B-	C+	C	C-	D+	D	D-	F	I	W	NG
exam 1													n/a	n/a	n/a
exam 2													n/a	n/a	n/a
final exam													n/a	n/a	n/a
final grade															

Remove/add rows from the preceding table as needed - at a minimum, the final exam grade distribution and the final grade distribution *must* appear in either the first or second table.

#### Grade analysis:

Discuss any noticeable patterns in grade distribution, changes in grade distribution from previous offerings of the course to this offering, external factors that may have affected student performance (software improvements, hardware issues, etc.).

#### End-of-semester student course assessment questionnaire results:

(Insert tabulated results here)

#### Analysis of end-of-semester student course assessment questionnaire:

Include positives as well as negatives.

(Separate paragraph) Check which PO (Program Objectives) the course addresses (check the course information document - (<http://cs.salemstate.edu/dept/index.php?page=184>)) and note the degree to which the student responses indicate that they are being addressed. No course addresses all POs, so include a list of the specific assessment questionnaire question numbers that address the specific POs the course DOES address along with the corresponding student rating.

#### Recommendations for future offerings of this course

- recommendations should be short summaries of analysis that appears in the Analysis of Course Offering sections
- **don't include a recommendation unless it is at least touched on in the Analysis sections**
- recommendation
- recommendation
- recommendations to "continue doing 'x'" are acceptable

**NOTE** – please remember that future reviews for a course are required to include all recommendations that you make in this section of your review, and are also required to indicate whether each recommendation was acted on or not. Making more than a few recommendations should be done only if you believe they are all significant – otherwise, over time the “list of recommendations and consequent actions” will become overly long...

Specifically, if you have a suggestion / recommendation relating to pedagogical style, include it in this formal recommendations list only if you mean to recommend that everyone teaching the course adopt it – such a recommendation will result in a CS-CC discussion of the recommendation and a decision whether to support the recommendation.

Note that you can make any suggestions or recommendations you wish in the narrative section of a review – the point is to include only those that you think should apply to all future offerings of the course here.

Please remember to delete this text box when you have completed your review.

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**Note:** anything in red should be removed from actual reviews, with most red entries replaced with specific information as appropriate.