/ / / / / / / / / / / / / / / / / / / /

PROGRAM EVALUATION

/ / / / / / / / / / / / / / / / / / / /

2016 - 2017

Program Name: Computer Science

Self-Study Members: Michael Wagner

Allan Hancock College Program Review

Comprehensive Self-Study

Program review is intended to be a reflective process that builds on the extensive information gathered for the Annual Updates and lays out the program's major directions for the future. (Place your responses in the expandable text boxes below each question.)

I. Program Mission *(must align with college mission statement)*

Describe the need that is met by the program or the purpose of the program. For CTEA programs only, show that "the program does not represent an unnecessary duplication of other vocational or occupational training programs in the area." (Sample: *The Health, Physical Education, and Recreation Division is committed to providing excellent education opportunities to our students for their affective, cognitive and psychomotor development as they pursue sport, recreation, physical education, health education and wellness. We will encourage our students to further and sustain their individual endeavors toward the regular, lifelong pursuit of physical activity and a healthy lifestyle.)*

The Computer Science Program is contained in the Mathematical Sciences Department. The program provides quality educational opportunities that enhance student learning and that enable students to reach their educational, occupational, and/or personal goals. The objectives of the courses in the program are to:

- Provide lower division courses for transfer to a four-year university.
- Provide courses for students to meet their vocational/technical degree goals.
- Provide skill training in the foundations of computing and of software programming of computer systems.

These objectives meet the mission of the institution. The mission of the institution is to provide members of the community quality educational opportunities that enhance student learning and enhance the creative intellectual, cultural, and economic vitality of the community at large.

II. Progress Made Toward Past Program/Departmental Goals

Summarize the progress the program/department has made toward achieving its goals during the past six years. Discuss briefly the quality, effectiveness, and strengths of the program as reflected in its Annual Updates. Show the relationship between the program goals, the mission of the college, the district strategic plan, and the impact on student development and success.

Many goals have been set and achieved over the past six years. Here are the highlights:

- All students learning outcomes for computer science have been assessed.
- All computers in M201 have been replaced (this was a $40,000 project)

- A part-time instructor has been hired (first part-time instructor in over 8 years).
- We have complete coverage of the Transfer Model Curriculum; i.e. we have courses that meet each course in the TMC.
- Online curriculum has been developed and utilized.
- CS131 was created to match Cal Poly's CSC225 course.
- CS175 has been removed.

These actions support keeping the discipline current, which in turn, ensures articulation with our 4-year partners and ensures students have modern skills for the workforce.

III. Analysis of Resource Use and Program Implementation

Describe the program's current allocation and use of human, physical, technology, and fiscal resources. Are resources sufficient and appropriate to meet program needs? Can program resources be reallocated to better meet student needs?

The computer science program uses the following resources:

- One full time instructor (Michael Wagner)
- One part time instructor (Carl Reinwald teaches CS131 – Computer Organization)
- A full-time math instructor that teaches a math-based computer science courses (Chris Pavone teaches CS161 – Discrete Structures)
- 41 Windows-based computers in room M201. 40 computers are for students use and 1 computer is for instructor uses.
- A projector that can project the teacher's computer screen.

These resources are acceptable, however, technology is ever changing. The program needs the following:

- All computers in M201 need to be upgraded to Windows 10 (Currently, each system has Windows 7).
    - Old software needs to be uninstalled
- Another part-time instructor to teach one class.

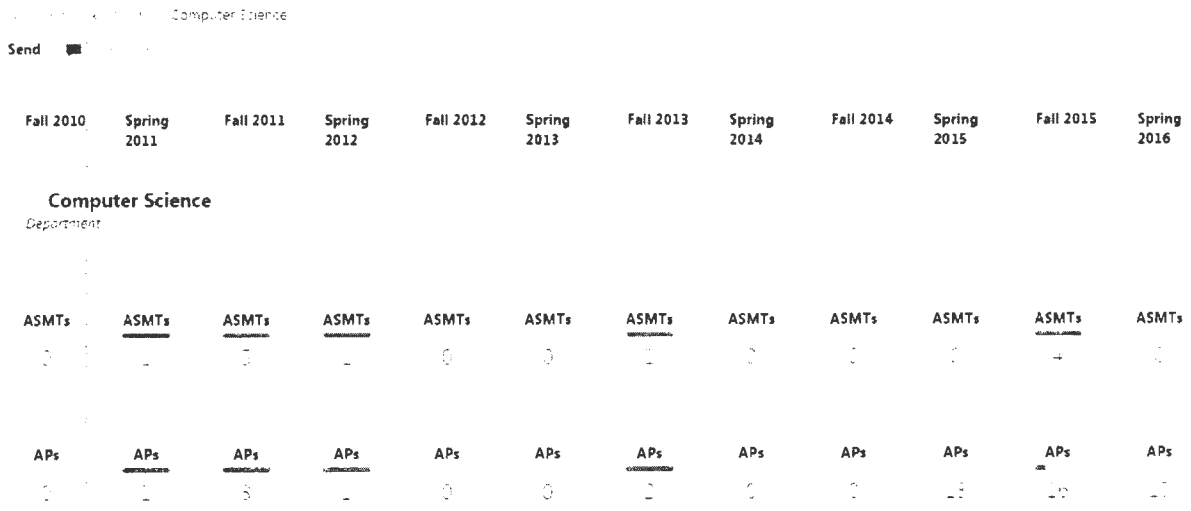
IV. Program SLOs/Assessment

What are your program student learning outcomes? Have each of these been assessed since the last comprehensive program review? How are they measured? What did the assessment data indicated about the strengths and weaknesses of your program? What changes do you plan based on these data?

Computer Science Program Learning Outcomes

1. Recall significant computer science concepts, vocabulary and theories.
2. Produce elementary programming projects in a variety of languages.
3. Demonstrate the ability to follow instructions.
4. Find and correct programming errors

All course SLOs have been mapped to program SLOs (SLOs can be found on the attached pages). A program SLOs is achieved if the supporting courses' SLOs' assessments indicate an average rating of 2 ("meeting standard") or above over a six-year program review period. After six years of course SLO data assessment, the program SLO assessment will be completed.



The current course SLOs are attached.

V. Trend Analyses/Outlook

Using the information already gathered in the AUs (e.g., enrollment and achievement data; student learning outcomes assessment and analysis; input by advisory boards; existing articulation agreements; labor market trends) summarize the major trends, challenges, and opportunities that have emerged in the program since the last program review

See next page.

Trends

The computer science discipline is growing even with the headwinds of decreasing FTES campus-wide.

Allan Hancock College
Fall 2010 FTES: 4,239 -> Fall 2015 FTES: 3,807 (Campus wide: 10.2% decrease)

Computer Science
Fall 2010 FTES: 29.1 -> Fall 2015 FTES: 39.9 (CS Discipline: 27% increase)

The success rate and retention rate are comparable to AHC:
Allan Hancock College Spring 2016
Success rate: 73.22%
Retention rate: 89.39%

Computer Science Spring 2016:
Success rate: 67.81%
Retention rate: 89.06%

Challenges/Opportunities

Textbooks are a challenge in this discipline. Computer science is unique in that there is an overwhelming amount of learning material available online for free. However, we must still require students to purchase textbooks otherwise we risk losing articulation. The textbooks are often $150+, which is almost as much as the tuition itself.

Misunderstanding of this discipline is also a challenge. Decision makers view computer science and information technology as the same discipline. It's much like confusing mechanical engineering (e.g. designing a machine) and automotive technology (e.g. maintaining a machine). This confusion leads to skewed decision making.

Articulation with UCs is an unexpected challenge. Some UCs have very specific requirements for computer science courses. Further, some UCs have conflicting requirements. For example, UC Irvine requires a certain programming language that almost no community college teaches. Continued review and consideration of the responses from UCs will be done to ensure the opportunities we do have are acted upon.

Lastly, there is the challenge of not being able to create a Computer Science ADT (Associate Degree for Transfer). The problem is that the required Calculus and Physics classes are 5 units each, which puts the Computer Science ADT above the maximum number of units. The computer science program has done everything it can to meet these requirements: CS131 had its units dropped and all courses have been carefully

reviewed/modified to ensure compliance. However, the units of outside disciplines prevent the creation of the degree.

As applicable, please address the breadth, depth, currency, and cohesiveness of the curriculum in relation to evolving employer needs and/or transfer requirements, as well as other important pedagogical or technology-related developments.

Much work has been done to ensure that our core curriculum: CS111, CS112, CS131, and CS161 meet statewide standards. All four courses have been modified to win C-ID approval and they are listed in the Core requirements for the Computer Science Associate in Science for Transfer (AS-T). This approval, along with our ongoing articulation agreements, signifies the breadth, depth, currency, and cohesiveness of the curriculum.

VI. Long-Term Program Goals and Action Plans (Aligned With the College Educational Master Plan)

Describe the long-term plans for changing or developing new courses and programs, other actions being taken to enhance student success, and the need for professional development activities and other resources to implement program goals. Be sure to show how these plans are related to assessment results. (Plan should cover five-year period and include target dates and resources needed.)

- Updating the software in M201. Specifically, upgrade to Windows10 and update the programming tools. Also, do an audit of software to determine what's no longer needed. (Fall 2018)
- Finding a new textbook and new programming tools for CS181 (Game Programming). The tools used currently are no longer supported by Microsoft. (Fall 2017)
- Make CS111 and CS112 use the same programming language, thus allowing the course to use one book. This involves a complete replacement of learning materials in one of the courses. (Fall 2018)
- Review each course's textbook to determine if there's a less expensive, high-quality alternative. (Fall 2018)
- Modify our CS161 outline to include more language regarding proofs. This may help us regain articulation with Cal Poly. Cal Poly recently dropped all community college articulation for discrete math classes because of the lack of emphasis on proofs. (Fall 2018)

- Research the feasibility of changing curriculum to include a component regarding mobile phone app programming. If it's determined to be beneficial, then work with AP&P to make required changes. (Fall 2019)

STUDENT DATA SUMMARY

Data analysis is a critical component of program review. The three categories below should be used as guidelines in developing a summary of the student data.

State at least three positive factors about the discipline/program identified by students. Include the number (or percentage) of students responding and any implications for planning.

- 80% of students are "highly satisfied" and 18% are "somewhat satisfied" with the quality of instruction in the program
- 78% of students are "highly satisfied" and 19% are "somewhat satisfied" with the contribution towards their intellectual goals.
- 80% of students are "highly satisfied" and 18% are "somewhat satisfied" with the clarity of course goals and learning objectives.

State at least three negative factors about the discipline/program identified by students. Include the number (or percentage) of students responding and any implications for planning.

- Only 45% of students are "highly satisfied" and 28% are "somewhat satisfied" with advice about the program from counselors.
- Only 30% of students are "highly satisfied" and 26% are "somewhat satisfied" with the availability of appropriate resources in the libraries.
- Only 35% of students are "highly satisfied" and 32% are "somewhat satisfied" with the course assistance through tutorial services.

State any other information (use responsive numbers) that you obtained from student data (e.g. focus groups, questionnaires, or SGIDs) that may be of special interest to the self study team. What planning implications will result from this information?

Regarding the lower satisfaction rate with counselors:

I believe this is due to confusion about what computer science is (as noted in the "challenges" section). If a student tells a counselor that he or she enjoys building computers, the counselor may direct them to computer science, which is incorrect (they should be directed to electronics). The solution to this is education: we will consider having more contact with the counselors and perhaps develop a "cheat-sheet" with recommendations of courses and paths.

Regarding the lower satisfaction rate with resource availability in the library:

I believe this question should be modified because the resources are available i*n the math center*; not the library. The library isn't equipped to handle the programming needs of students. Further, we like sending students to STEM rooms such as the Math Center, MESA, and/or the STEM center because there's a higher chance a student will find someone else from class. These facilities are set up with the appropriate programming software.

Regarding the lower satisfaction rate with tutorial services:

We need to do a better job of advertising and organizing tutoring services. We have available tutors, but it feels like the available hours changes frequently and there's confusion about where students should go (Math center, STEM, Tutoring center, etc.). In the classroom, we will relay tutoring availability to students more frequently.

COURSE REVIEW VERIFICATION

Discipline: Computer Science Year: 2017

As part of the program evaluation process, the self-study team has reviewed the course outlines supporting the discipline/program curriculum. The review process has resulted in the following recommendations:

1. The following course outlines are satisfactory as written and do not require modification (list all such courses):
   CS112, CS131, CS161

2. The following courses require minor modification to ensure currency. The self study team anticipates submitting such modifications to the AP&P, FALL 20_17_ SPRING 20____:
   CS111

3. The following courses require major modification. The self study team anticipates submitting such modifications to the AP&P committee, FALL 20_16_ SPRING 20____:
   CS102, CS181

GRADUATION REQUIREMENTS: General Education (GE), Multicultural/Gender Studies (MCGS) and Health & Safety (H&W) Courses.

The following courses were reviewed as meeting an **AHC GE** requirement. The AP&P GE Criteria and Category Definitions (GE Learning Outcomes) forms were submitted to the AP&P for review on: _____

The following courses were reviewed as meeting the **MCGS** requirement. The AP&P MCGS Criteria and Category Definitions (MCGS Learning Outcomes – To Be Developed) forms were submitted to the AP&P for review on:

_____

The following courses were reviewed as meeting the **H&W** requirement. The AP&P H&W Studies Criteria (To Be Developed) and Category Definitions (H&W Learning Outcomes – To Be Developed) forms were submitted to the AP&P chair for review on: _____

Course Review Team Members:

Michael Wagner		5/22/17
Name	Signature	Date
Derek Mitchem		5/19/17
Name	Signature	Date
Bob Bryant		5/18/17
Name	Signature	Date
Name	Signature	Date
Larry Manalo	Larry Manalo	6/5/2017
AP&P Chair	Signature	Date
Richard Mahon		6/12/17
Academic Dean	Signature	Date

REVIEW OF PREREQUISITES, COREQUISITES, AND ADVISORIES
Summary

List all courses in Discipline/Program

Course Prefix No	**CURRENT** Prequisite/Coreq/Advisory/ Limitation on Enrollemnt	**LEVEL OF SCRUTINY** (Statistics, Content Review, UC/CSU Comparison, Student Survey – list all)	**RESULT** (i.e., current PCA is established, should be dropped/modified or new PCA is established)	**ACTION TO BE TAKEN** (None, APP- Major or Minor)
CS102	Advisory: CBOT 100	Content review	Current PCA established	None
CS111	Prerequisite: Math 311. Advisory: CS 102	Content review	Current PCA established	None
CS112	Prerequisite: CS111	Content review	Current PCA established	None
CS161	Prerequisite: MATH 181 and CS 111	Content review	Current PCA established	None
CS181	Prerequisite: CS111 Advisory: CS112	Content review	Current PCA established	None
CS131	Prerequisite: CS111	Content review	Current PCA established	None

Note: If prerequisite or corequisite is being established for the first time, course must be modified to include entrance skills.

Completed forms and all backup documentation should be maintained at the department. This summary report should be included in the self-study report to be conducted during the next academic year.

Part 4: Learning Outcomes

Allan Hancock College

Course Statistics And Evidence

Computer Science

Date: 09/07/2016

Terms: Summer 2016, Spring 2016, Winter 2016, Fall 2015, Summer 2015, Spring 2015, Fall 2014, Summer 2014, Spring 2014, Fall 2013, Summer 2013, Spring 2013, Fall 2012, Summer 2012, Spring 2012, Fall 2011, Summer 2011, Spring 2011, Fall 2010

Summary

Statistic	Count	Courses/Contexts
Courses	6	CS102, CS111, CS112, CS131, CS161, CS181
Courses with CSLOs	6	CS102, CS111, CS112, CS131, CS161, CS181
Courses without CSLOs	0	
Courses with CSLOs mapped to PSLOs	6	CS102, CS111, CS112, CS131, CS161, CS181
Courses without CSLOs mapped to PSLOs	0	
Courses with directly assessed PSLOs	0	
Courses with CSLOs mapped to ILOs	6	CS102, CS111, CS112, CS131, CS161, CS181
Courses without CSLOs mapped to ILOs	0	
Courses with directly assessed ILOs	0	
Courses with Assessments	6	CS102, CS111, CS112, CS131, CS161, CS181
Courses with all Assessments scored	4	CS102, CS111, CS112, CS131
Courses with some Assessments scored	1	CS181
Courses without any Assessment scored	1	CS161
Courses without Assessments	0	
Courses with Action Plans	6	CS102, CS111, CS112, CS131, CS161, CS181
Courses with all Action Plans answered	0	
Courses with some Action Plans answered	6	CS102, CS181, CS161, CS111, CS112, CS131
Courses without any Action Plan answered	0	
Courses without Action Plans	0	

CS102 - Intro to Computing with HTML

SLOs

CSLOs	» CS102 SLO1 - Use basic terms applicable to computer systems appropriately. » CS102 SLO2 - Develop simple static HTML web pages » CS102 SLO3 - Describe some of the major historical events related to computing
Mapped PSLOs	**Computer Science Program Outcomes** Computer Science Program Outcomes » CS PSLO - Recall significant computer science concepts, vocabulary and theories. » CS PSLO - Produce elementary programming projects in a variety of languages.
Mapped ILOs	**ILO** ILO 4 - Information & Technology Literacy » ILO 4B - Technology Literacy: Proficiency in a technology and the ability to choose the appropriate tools.

Assessments

Fall 2011

Web Page Assignment

SLO	Scored	Institutional Exceeds Standards	Institutional Meets Standards	Institutional Below Standards	N/A
CS102 SLO2 - Develop simple static HTML web pages	25 of 69	80%	16%	4%	9

This is a test

SLO	Scored	Institutional Exceeds Standards	Institutional Meets Standards	Institutional Below Standards	N/A
CS102 SLO2 - Develop simple static HTML web pages	23 of 69	82.61%	4.35%	13.04%	12

Fall 2015

CS102

SLO	Scored	Institutional Exceeds Standards	Institutional Meets Standards	Institutional Below Standards	N/A
CS102 SLO1 - Use basic terms applicable to computer systems appropriately.	33 of 103	75.76%	9.09%	15.15%	0
CS102 SLO2 - Develop simple static HTML web pages	33 of 103	84.85%	0%	15.15%	0
CS102 SLO3 - Describe some of the major historical events related to computing	33 of 103	81.82%	0%	18.18%	0

Action Plans

Fall 2011

Course Improvement Plan Computer Science Fall 2011

Expected Action	Action Type	Respondent	Action Taken	Date	Resource Request
Allan Hancock College >> Computer Science >> CS102 - Fall 2011					
What did the assessment data indicate about the strengths of your course?	No action type	Anonymous	That the majority of students can create simple Web pages.	2012-04-19	
What did the assessment data indicate about the weaknesses of your course?	No action type	Anonymous	None at this time.	2012-04-19	
What changes have you made/do you plan to make based on the data? What resources would you need, if any, to make these changes?	No action type	Anonymous	None at this time.	2012-04-19	

Fall 2015

Fall 2015 Section Improvement Plan

Expected Action	Action Type	Respondent	Action Taken	Date	Resource Request
Allan Hancock College >> Computer Science >> CS102 >> Section A - Fall 2015					
What did the assessment data indicate about the strengths of your course?	No action type	Anonymous	Most student met or exceeded the assessment.	2016-04-04	
What did the assessment data indicate about the weaknesses of your course?	No action type	Anonymous	(Blackboard deleted some of the students in Fall 2015).	2016-04-04	
What changes have you made/do you plan to make based on the data? What resources would you need, if any, to make these changes?	No action type	Anonymous	No changes at this time.	2016-04-04	

Fall 2015 Section Improvement Plan

Expected Action	Action Type	Respondent	Action Taken	Date	Resource Request
Allan Hancock College >> Computer Science >> CS102 >> Section A - Fall 2015					
What did the assessment data indicate about the strengths of your course?	No action type	Anonymous	Most student met or exceeded the assessment.	2016-04-04	
What did the assessment data indicate about the weaknesses of your course?	No action type	Anonymous	(Blackboard deleted some of the students in Fall 2015).	2016-04-04	

What changes have you made/do you plan to make based on the data? What resources would you need, if any, to make these changes?	No action type	Anonymous	No changes at this time.	2016-04-04	

Fall 2015 Section Improvement Plan

Expected Action	Action Type	Respondent	Action Taken	Date	Resource Request
Allan Hancock College >> Computer Science >> CS102 >> Section A - Fall 2015					
What did the assessment data indicate about the strengths of your course?	No action type	Anonymous	Most student met or exceeded the assessment.	2016-04-04	
What did the assessment data indicate about the weaknesses of your course?	No action type	Anonymous	(Blackboard deleted some of the students in Fall 2015).	2016-04-04	
What changes have you made/do you plan to make based on the data? What resources would you need, if any, to make these changes?	No action type	Anonymous	No changes at this time.	2016-04-04	

CS111 - Fundamentals of Programming 1

SLOs

CSLOs	» CS111 SLO1 - Demonstrate the ability to solve simple problems and express solutions as algorithms. » CS111 SLO2 - Use fundamental programming constructs in a high level language. » CS111 SLO3 - Find and correct simple bugs.
Mapped PSLOs	**Computer Science Program Outcomes** Computer Science Program Outcomes » CS PSLO - Produce elementary programming projects in a variety of languages. » CS PSLO - Find and correct programming errors.
Mapped ILOs	**ILO** ILO 5 - Quantitative Literacy » ILO 5 - Quantitative Literacy: Use mathematical concepts and models to analyze and solve real life issues or problems.

Assessments

Fall 2011

C++ Programming

SLO	Scored	Institutional Exceeds Standards	Institutional Meets Standards	Institutional Below Standards	N/A
CS111 SLO2 - Use fundamental programming constructs in a high level language.	35 of 69	65.71%	17.14%	17.14%	6

C++ Programming

SLO	Scored	Institutional Exceeds Standards	Institutional Meets Standards	Institutional Below Standards	N/A
CS111 SLO2 - Use fundamental programming constructs in a high level language.	21 of 69	61.9%	23.81%	14.29%	7

Fall 2015

Computer Programming

SLO	Scored	Institutional Exceeds Standards	Institutional Meets Standards	Institutional Below Standards	N/A
CS111 SLO1 - Demonstrate the ability to solve simple problems and express solutions as algorithms.	30 of 104	63.33%	23.33%	13.33%	0
CS111 SLO2 - Use fundamental programming constructs in a high level language.	30 of 104	63.33%	23.33%	13.33%	0
CS111 SLO3 - Find and correct simple bugs.	30 of 104	63.33%	23.33%	13.33%	0

Action Plans

Fall 2011

Course Improvement Plan Computer Science Fall 2011

Expected Action	Action Type	Respondent	Action Taken	Date	Resource Request
Allan Hancock College >> Computer Science >> CS111 - Fall 2011					
What did the assessment data indicate about the strengths of your course?	No action type	Anonymous	That the majority of students can program introductory C++ programs.	2012-04-19	

What did the assessment data indicate about the weaknesses of your course?	No action type	Anonymous	None at this time.	2012-04-19	
What changes have you made/do you plan to make based on the data? What resources would you need, if any, to make these changes?	No action type	Anonymous	None at this time.	2012-04-19	

Fall 2015

Fall 2015 Section Improvement Plan

Expected Action	Action Type	Respondent	Action Taken	Date	Resource Request
Allan Hancock College >> Computer Science >> CS111 >> Section A - Fall 2015					
What did the assessment data indicate about the strengths of your course?	No action type	Anonymous	Most students are meeting or exceeding the assessment.	2016-04-04	
What did the assessment data indicate about the weaknesses of your course?	No action type	Anonymous	None at this time	2016-04-04	
What changes have you made/do you plan to make based on the data? What resources would you need, if any, to make these changes?	No action type	Anonymous	No changes at this time.	2016-04-04	

Fall 2015 Section Improvement Plan

Expected Action	Action Type	Respondent	Action Taken	Date	Resource Request
Allan Hancock College >> Computer Science >> CS111 >> Section A - Fall 2015					
What did the assessment data indicate about the strengths of your course?	No action type	Anonymous	Most students are meeting or exceeding the assessment.	2016-04-04	
What did the assessment data indicate about the weaknesses of your course?	No action type	Anonymous	None at this time	2016-04-04	
What changes have you made/do you plan to make based on the data? What resources would you need, if any, to make these changes?	No action type	Anonymous	No changes at this time.	2016-04-04	

Fall 2015 Section Improvement Plan

Expected Action	Action Type	Respondent	Action Taken	Date	Resource Request
Allan Hancock College >> Computer Science >> CS111 >> Section A - Fall 2015					
What did the assessment data indicate about the strengths of your course?	No action type	Anonymous	Most students are meeting or exceeding the assessment.	2016-04-04	
What did the assessment data indicate about the weaknesses of your course?	No action type	Anonymous	None at this time	2016-04-04	
What changes have you made/do you plan to make based on the data? What resources would you need, if any, to make these changes?	No action type	Anonymous	No changes at this time.	2016-04-04	

CS112 - Fundamentals of Programming 2

SLOs

CSLOs	» CS112 SLO1 - Use Object-Oriented principles to model programming problems » CS112 SLO2 - Discuss the tradeoffs of basic data structures » CS112 SLO3 - Use recursion to solve programming problems
Mapped PSLOs	**Computer Science Program Outcomes** Computer Science Program Outcomes » CS PSLO - Recall significant computer science concepts, vocabulary and theories. » CS PSLO - Produce elementary programming projects in a variety of languages.
Mapped ILOs	**ILO** ILO 5 - Quantitative Literacy » ILO 5 - Quantitative Literacy: Use mathematical concepts and models to analyze and solve real life issues or problems.

Assessments

Fall 2011

Java Programming

SLO	Scored	Institutional Exceeds Standards	Institutional Meets Standards	Institutional Below Standards	N/A
CS112 SLO1 - Use Object-Oriented principles to model programming problems	22 of 23	63.64%	22.73%	13.64%	1

Fall 2015

Advanced Programming

SLO	Scored	Institutional Exceeds Standards	Institutional Meets Standards	Institutional Below Standards	N/A
CS112 SLO1 - Use Object-Oriented principles to model programming problems	33 of 33	84.85%	12.12%	3.03%	0
CS112 SLO2 - Discuss the tradeoffs of basic data structures	33 of 33	84.85%	12.12%	3.03%	0
CS112 SLO3 - Use recursion to solve programming problems	33 of 33	84.85%	12.12%	3.03%	0

Action Plans

Fall 2011

Course Improvement Plan Computer Science Fall 2011

Expected Action	Action Type	Respondent	Action Taken	Date	Resource Request
Allan Hancock College >> Computer Science >> CS112 - Fall 2011					
What did the assessment data indicate about the strengths of your course?	No action type	Anonymous	That the majority of students can use OO programming effectively.	2012-05-30	
What did the assessment data indicate about the weaknesses of your course?	No action type	Anonymous	None at this time.	2012-05-30	
What changes have you made/do you plan to make based on the data? What resources would you need, if any, to make these changes?	No action type	Anonymous	None at this time.	2012-05-30	

Fall 2015

Fall 2015 Section Improvement Plan

Expected Action	Action Type	Respondent	Action Taken	Date	Resource Request
Allan Hancock College >> Computer Science >> CS112 >> Section A - Fall 2015					
What did the assessment data indicate about the strengths of your course?	No action type	Anonymous	Most students met or exceeded the assessment.	2016-04-04	
What did the assessment data indicate about the weaknesses of your course?	No action type	Anonymous	None at this time.	2016-04-04	
What changes have you made/do you plan to make based on the data? What resources would you need, if any, to make these changes?	No action type	Anonymous	None at this time.	2016-04-04	

CS131 - Computer Organization

SLOs

CSLOs	» CS131 SLO1 - Perform arithmetic operations on binary numbers. » CS131 SLO2 - Create schematic diagrams that implement a truth table. » CS131 SLO3 - Solve problems using assembly programming.
Mapped PSLOs	**Computer Science Program Outcomes** Computer Science Program Outcomes » CS PSLO - Demonstrate the ability to follow instructions. » CS PSLO - Find and correct programming errors.
Mapped ILOs	**ILO** ILO 4 - Information & Technology Literacy » ILO 4B - Technology Literacy: Proficiency in a technology and the ability to choose the appropriate tools. ILO 5 - Quantitative Literacy » ILO 5 - Quantitative Literacy: Use mathematical concepts and models to analyze and solve real life issues or problems.

Assessments

Fall 2013

Assembly Programming

SLO	Scored	Institutional Exceeds Standards	Institutional Meets Standards	Institutional Below Standards	N/A
CS131 SLO3 - Solve problems using assembly programming.	30 of 33	73.33%	6.67%	20%	3

Fall 2015

CS131 Fall 2015

SLO	Scored	Institutional Exceeds Standards	Institutional Meets Standards	Institutional Below Standards	N/A
CS131 SLO1 - Perform arithmetic operations on binary numbers.	27 of 27	51.85%	11.11%	37.04%	0
CS131 SLO2 - Create schematic diagrams that implement a truth table.	27 of 27	85.19%	0%	14.81%	0
CS131 SLO3 - Solve problems using assembly programming.	27 of 27	66.67%	18.52%	14.81%	0

Action Plans

Fall 2013

Course Improvement Plan Computer Science Fall 2013

Expected Action	Action Type	Respondent	Action Taken	Date	Resource Request
Allan Hancock College >> Computer Science >> CS131 - Fall 2013					
What did the assessment data indicate about the strengths of your course?	No action type	Anonymous	That the majority of students met or exceeded the expectation.	2014-02-04	
What did the assessment data indicate about the weaknesses of your course?	No action type	Anonymous	Some students failed to implement the software to expectation. Also, some students dropped the course before the assessment.	2014-02-04	
What changes have you made/do you plan to make based on the data? What resources would you need, if any, to make these changes?	No action type	Anonymous	No changes are planned at this time, but I will continue monitoring.	2014-02-04	

Fall 2013

Section Improvement Plan (SIP) Computer Science Fall 2013

Expected Action	Action Type	Respondent	Action Taken	Date	Resource Request
Allan Hancock College >> Computer Science >> CS131 >> Section A - Fall 2013					
What did the assessment data indicate about the strengths of your course?	No action type	Anonymous	That the majority of students met or exceeded the expectation.	2014-02-03	
What did the assessment data indicate about the weaknesses of your course?	No action type	Anonymous	Some students failed to implement the software to expectation. Also, some students dropped the course before the assessment.	2014-02-03	
What changes have you made/do you plan to make based on the data? What resources would you need, if any, to make these changes?	No action type	Anonymous	No changes are planned at this time, but I will continue monitoring.	2014-02-03	

Fall 2015

Allan Hancock College >> Computer Science >> CS131 >> Section B - Fall 2015					
What did the assessment data indicate about the strengths of your course?	No action type	Anonymous	Most students successfully solved problems using assembly language programming.	2015-12-16	
What did the assessment data indicate about the weaknesses of your course?	No action type	Anonymous	A larger than expected number of students struggled with the arithmetic operations on binary numbers.	2015-12-16	
What changes have you made/do you plan to make based on the data? What resources would you need, if any, to make these changes?	No action type	Anonymous	Spend more time on binary arithmetic operations. No additional resources are required.	2015-12-16	
Allan Hancock College >> Computer Science >> CS131 >> Section B - Fall 2015					
What did the assessment data indicate about the strengths of your course?	No action type	Anonymous	Most students successfully solved problems using assembly language programming.	2015-12-16	
What did the assessment data indicate about the weaknesses of your course?	No action type	Anonymous	A larger than expected number of students struggled with the arithmetic operations on binary numbers.	2015-12-16	

What changes have you made/do you plan to make based on the data? What resources would you need, if any, to make these changes?	No action type	Anonymous	Spend more time on binary arithmetic operations. No additional resources are required.	2015-12-16	

CS161 - Discrete Structures

SLOs

CSLOs	» CS161 SLO1 - Use graph theory to model basic problems in computer science » CS161 SLO2 - Evaluate expressions that are common in fundamental computer science theory » CS161 SLO3 - Use proof by contradiction and mathematical induction to prove a variety of simple theorems
Mapped PSLOs	**Computer Science Program Outcomes** Computer Science Program Outcomes » CS PSLO - Recall significant computer science concepts, vocabulary and theories.
Mapped ILOs	**ILO** ILO 5 - Quantitative Literacy » ILO 5 - Quantitative Literacy: Use mathematical concepts and models to analyze and solve real life issues or problems.

Action Plans

Summer 2011

Course Improvement Plan Computer Science Summer 2011

Expected Action	Action Type	Respondent	Action Taken	Date	Resource Request
Allan Hancock College >> Computer Science >> CS161 - Summer 2011					
What did the assessment data indicate about the strengths of your course?	No action type	Anonymous	That the majority of students can use theoretical computer science techniques to solve problems.	2012-10-22	
What did the assessment data indicate about the weaknesses of your course?	No action type	Anonymous	None at this time.	2012-10-22	
What changes have you made/do you plan to make based on the data? What resources would you need, if any, to make these changes?	No action type	Anonymous	None at this time.	2012-10-22	

Summer 2012

Course Improvement Plan Computer Science Summer 2012

Expected Action	Action Type	Respondent	Action Taken	Date	Resource Request
Allan Hancock College >> Computer Science >> CS161 - Summer 2012					
What did the assessment data indicate about the strengths of your course?	No action type	Anonymous	That the majority of students met or exceeded the standard for graph theory and for the evaluation of expressions.	2013-01-22	
What did the assessment data indicate about the weaknesses of your course?	No action type	Anonymous	4 students did not meet the standard.	2013-01-22	
What changes have you made/do you plan to make based on the data? What resources would you need, if any, to make these changes?	No action type	Anonymous	The amount of time spent of graph theory appears to be right. No changes are planned at this time.	2013-01-22	

Summer 2012

Section Improvement Plan (SIP) Computer Science Summer 2012

Expected Action	Action Type	Respondent	Action Taken	Date	Resource Request
Allan Hancock College >> Computer Science >> CS161 >> Section A - Summer 2012					
What did the assessment data indicate about the strengths of your course?	No action type	Anonymous	That the majority of students met or exceeded the standard for graph theory and for the evaluation of expressions.	2012-11-24	
What did the assessment data indicate about the weaknesses of your course?	No action type	Anonymous	4 students did not meet the standard.	2012-11-24	
What changes have you made/do you plan to make based on the data? What resources would you need, if any, to make these changes?	No action type	Anonymous	The amount of time spent of graph theory appears to be right. No changes are planned at this time.	2012-11-24	

CS181 - Game Programming

SLOs

CSLOs	» CS181 SLO1 - Describe common components of a game loop » CS181 SLO2 - Create simple 2D video games that use graphics, sound, and user input » CS181 SLO3 - Develop classes to model game elements

Mapped PSLOs	**Computer Science Program Outcomes** Computer Science Program Outcomes » CS PSLO - Recall significant computer science concepts, vocabulary and theories. » CS PSLO - Produce elementary programming projects in a variety of languages. » CS PSLO - Demonstrate the ability to follow instructions.
Mapped ILOs	**ILO** ILO 5 - Quantitative Literacy » ILO 5 - Quantitative Literacy: Use mathematical concepts and models to analyze and solve real life issues or problems.

Assessments

Spring 2012

Group Project

SLO	Scored	Institutional Exceeds Standards	Institutional Meets Standards	Institutional Below Standards	N/A
CS181 SLO2 - Create simple 2D video games that use graphics, sound, and user input	28 of 28	60.71%	32.14%	7.14%	0
CS181 SLO3 - Develop classes to model game elements	28 of 28	60.71%	32.14%	7.14%	0

Summer 2015

Programming Animation

SLO	Scored	Institutional Exceeds Standards	Institutional Meets Standards	Institutional Below Standards	N/A
CS181 SLO3 - Develop classes to model game elements	30 of 30	93.33%	0%	6.67%	0

Group Project

SLO	Scored	Institutional Exceeds Standards	Institutional Meets Standards	Institutional Below Standards	N/A
CS181 SLO1 - Describe common components of a game loop	30 of 30	96.67%	0%	3.33%	0
CS181 SLO2 - Create simple 2D video games that use graphics, sound, and user input	30 of 30	96.67%	0%	3.33%	0

Summer 2016

Group Project

SLO	Scored	Institutional Exceeds Standards	Institutional Meets Standards	Institutional Below Standards	N/A
CS181 SLO1 - Describe common components of a game loop	34 of 34	88.24%	5.86%	5.88%	0
CS181 SLO2 - Create simple 2D video games that use graphics, sound, and user input	34 of 34	73.53%	14.71%	11.76%	0

Action Plans

Spring 2011

Course Improvement Plan Computer Science Spring 2011

Expected Action	Action Type	Respondent	Action Taken	Date	Resource Request
Allan Hancock College >> Computer Science >> CS181 - Spring 2011					
What did the assessment data indicate about the strengths of your course?	No action type	Anonymous	That the majority of students can create simple 2D video games.	2013-01-24	
What did the assessment data indicate about the weaknesses of your course?	No action type	Anonymous	None at this time	2013-01-24	
What changes have you made/do you plan to make based on the data? What resources would you need, if any, to make these changes?	No action type	Anonymous	None at this time	2013-01-24	

Spring 2012

Course Improvement Plan Computer Science Spring 2012

Expected Action	Action Type	Respondent	Action Taken	Date	Resource Request
Allan Hancock College >> Computer Science >> CS181 - Spring 2012					
What did the assessment data indicate about the strengths of your course?	No action type	Anonymous	That the majority of students can create simple 2D video games.	2012-06-06	

What did the assessment data indicate about the weaknesses of your course?	No action type	Anonymous	None at this time	2012-06-06	
What changes have you made/do you plan to make based on the data? What resources would you need, if any, to make these changes?	No action type	Anonymous	None at this time	2012-06-06	

SLO Presentation

Allan Hancock College
Date: 09/08/2016

Computer Science

Computer Science Program Outcomes

Computer Science Program Outcomes

- CS PSLO - Recall significant computer science concepts, vocabulary and theories.
- CS PSLO - Produce elementary programming projects in a variety of languages.
- CS PSLO - Demonstrate the ability to follow instructions.
- CS PSLO - Find and correct programming errors.

CSLO

CS102 - Intro to Computing with HTML

- CS102 SLO1 - Use basic terms applicable to computer systems appropriately.
- CS102 SLO2 - Develop simple static HTML web pages
- CS102 SLO3 - Describe some of the major historical events related to computing

CS111 - Fundamentals of Programming 1

- CS111 SLO1 - Demonstrate the ability to solve simple problems and express solutions as algorithms.
- CS111 SLO2 - Use fundamental programming constructs in a high level language.
- CS111 SLO3 - Find and correct simple bugs.

CS112 - Fundamentals of Programming 2

- CS112 SLO1 - Use Object-Oriented principles to model programming problems
- CS112 SLO2 - Discuss the tradeoffs of basic data structures
- CS112 SLO3 - Use recursion to solve programming problems

CS131 - Computer Organization

- CS131 SLO1 - Perform arithmetic operations on binary numbers.
- CS131 SLO2 - Create schematic diagrams that implement a truth table.
- CS131 SLO3 - Solve problems using assembly programming.

CS161 - Discrete Structures

- CS161 SLO1 - Use graph theory to model basic problems in computer science
- CS161 SLO2 - Evaluate expressions that are common in fundamental computer science theory
- CS161 SLO3 - Use proof by contradiction and mathematical induction to prove a variety of simple theorems

CS181 - Game Programming

- CS181 SLO1 - Describe common components of a game loop
- CS181 SLO2 - Create simple 2D video games that use graphics, sound, and user input
- CS181 SLO3 - Develop classes to model game elements

Part 5: Articulation

CS 102 Introduction to Computing with HTML (3) **08/11/16**

CATALOG DESCRIPTION

A general education course dealing with how computers work, how they are used and their effects on society. Includes an introduction to web page design using HTML.

AHC Special Notes	Articulation Institution	Prefix	Title
	Cal Poly Pomona	----------	*Articulation Denied* [CIS 120: Fundamentals of Web Site Development]
	Cal Poly San Luis Obispo	----------	No Equivalent Course
	CSU Bakersfield	CMPS 120	Computer Skills and Concepts I
	CSU Channel Islands	----------	*Articulation Denied* [COMP 102 Web Development]
	CSU Chico	----------	No Equivalent Course
	CSU Dominguez Hills	----------	No Equivalent Course
	CSU East Bay	----------	*Articulation Denied* [CS 1020 Introduction to Computers]
	CSU Fresno	----------	No Equivalent Course
	CSU Fullerton	----------	No Equivalent Course
	CSU Long Beach	CECS 110	Web Design I
	CSU Los Angeles	----------	*Articulation Denied* [CS 190 BASIC Programming]
	CSU Monterey Bay	----------	No Equivalent Course
	CSU Northridge	----------	*Articulation Denied* [COMP 108 Orientation to Computer Science]
	CSU Sacramento	----------	No Equivalent Course
	CSU San Bernardino	----------	*Articulation Denied* [CSCI 136-HTML Programming-9/20/06]
	CSU San Marcos	----------	No Equivalent Course
	CSU Stanislaus	CS 1000	Introduction to Computers
	Humboldt State	----------	No Equivalent Course
	San Diego State	----------	*Articulation Denied* [CS 100; requires intermediate algebra as a prerequisite]
	San Francisco State	CSC 201	Intro to Computer Programming - Non-majors
	San Jose State	CS 40	Introduction to Computers
	Sonoma State	----------	*Articulation Denied* [CS 101, Introduction to Computers and Computing]
	UC Transferable	Yes	
	UC Berkeley	----------	No Equivalent Course

	UC Davis	- - - - - - - - - - - - - - - - - - -	No Equivalent Course
	UC Irvine	- - - - - - - - - - - - - - - - - - -	No Equivalent Course
	UC Los Angeles	- - - - - - - - - - - - - - - - - - -	No Equivalent Course
	UC Merced	- - - - - - - - - - - - - - - - - - -	No Equivalent Course
	UC Riverside	- - - - - - - - - - - - - - - - - - -	No Equivalent Course
	UC San Diego	- - - - - - - - - - - - - - - - - - -	No Equivalent Course
	UC Santa Barbara	- - - - - - - - - - - - - - - - - - -	No Equivalent Course
	UC Santa Cruz	- - - - - - - - - - - - - - - - - - -	No Equivalent Course
	C-ID	N/A	
	CSU GE	N/A	
	IGETC	N/A	

CS 111 Fundamentals of Programming I (4) **02/06/17**

CATALOG DESCRIPTION

Introduces the fundamentals of computer programming and software design. Topics include variables, data types, assignment, expressions, basic I/O, control flow, functions and parameters, scope, and data structures. Emphasizes top-down design, step-wise refinement, and an engineering approach, using a high-level language; C++.

AHC Special Notes	Articulation Institution	Prefix	Title
+ CS 112 - - - - - - - - - - - - - - - - - -	Cal Poly Pomona	CS 140 and CS 141 and CS 142 - ECE 114 & ECE 114L or ETC 250 & ETC 250L or ETT 215 & ETT 215L	Intro. to Computer Science and Intro. to Programming and Problem Solving and Data Structures and Algorithms I C for Engineers & C for Engineers Lab Advanced Computer Applications and E-Construction (3) & Lab (1) C Programming for Technology (3) & C Programming for Technology Lab (1)
+ CS 112	Cal Poly San Luis Obispo	CPE/CSC 101 Or CSC 234 Or CPE/CSC 101 & 102 & 103	Fundamentals of Computer Science I Or C and UNIX Or Fundamentals of Computer Science I & II & III
	CSU Bakersfield	CMPS 221	Programming Fundamentals
	CSU Channel Islands	COMP 150	Object-Oriented Programming (4)
	CSU Chico	CSCI 111	Programming and Algorithms I (4)
+ CS 112	CSU Dominguez Hills	CSC 121 And CSC 123	Introduction to Computer Science and Programming I And Introduction to Computer Science and Programming II
+ CS 112	CSU East Bay	CS 1160 **Pending**	Introduction to Computer Science (4) **Requested 08/30/2016** **CS 1160, Introduction to Computer Science I (4)** **and** **CS 2360, Introduction to Computer Science II (4)**

			And **CS 2370, Introduction to Computer Science III (4)**
+ CS 112	CSU Fresno	CSCI 40 And CSCI 41	Intro to Programming and Problem Solving And Intro to Data Structures
	CSU Fullerton	CPSC 121	Programming Concepts I (3)
	CSU Long Beach	CECS 174	Programming and Problem Solving I
+ CS 112	CSU Los Angeles	**Pending**	**Requested 08/30/2016** **CS 201, Intro to Programming (5)** **And** **CS 202, Intro to Object Oriented Programming (5)** **And** **CS 203, Programming with Data Structures (5)**
	CSU Monterey Bay	CST 231	Problem Solving and Programming (4)
	CSU Northridge	COMP 110 & COMP 110L	Intro to Algorithms and Programming (3) Intro to Algorithms and Programming Lab (1)
	CSU Sacramento	**Pending**	**Requested 08/30/2016** **[CSC 15, Program Concept + Method I (3)]**
	CSU San Bernardino	CSCI 201	Computer Science I (acceptable substitute)
	CSU San Marcos	CS 111	Computer Science I
	CSU Stanislaus	CS 1500	Computer Programming I
	Humboldt State	CS 111	Computer Science Foundations (4)
	San Diego State	- - - - - - - - - - - - - - - - - - -	*SDSU doesn't articulate courses*
	San Francisco State	Denied	CSC 210, Introduction to Computer Programming (3) Denied because AHC CS 111 in C++ and SFSU CSC 210 in Java
+ CS 112	San Jose State	CS 46A (SE 46A) And CS 46B (SE 46B) CMPE 30	Introduction to Programming And Introduction to Data Structures Programming Concepts & Methodology (3)
	Sonoma State	CS 115	Programming 1
	UC Transferable	Yes	
	UC Berkeley	**Pending**	**August 30, 2016** **[COMPSCI 61A, The Structure and Interpretation of Computer Programs (4)]**
Non-engineering majors only	UC Davis	*ENG CS 30*	Program/Problem Solving: C
+ CS 112	UC Irvine	**Pending**	**Requested August 30, 2016** **CSE/ICS/I&C SCI 31 , Introduction to Computer Science I**

			And **CSE/ICS/I&C SCI 32, Introduction to Computer Science II** **AND** **CSE/ICS/I&C SCI 33, Introduction to Computer Science III**
	UC Los Angeles	COM SCI 31	Introduction to Computer Science I (4)
	UC Merced	CSE 20 & CSE 21	Intro to Computing I Introduction to Programming II
	UC Riverside	CS 10	Introduction to Computer Science for Science, Mathematics, and Engineering I
	UC San Diego	CSE 5A	Introduction to Programming 1 (4)
+ CS 112	UC Santa Barbara	CMPSC 16	Problem Solving with Computers I
+ CS 112	UC Santa Cruz	**Pending**	**August 30,2016** **CMPS 12A and 12L, Intro to Programming (5) & Lab (2)** **And** **CMPS 12B & 12M, Intro to Data Structures (5) & Lab (2)**
	C-ID	COMP 122	Programming Concepts and Methodology I
	CSU GE	N/A	
	IGETC	N/A	

CS 131 Computer Organization (4) **02/06/17**

Catalog Description

Introduction to computer architecture and assembly language programming. Topics include data representation and conversion, assembly language programming, digital design, and basic processor architecture.

AHC Special Notes	Articulation Institution	Prefix/No	Title
	Cal Poly Pomona	CS 264	Computer Organization & Assembly Programming (4)
	Cal Poly San Luis Obispo	CC/CPE 225	Introduction to Computer Organization (4)
	CSU Bakersfield	COMPS 224	Assembly Language Programming (5)
	CSU Channel Islands	COMP 162	COMP 162, Computer Architecture & Assembly Language (3)
	CSU Chico	CSCI 221	Assembly Language Programming (3)
	CSU Dominguez Hills	CSC 221	Assembly Language & Introduction to Computer Organization (3)
	CSU East Bay	CS 2430	Computer Organization & Assembly Language Programming (4)
	CSU Fresno	- - - - - - - - - - - - - - - - - -	Upper-division course equivalent {CSCI 113, Introduction to Computer Org. (4) or ECE 115, Computer Organization (3)}
	CSU Fullerton	CPSC 240	Computer Organization & Assembly Language (3)
	CSU Long Beach	Denied	CECS 285, Computer Organization & Assembly Language Programming (3) – CSULB course terminated F16
	CSU Los Angeles	CS 245	Introduction to Computer Organization Operation Systems and Networks (3)
	CSU Monterey Bay	CST 237	Computer Organization (3)
	CSU Northridge	COMP 122 (L)	Computer Architecture & Assembly Language & Lab (3) & (1)
	CSU Sacramento	**Pending**	**Requested 8/31/12** **[CSC 35, Introduction to Computer Architecture (3)]** ***Resent August 2016***
	CSU San Bernardino		No equivalent lower-division course
	CSU San Marcos	**Pending**	**Requested 08/30/2016** **CS 231, Assembly Language and Digital Circuits (4)**
	CSU Stanislaus		**Requested 8/11/16** **[CS 35, Introduction to Computer Architecture (3)]**

	Humboldt State	**Pending**	**Requested 08/30/2016** **CS 243, Architecture (4)**
	San Diego State	- - - - - - - - - - - - - - - - - -	*SDSU doesn't articulate courses.*
	San Francisco State	CSC 256	Machine Structures (3)
	San Jose State	CS 047	Introduction to Computer Systems (3)
	Sonoma State	**Pending**	**Requested 8/15/12** **[CS 252, Introduction to Computer Organization (3)]** ***Resent August 2016***
	UC List	Yes	
	UC Berkeley	**Pending**	**August 2016** **[COMPSCI 61C, Machine Structures (4)]**
	UC Davis	ENG CS 50	Machine Dependent Prog (4)
	UC Irvine	**Pending**	**August 30, 2016** **I&C SCI 51, Introductory Computer Organization (6)**
	UC Los Angeles	**COM SCI 33**	**Introduction to Computer Organization (4)**
	UC Merced	- - - - - - - - - - - - - - - - - -	
	UC Riverside	CS 61	Machine Organization and Assembly Language Programming (4)
	UC San Diego	**Pending**	**August 30, 2016** **[CSE 30, Computer Organization and Systems Programming (4)]**
	UC Santa Barbara	CMPSC 64	Computer Organization and Logic Design (3)
	UC Santa Cruz	**Pending**	**August 2016** **[CMPE 12, Computer Systems and Assembly Language (5) and CMPE 12L, Computer Systems and Assembly Language Laboratory (2)]**
	C-ID	COMP 142	Computer Architecture and Organization
	CSU GE		
	IGETC		

CS 161 Discrete Structures (3) **02/06/17**

CATALOG DESCRIPTION

An introduction to the discrete structures of computing, including propositional and predicate logic, methods of proof, functions, computer arithmetic, algorithm complexity, recursion, graphs, trees, sets and relations, networks, induction, and combinatorics.

AHC Special Notes	Articulation Institution	Prefix	Title
	Cal Poly Pomona	CS 130	Discrete Structures
	Cal Poly San Luis Obispo	CSC 141	Discrete Structures I
	CSU Bakersfield	CMPS 295	Discrete Structures
	CSU Channel Islands	MATH 301	Discrete Mathematics for IT
	CSU Chico	CSCI 217	Foundations of Computing (3)
	CSU Dominguez Hills	MAT 281	Discrete Mathematics
	CSU Fresno	- - - - - - - - - - - - - - - - - -	Upper Division Equivalent [Math 114, Discrete Structures]
	CSU Fullerton	- - - - - - - - - - - - - - - - - -	*Articulation Denied* [MATH 270A Mathematical Structures-9/22/06]
	CSU East Bay	MATH 2150	Discrete Structures
	CSU Long Beach	CECS 228	Discrete Structures with Computer Science Applications I
	CSU Los Angeles	MATH 248	Discrete Math
	CSU Monterey Bay	MATH 170	Discrete Mathematics (4)
	CSU Northridge	COMP 256 & COMP 256L	Discrete Structures for Computer Science (3) & Discrete Structures for Computer Science Lab (1)
	CSU Sacramento	CSC 28	Discrete Structures for Computer Science
	CSU San Bernardino	MATH 272	Discrete Mathematics
	CSU San Marcos	MATH 270	Basic Discrete Mathematics
	CSU Stanislaus	MATH 2300	Discrete Structures
	Humboldt State	MATH 253	Discrete Mathematics
	San Diego State	MATH 245	Discrete Mathematics
	San Francisco State	CSC 230	Discrete Mathematics (3)
	San Jose State	MATH 42	Discrete Math
	Sonoma State	CS 242 Or MATH 142	Discrete Structures for CS Or Discrete Structures
	UC Transferable	Yes	
	UC Berkeley	MATH 55	Discrete Mathematics
	UC Davis	*ENG CS 20*	*Computer Science/Discrete Math* (Non-Engineering majors only)
	UC Irvine	**Pending**	**Requested August 30, 2016** **I&C SCI 6D, Discrete Mathematics for Computer Science**

	UC Los Angeles	MATH 161	Introduction to Discrete Structures
	UC Merced	- - - - - - - - - - - - - - - - - - - -	Upper Division Equivalent [ENGR 160, Discrete Math and Computer Modeling]
	UC Riverside	CS 11/MATH 11	Introduction to Discrete Structures
	UC San Diego	CSE 20 Or MATH 15A	Introduction to Discrete Math Or Discrete Mathematics
	UC Santa Barbara	CMPSC 40	Foundation of Computer Science
	UC Santa Cruz	Denied	CMPE 16, Applied Discrete Mathematics *Course Deleted from Catalog (7/5/16)*
	C-ID	COMP 152	Discrete Structures
	CSU GE		
	IGETC		

COM SC 181 Game Programming I **02/06/17**

Catalog Description

Elements of games, including theme, game play, and presentation. Basic concepts of programming, and how programs control the display of graphics and animation in computer games. The use of sound and artificial intelligence in computer games. The use of sound and artificial intelligence in computer games. Demonstrations and experiments with game programming through the use of examples.

AHC Special Notes	Articulation Institution	Prefix/No	Title
	Cal Poly Pomona		
	Cal Poly San Luis Obispo	**Pending**	**Requested 7/2/14 [CSC 171, Intro to Interactive Entertainment (4)]**
	CSU Bakersfield		
	CSU Channel Islands		
	CSU Chico		
	CSU Dominguez Hills		
	CSU East Bay		
	CSU Fresno		
	CSU Fullerton		
	CSU Long Beach		
	CSU Los Angeles		
	CSU Monterey Bay		
	CSU Northridge		
	CSU Sacramento		
	CSU San Bernardino	CSCI 140 & CSCI 141	Introduction to Game Design (2) Introduction to Game Programming (2)
	CSU San Marcos		
	CSU Stanislaus		
	Humboldt State		
	San Diego State		
	San Francisco State		
	San Jose State		
	Sonoma State		
	UC List	Yes	
	UC Berkeley		
	UC Davis		
	UC Irvine		
	UC Los Angeles		
	UC Merced		
	UC Riverside		
	UC San Diego		
	UC Santa Barbara		

	UC Santa Cruz		
	C-ID	N/A	
	CSU GE	N/A	
	IGETC	N/A	

PLAN OF ACTION - PRE-VALIDATION
Six Year

DEPARTMENT: Mathematical Science
PROGRAM: Computer Science

List below as specifically as possible the actions which the department plans to take as a result of this program review. Be sure to address any problem areas which you have discovered in your analysis of the program. Number each element of your plans separately and for each, please include a target date. Additionally, indicate by the number each institutional goal and objective which is addressed by each action plan. (See Institutional Goals and Objectives)

RECOMMENDATIONS TO IMPROVE **STUDENT LEARNING OUTCOMES** AND ACHIEVMENT	**Theme/Objective/ Strategy Number AHC from Strategic Plan**	**TARGET DATE**
• Modify the students learning outcomes of CS161	IE1	Spring 17

RECOMMENDATIONS TO ACCOMMODATE CHANGES IN **STUDENT CHARACTERISTICS**	**Theme/Objective/ Strategy Number AHC from Strategic Plan**	**TARGET DATE**
Enrollment Changes There has been 10% enrollment growth since the last program review. • Hiring another part-time instructor is recommended. • Offering a section of CS112 online is recommended.	IR1, IE1	Spring 18
Demographic Changes Young Hispanic and white students continue to constitute the majority of CS enrollment. No program changes are planned at this time.		

RECOMMENDATIONS TO IMPROVE THE **EDUCATIONAL ENVIRONMENT**	**Theme/Objective/ Strategy Number AHC from Strategic Plan**	**TARGET DATE**
Curricular Changes • Update CS181 with new book and curriculum. • Refactor CS111 and CS112 to use the same textbook.	IE1	 Fall 17 Fall 18
Co-Curricular Changes No co-curricular changes are planned at this time.		
Neighboring College and University Plans • Continue monitoring articulation feedback from universities.	IE1	Ongoing
Related Community Plans No program changes are planned at this time.		

RECOMMENDATIONS THAT REQUIRE ADDITIONAL RESOURCES	Theme/Objective/ Strategy Number AHC from Strategic Plan	TARGET DATE
Facilities None at this time.		
Equipment A virtual server. Update all systems in M201 to Windows10 Determine if CS181 needs new resources/tools	SLS6	 Fall 17 Fall 17 Spr 17
Staffing Hiring another part time instructor.	IR1	Spring 18

PROGRAM REVIEW -- VALIDATION TEAM MEMBERS

TO: Academic Dean Date: 10/20/2016

From: Michael Wagner

We recommend the following persons for consideration for the validation team:

DEPARTMENT Mathematical Sciences PROGRAM Computer Science

Board Policy requires that the validation team be comprised of the dean of the area, one faculty member from a related discipline/program, and two faculty members from unrelated disciplines.

Derek Mitchem	Mathematical Sciences
(Name)	(Related Discipline/Program)
Bob Bryant	Business
(Name)	(Unrelated Discipline/Program)
Dave Degroot	Articulation
(Name)	(Unrelated Discipline/Program)

At the option of the self-study team, the validation team may also include one or more of the following: a. someone from a four-year institution in the same discipline; someone from another community college in the same discipline; a high school instructor in the same discipline; a member of an advisory committee for the program. Please complete the following as relevant to your program review.

(Name) (Title)

Affiliation: Telephone Contact Number:

Address
(Mailing) City/State/Zip email address

(Name) (Title)

Affiliation: Telephone Contact Number:

Address
(Mailing) City/State/Zip email address

(Name) (Title)

Affiliation: Telephone Contact Number:

Address
(Mailing) City/State/Zip email address

APPROVED: Academic Dean 10/21/16 Date

Computer Science Program Review
Validation Team Report

The Program Review Validation Team for Computer Science met on February 22, 2017. It included:

- Professor of Business Robert Bryant
- Articulation Office Dave DeGroot
- Dean Richard Mahon
- Professor of Mathematics Derek Mitchem
- Lead (and only fulltime) Computer Science faculty member Professor Michael Wagner.

The meeting opened with a discussion of where the discipline has come since the previous comprehensive program review. Not that long ago, the discipline lacked a fulltime faculty member to take responsibility not only for teaching, but for curriculum planning and development and attention to the requirements of potential transfer institutions. All agreed that Professor Wagner has done a stellar job moving the discipline in a positive direction, and this is especially evident in the enrollment data that indicate that while enrollment has been slowly declining collegewide, the opposite has been true for enrollments in Computer Science. The addition of Professor of Mathematics Chris Pavone, who is teaching CS 161 Discrete Structures, has been welcome.

In spite of the growth of the program, it continues to be confused by campus decision makers with courses and programs that focus on the application of existing computer programs, like the Microsoft Office suite.

The fact that the program now offers all of the courses required by the Associate Degree for Transfer in Computer Science is also a significant accomplishment. All potential courses are now also C-ID articulated. Course enrollments are such that the discipline can offer all the required courses in a predictable rotation and students will actually be able to complete the program. (One residual issue remains concerning the pending reduction of units in math and physics courses.)

One of the topics of discussion was the barrier posed to students by the high cost of textbooks identified in the Program Review. Members of the team discussed a range of textbook and articulation challenges:

- the apparent CSU and UC expectations that a textbook will be required (even when higher quality materials are available online at no cost to students)
- the expectation of UC Irvine that students will take a class which is available at very few community colleges
- Currently the course outlines for CS 111 and CS112 are written to support the use of differing programming languages: revising the COR to rely on the same language will allow students who take both courses (and both are required for the ADT) to use the same text

- Cal Poly SLO rejected articulation for CS161as part of a statewide purge of courses with insufficient proofs; Professor Pavone has begun a dialog with Cal Poly to reassure the department that the Hancock courses is appropriately taught.

The program review notes that enrollments in the program nicely match the ethnicity profile of the college as a whole. It was noted that is not the case as regards women, given that current enrollment skews to about 8-% male, and it was suggested that Michael consult with Christine Reed, who has just completed a sabbatical project focused on attracting women students to engineering programs.

The document notes both the completion of previous resource-dependent goals (the updating of computers in M201, a $40,000 investment) and a range of new resource needs which are hampering the program as currently taught, including:

- Upgrade computers in M201 from Windows 7 to Windows 10
- The de-installation of outdates software
- The addition of one part-time faculty member
- Funding for amazon web hosting

Student Learning Outcomes have been established and mapped to program and institutional outcomes, and data indicate that students are achieving expected course and program outcomes at robust levels.

VALIDATION TEAM SIGNATURE PAGE

Michael Wagner Michael Wagner

Mitchell Mitchell

ROBERT BRYANT

David DeGroot David DeGroot

PLAN OF ACTION – POST-VALIDATION
(Sixth-Year Evaluation)

DEPARTMENT Mathematical Sciences PROGRAM Computer Science

In preparing this document, refer to the Plan of Action developed by the discipline/program during the self-study, and the recommendations of the Validation Team. Note that while the team should strongly consider the recommendations of the validation team, these are recommendations only. However, the team should provide a rationale when choosing to disregard or modify a validation team recommendation.

Identify the actions the discipline/program plans to take during the next six years. Be as specific as possible and indicate target dates. Additionally, indicate by the number each institutional goal and objective which is addressed by each action plan. (See Institutional Goals and Objectives) The completed final plan should be reviewed by the department as a whole.

Please be sure the signature page is attached.

RECOMMENDATIONS TO IMPROVE DESIRED **STUDENT OUTCOMES** AND IMPROVE STUDENT PERFORMANCE	**Theme/Objective/ Strategy Number AHC from Strategic Plan**	**TARGET DATE**
Modify the students learning outcomes of CS161	IE1	Spring 17

RECOMMENDATIONS TO ACCOMMODATE CHANGES IN **STUDENT CHARACTERISTICS**	**Theme/Objective/ Strategy Number AHC from Strategic Plan**	**TARGET DATE**
Enrollment Changes There has been 10% enrollment growth since the last program review. • Hiring another part-time instructor is recommended. • Offering a section of CS112 online is recommended.	IR1, IE1	Spring 18
Demographic Changes Young Hispanic and white students continue to constitute the majority of CS enrollment. Participation in outreach events to encourage enrollment across all demographics will be continued.	SLS2	Ongoing

RECOMMENDATIONS TO IMPROVE THE **EDUCATIONAL ENVIRONMENT**	**Theme/Objective/ Strategy Number AHC from Strategic Plan**	**TARGET DATE**
Curricular Changes • Update CS181 with new book and curriculum. • Refactor CS111 and CS112 to use the same textbook.	IE1	Fall 17 Fall 18

Co-Curricular Changes No co-curricular changes are planned at this time.		
Neighboring College and University Plans Continue monitoring articulation feedback from universities.	IE1	Ongoing
Related Community Plans No program changes are planned at this time.		

RECOMMENDATIONS THAT REQUIRE ADDITIONAL RESOURCES	**Theme/Objective/ Strategy Number AHC from Strategic Plan**	**TARGET DATE**
Facilities None at this time.		
Equipment A virtual server. Update all systems in M201 to Windows10 Determine if CS181 needs new resources/tools	SLS6	 Fall 17 Fall 17 Spr 17
Staffing Hiring another part time instructor.	IR1	Spr 18

VALIDATION TEAM RECOMMENDTIONS Disregarded or modified (if appropriate)	**REASON**	**ACTION/CHANGEEGE**
Recommendation		
Recommendation		
Recommendation		

PLAN OF ACTION – Post-Validation

Review and Approval

Plan Prepared By

Michael Wagner _____ Date: 5/3/2017

_____ Date: _____

_____ Date: _____

_____ Date: _____

_____ Date: _____

Reviewed:

Department Chair*

_____ Date: 5/4/17

*Signature of Department Chair indicates approval by department of Plan of Action.

Reviewed:

Dean of Academic Affairs

_____ Date: 5/9/17

Vice President, Academic Affairs

_____ Date: 8/19/17

2016-2017

Program Review Data

Computer Science

Table of Contents

Summer 2010, Fall 2010, Spring 2011 and 6 more Enrollment, FTES, Retention & Success AHC Data

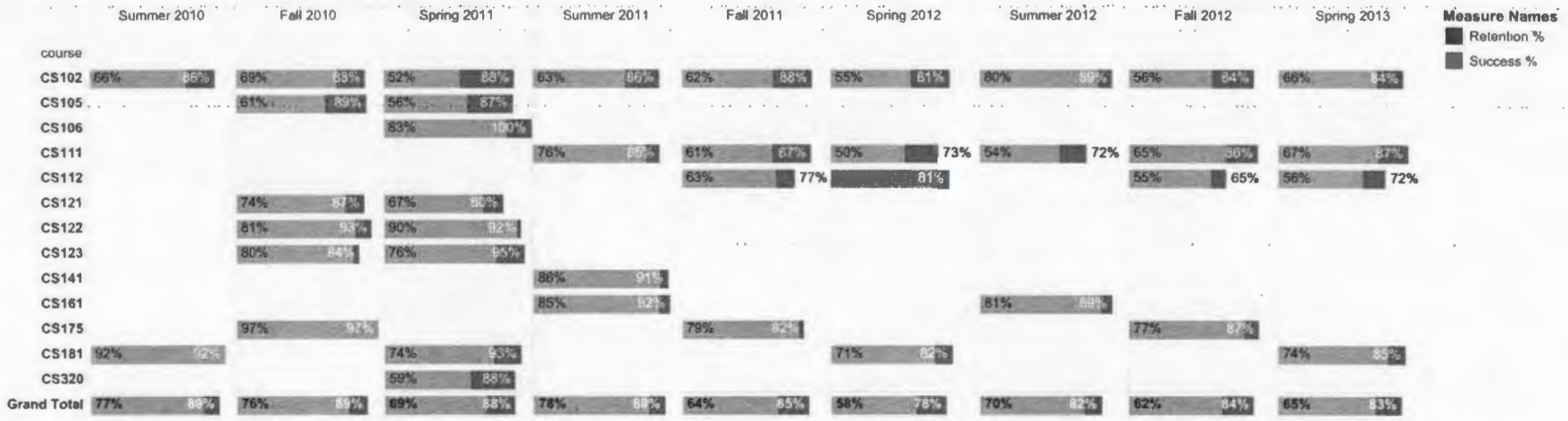
	Summer 2010	Fall 2010	Spring 2011	Summer 2011	Fall 2011	Spring 2012	Summer 2012	Fall 2012	Spring 2013
Sections	348	1,178	1,240	314	1,023	1,146	293	1,004	1,087
Headcount	6,230	12,131	12,689	5,798	10,957	11,736	5,551	10,883	11,361
Enrollment	10,179	32,211	33,109	9,242	29,219	30,988	8,784	28,559	29,609
Retention %	84.71%	85.14%	84.72%	85.50%	86.69%	84.65%	89.79%	86.62%	86.17%
Success %	72.20%	67.32%	68.82%	74.32%	68.63%	69.09%	77.33%	69.63%	70.38%
FTES	1,249	4,239	4,162	1,072	3,905	3,879	1,001	3,775	3,813

Summer 2010, Fall 2010, Spring 2011 and 6 more CS Outcomes

	Summer 2010	Fall 2010	Spring 2011	Summer 2011	Fall 2011	Spring 2012	Summer 2012	Fall 2012	Spring 2013
Sections	2.0	8.0	11.0	4.0	6.0	6.0	3.0	6.0	6.0
Headcount	60.0	201.0	228.0	121.0	205.0	218.0	92.0	201.0	210.0
Enrollment	61.0	241.0	297.0	143.0	220.0	231.0	101.0	213.0	226.0
retained	54.0	215.0	262.0	127.0	188.0	181.0	83.0	178.0	188.0
Retention %	88.52%	89.21%	88.22%	88.81%	85.45%	78.35%	82.18%	83.57%	83.19%
success	47.0	184.0	205.0	111.0	141.0	134.0	71.0	133.0	148.0
Success %	77.05%	76.35%	69.02%	77.62%	64.09%	58.01%	70.30%	62.44%	65.49%
FTES	6.1	29.1	35.7	15.2	26.3	27.8	11.1	25.3	27.4

Summer 2010, Fall 2010, Spring 2011 and 6 more Retention & Success

Click on course name to get retention/success by course demographics



Summer 2013, Fall 2013, Spring 2014 and 6 more Enrollment, FTES, Retention & Success AHC Data

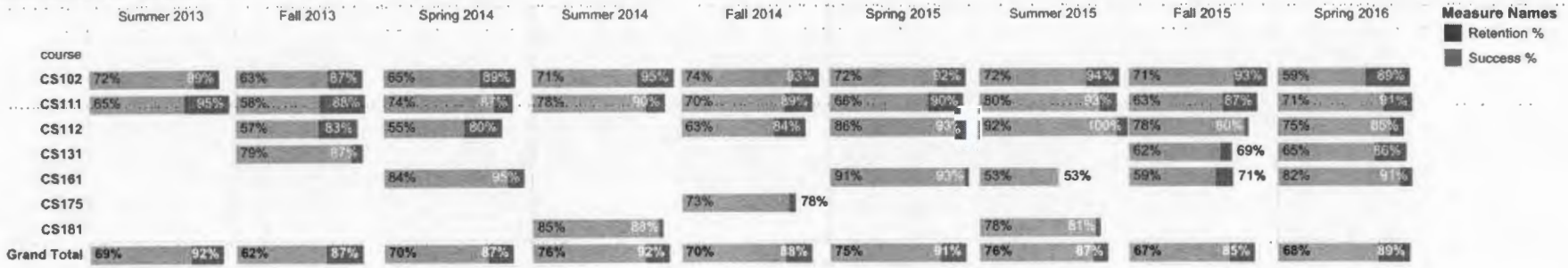
	Summer 2013	Fall 2013	Spring 2014	Summer 2014	Fall 2014	Spring 2015	Summer 2015	Fall 2015	Spring 2016
Sections	285	1,069	1,141	306	1,141	1,209	355	1,177	1,220
Headcount	5,421	10,922	11,293	5,185	11,084	11,249	5,593	10,982	11,341
Enrollment	8,455	28,612	29,369	8,168	29,153	28,984	8,789	28,471	28,153
Retention %	89.13%	86.97%	85.23%	89.37%	86.83%	85.44%	89.56%	86.43%	89.39%
Success %	77.46%	70.56%	70.22%	77.69%	69.80%	71.38%	77.44%	70.25%	73.22%
FTES	978	3,852	3,868	944	3,900	4,048	1,009	3,807	3,715

Summer 2013, Fall 2013, Spring 2014 and 6 more CS Outcomes

	Summer 2013	Fall 2013	Spring 2014	Summer 2014	Fall 2014	Spring 2015	Summer 2015	Fall 2015	Spring 2016
Sections	3.0	6.0	7.0	4.0	7.0	7.0	5.0	9.0	9.0
Headcount	106.0	225.0	250.0	139.0	256.0	257.0	130.0	305.0	303.0
Enrollment	107.0	234.0	271.0	139.0	279.0	275.0	142.0	329.0	320.0
retained	98.0	203.0	237.0	128.0	245.0	251.0	123.0	280.0	285.0
Retention %	91.59%	86.75%	87.45%	92.09%	87.81%	91.27%	86.62%	85.11%	89.06%
success	74.0	145.0	190.0	106.0	196.0	206.0	108.0	222.0	217.0
Success %	69.16%	61.97%	70.11%	76.26%	70.25%	74.91%	76.06%	67.48%	67.81%
FTES	12.0	31.4	33.4	15.0	34.4	33.8	15.6	39.9	39.0

Summer 2013, Fall 2013, Spring 2014 and 6 more Retention & Success

Click on course name to get retention/success by course demographics



All Demographics CS

	Summer 2010		Fall 2010		Spring 2011		Summer 2011		Fall 2011		Spring 2012		Summer 2012		Fall 2012		Spring 2013	
ETHNICITY	Headc..	FTES	Headc..	FTES	Headc..	FTES	Headc..	FTES	Headc..	FTES	Headc .	FTES	Headc..	FTES	Headc..	FTES	Headc..	FTES
Asian	4.0	0.4	13.0	1.8	13.0	2.0	8.0	0.9	5.0	0.7	10.0	1.1	5.0	0.6	13.0	1.6	11.0	1.4
Black	2.0	0.2	5.0	0.6	10.0	1.4	6.0	0.8	7.0	0.9	8.0	0.9	1.0	0.2	5.0	0.5	3.0	0.3
Filipono			6.0	0.9	7.0	1.0	3.0	0.5	9.0	1.2	5.0	0.6	2.0	0.2	8.0	1.0	7.0	1.2
Hispanic	21.0	2.1	81.0	11.7	84.0	12.8	43.0	5.3	83.0	11.0	81.0	10.2	39.0	4.6	89.0	10.9	82.0	11.0
Native Am	1.0	0.1	1.0	0.3	5.0	0.8	1.0	0.1	1.0	0.1	4.0	0.6			3.0	0.5	4.0	0.5
Other	1.0	0.1																
Pacific Islander	1.0	0.1	2.0	0.2	3.0	0.4	2.0	0.2	3.0	0.4	2.0	0.4			2.0	0.3	3.0	0.4
Unknown	3.0	0.3	4.0	0.5	3.0	0.4			1.0	0.1								
White	27.0	2.8	89.0	13.2	103.0	16.9	58.0	7.4	96.0	11.9	108.0	14.0	45.0	5.4	81.0	10.4	100.0	12.5

Summer 2010, Fall 2010, Spring 2011 and 6 more Demographics CS

	Summer 2010		Fall 2010		Spring 2011		Summer 2011		Fall 2011		Spring 2012		Summer 2012		Fall 2012		Spring 2013	
Gender	Headc..	FTES	Headc..	FTES	Headc..	FTES	Headc..	FTES	Headc..	FTES	Headc..	FTES	Headc..	FTES	Headc..	FTES	Headc..	FTES
Female	18.0	1.8	27.0	4.1	36.0	5.5	35.0	4.1	39.0	4.7	40.0	4.8	19.0	2.4	42.0	5.0	39.0	4.7
Male	42.0	4.3	174.0	25.0	191.0	30.1	86.0	11.1	166.0	21.6	178.0	23.0	73.0	8.7	159.0	20.3	171.0	22.7
Unknown					1.0	0.1												
Grand Total	60.0	6.1	201.0	29.1	228.0	35.7	121.0	15.2	205.0	26.3	218.0	27.8	92.0	11.1	201.0	25.3	210.0	27.4

All Demographics CS

	Summer 2013		Fall 2013		Spring 2014		Summer 2014		Fall 2014		Spring 2015		Summer 2015		Fall 2015		Spring 2016	
ETHNICITY	Headc..	FTES	Headc..	FTES	Headc..	FTES	Headc..	FTES	Headc..	FTES	Headc..	FTES	Headc..	FTES	Headc..	FTES	Headc..	FTES
Asian	10.0	1.2	15.0	2.0	16.0	2.2	6.0	0.7	9.0	1.4	14.0	1.7	10.0	1.1	17.0	2.2	20.0	2.7
Black	3.0	0.3	6.0	0.7	4.0	0.5	2.0	0.2	8.0	0.9	8.0	1.0	1.0	0.1	5.0	0.5	4.0	0.4
Filipono	3.0	0.4	5.0	0.7	12.0	1.8	6.0	0.6	10.0	1.3	11.0	1.4	5.0	0.5	15.0	2.3	15.0	1.9
Hispanic	40.0	4.6	93.0	12.8	93.0	12.3	59.0	6.4	102.0	13.9	109.0	14.4	66.0	7.8	147.0	19.1	143.0	18.5
Native Am			1.0	0.1	3.0	0.4	4.0	0.5	8.0	1.1	6.0	0.7	4.0	0.5	9.0	1.0	9.0	1.2
Pacific Islander			1.0	0.1	4.0	0.5			7.0	0.8	4.0	0.5	3.0	0.4	3.0	0.4	1.0	0.1
White	50.0	5.5	104.0	14.8	118.0	15.6	62.0	6.6	112.0	14.9	105.0	14.1	41.0	5.2	109.0	14.4	111.0	14.2

Summer 2013, Fall 2013, Spring 2014 and 6 more Demographics CS

	Summer 2013		Fall 2013		Spring 2014		Summer 2014		Fall 2014		Spring 2015		Summer 2015		Fall 2015		Spring 2016	
Gender	Headc..	FTES	Headc..	FTES	Headc..	FTES	Headc..	FTES	Headc..	FTES	Headc..	FTES	Headc..	FTES	Headc..	FTES	Headc..	FTES
Female	34.0	3.7	37.0	4.6	47.0	5.9	36.0	3.8	43.0	5.4	44.0	5.5	26.0	3.0	54.0	6.7	66.0	8.0
Male	72.0	8.3	188.0	26.8	203.0	27.5	103.0	11.2	213.0	29.0	212.0	28.1	103.0	12.4	250.0	33.1	236.0	30.8
Unknown											1.0	0.1	1.0	0.2	1.0	0.1	1.0	0.2
Grand Total	106.0	12.0	225.0	31.4	250.0	33.4	139.0	15.0	256.0	34.4	257.0	33.8	130.0	15.6	305.0	39.9	303.0	39.0

Summer 2010, Fall 2010, Spring 2011 and 6 more Demographics CS

	Summer 2010		Fall 2010		Spring 2011		Summer 2011		Fall 2011		Spring 2012		Summer 2012		Fall 2012		Spring 2013	
age_category	Headc..	FTES	Headc..	FTES	Headc..	FTES	Headc..	FTES	Headc..	FTES	Headc..	FTES	Headc..	FTES	Headc..	FTES	Headc..	FTES
Under 19	16.00	1.59	48.00	7.06	61.00	9.14	29.00	3.97	64.00	7.93	65.00	8.18	22.00	2.75	58.00	7.33	56.00	7.29
20-24	24.00	2.42	88.00	12.47	87.00	13.61	46.00	5.61	84.00	10.76	89.00	11.48	37.00	4.24	80.00	10.00	94.00	12.64
25-29	7.00	0.70	35.00	5.26	32.00	4.80	19.00	2.51	25.00	3.61	30.00	3.91	9.00	1.20	31.00	4.08	31.00	4.07
30-34	2.00	0.20	7.00	0.95	15.00	2.29	9.00	0.95	18.00	2.43	16.00	2.17	13.00	1.55	19.00	2.34	14.00	1.76
35-39	1.00	0.10	5.00	0.68	5.00	0.79	6.00	0.62	3.00	0.36	5.00	0.59	2.00	0.19	3.00	0.36	7.00	0.81
40-49	6.00	0.59	10.00	1.46	15.00	2.91	6.00	0.88	5.00	0.54	7.00	0.75	6.00	0.81	5.00	0.62	5.00	0.50
50+	4.00	0.49	8.00	1.22	13.00	2.20	6.00	0.68	6.00	0.70	6.00	0.73	3.00	0.32	5.00	0.57	3.00	0.33

All Demographics CS

	Summer 2010		Fall 2010		Spring 2011		Summer 2011		Fall 2011		Spring 2012		Summer 2012		Fall 2012		Spring 2013	
Enrollment Status	Headc..	FTES	Headc..	FTES	Headc..	FTES	Headc..	FTES	Headc..	FTES	Headc..	FTES	Headc..	FTES	Headc..	FTES	Headc..	FTES
First Time Student	11.0	1.1	32.0	4.6	4.0	0.6	4.0	0.4	20.0	2.5	7.0	0.9	5.0	0.6	20.0	2.4	8.0	0.8
First Time Transf..	9.0	1.0	9.0	1.3	13.0	2.3	6.0	0.7	3.0	0.4	7.0	1.0	9.0	1.1	12.0	1.4	9.0	1.2
Continuing	25.0	2.5	143.0	20.8	197.0	30.2	87.0	11.3	155.0	20.1	186.0	23.8	65.0	7.8	132.0	17.0	177.0	23.5
Returning	14.0	1.4	17.0	2.4	14.0	2.6	22.0	2.6	25.0	3.1	15.0	1.7	13.0	1.6	36.0	4.4	15.0	1.7
NA	1.0	0.1					2.0	0.2	2.0	0.3	3.0	0.4			1.0	0.1	1.0	0.1
Grand Total	60.0	6.1	201.0	29.1	228.0	35.7	121.0	15.2	205.0	26.3	218.0	27.8	92.0	11.1	201.0	25.3	210.0	27.4

Summer 2013, Fall 2013, Spring 2014 and 6 more Demographics CS

	Summer 2013		Fall 2013		Spring 2014		Summer 2014		Fall 2014		Spring 2015		Summer 2015		Fall 2015		Spring 2016	
age_category	Headc..	FTES	Headc..	FTES	Headc..	FTES	Headc..	FTES	Headc..	FTES	Headc..	FTES	Headc..	FTES	Headc..	FTES	Headc .	FTES
Under 19	26.0	2.9	68.0	9.3	64.0	8.7	28.0	3.0	83.0	11.0	71.0	9.5	40.0	4.8	102.0	13.4	87.0	11.2
20-24	41.0	4.6	95.0	13.2	121.0	16.1	66.0	7.2	105.0	14.6	123.0	16.5	49.0	6.1	130.0	17.5	138.0	18.2
25-29	19.0	2.2	35.0	5.2	35.0	4.5	22.0	2.4	31.0	3.9	38.0	4.7	23.0	2.5	35.0	4.6	44.0	5.6
30-34	5.0	0.5	13.0	1.9	13.0	1.7	9.0	1.0	22.0	3.0	17.0	2.2	9.0	1.1	22.0	2.7	13.0	1.6
35-39	9.0	1.0	5.0	0.7	7.0	0.9	9.0	0.9	7.0	0.8	4.0	0.4	3.0	0.3	5.0	0.5	10.0	1.2
40-49	5.0	0.5	5.0	0.6	8.0	1.0	1.0	0.1	3.0	0.5	2.0	0.2	3.0	0.4	5.0	0.6	7.0	0.7
50+	1.0	0.1	4.0	0.6	2.0	0.4	4.0	0.4	5.0	0.6	2.0	0.2	3.0	0.3	6.0	0.6	4.0	0.4

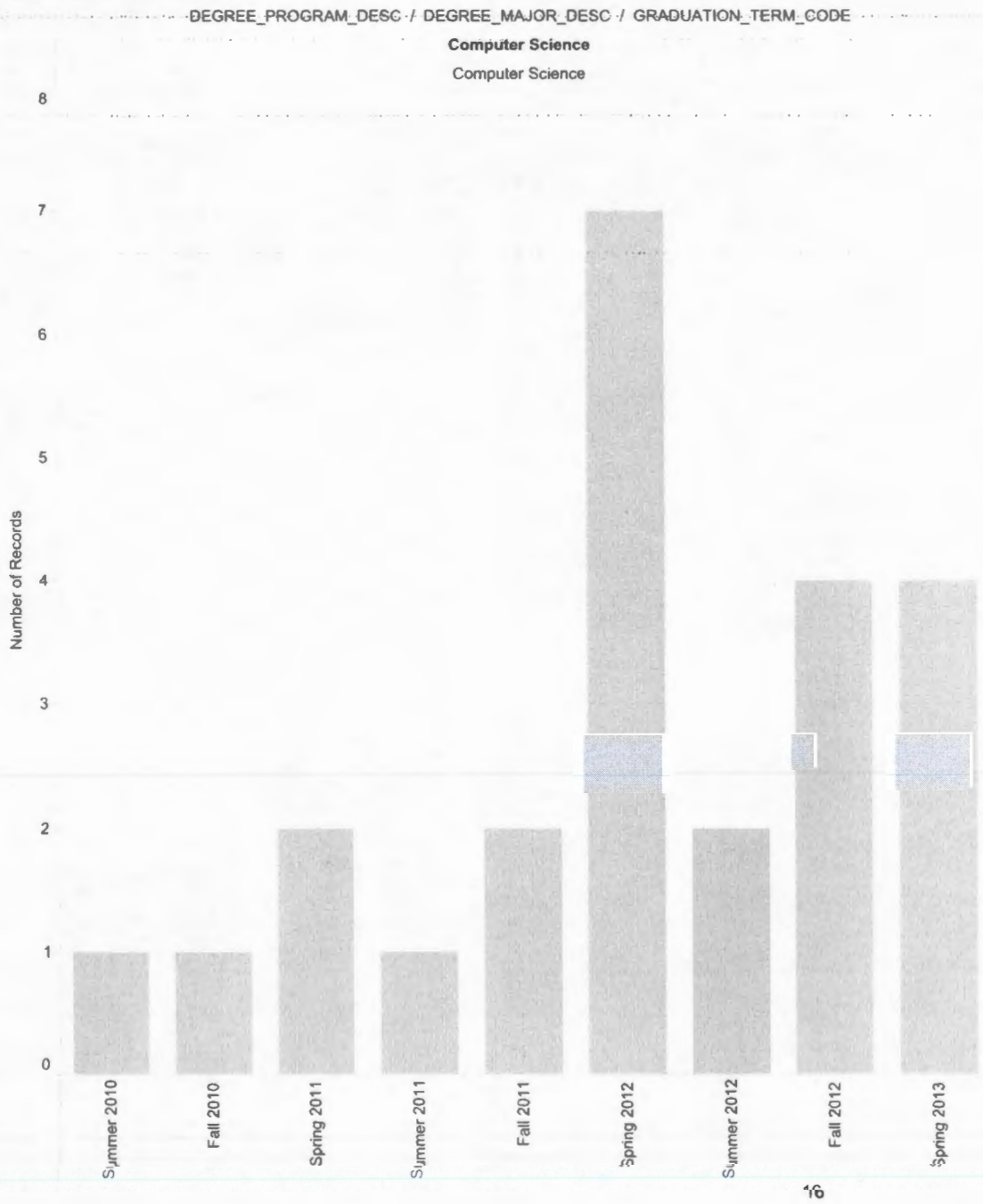
All Demographics CS

	Summer 2013		Fall 2013		Spring 2014		Summer 2014		Fall 2014		Spring 2015		Summer 2015		Fall 2015		Spring 2016	
Enrollment Status	Headc..	FTES	Headc..	FTES	Headc..	FTES	Headc..	FTES	Headc..	FTES	Headc..	FTES	Headc..	FTES	Headc..	FTES	Headc..	FTES
First Time Student	9.0	1.0	33.0	4.6	7.0	0.7	13.0	1.4	49.0	6.4	10.0	1.2	6.0	0.6	62.0	8.1	6.0	0.7
First Time Transf..	15.0	1.7	14.0	1.8	13.0	1.7	6.0	0.7	13.0	1.7	10.0	1.2	11.0	1.4	7.0	0.8	11.0	1.3
Continuing	58.0	6.7	159.0	22.5	204.0	27.6	91.0	9.8	167.0	22.5	221.0	29.3	98.0	11.8	205.0	27.6	265.0	34.6
Returning	20.0	2.2	17.0	2.2	20.0	2.6	21.0	2.2	25.0	3.5	14.0	1.7	7.0	0.8	24.0	2.7	18.0	2.0
NA	4.0	0.4	2.0	0.3	6.0	0.7	8.0	0.8	2.0	0.2	2.0	0.3	8.0	0.9	7.0	0.7	3.0	0.4
Grand Total	106.0	12.0	225.0	31.4	250.0	33.4	139.0	15.0	256.0	34.4	257.0	33.8	130.0	15.6	305.0	39.9	303.0	39.0

Degrees & Certificates

			GRADUATION_TERM_CODE									
DEGREE_PRO..	DEGREE_MAJO..	DEGREE_CODE	Summer 2010	Fall 2010	Spring 2011	Summer 2011	Fall 2011	Spring 2012	Summer 2012	Fall 2012	Spring 2013	Grand Total
Computer Science	Computer Science	AA	1	1	2	1	2	7	2	4	4	24
	Total		1	1	2	1	2	7	2	4	4	24
Grand Total			1	1	2	1	2	7	2	4	4	24

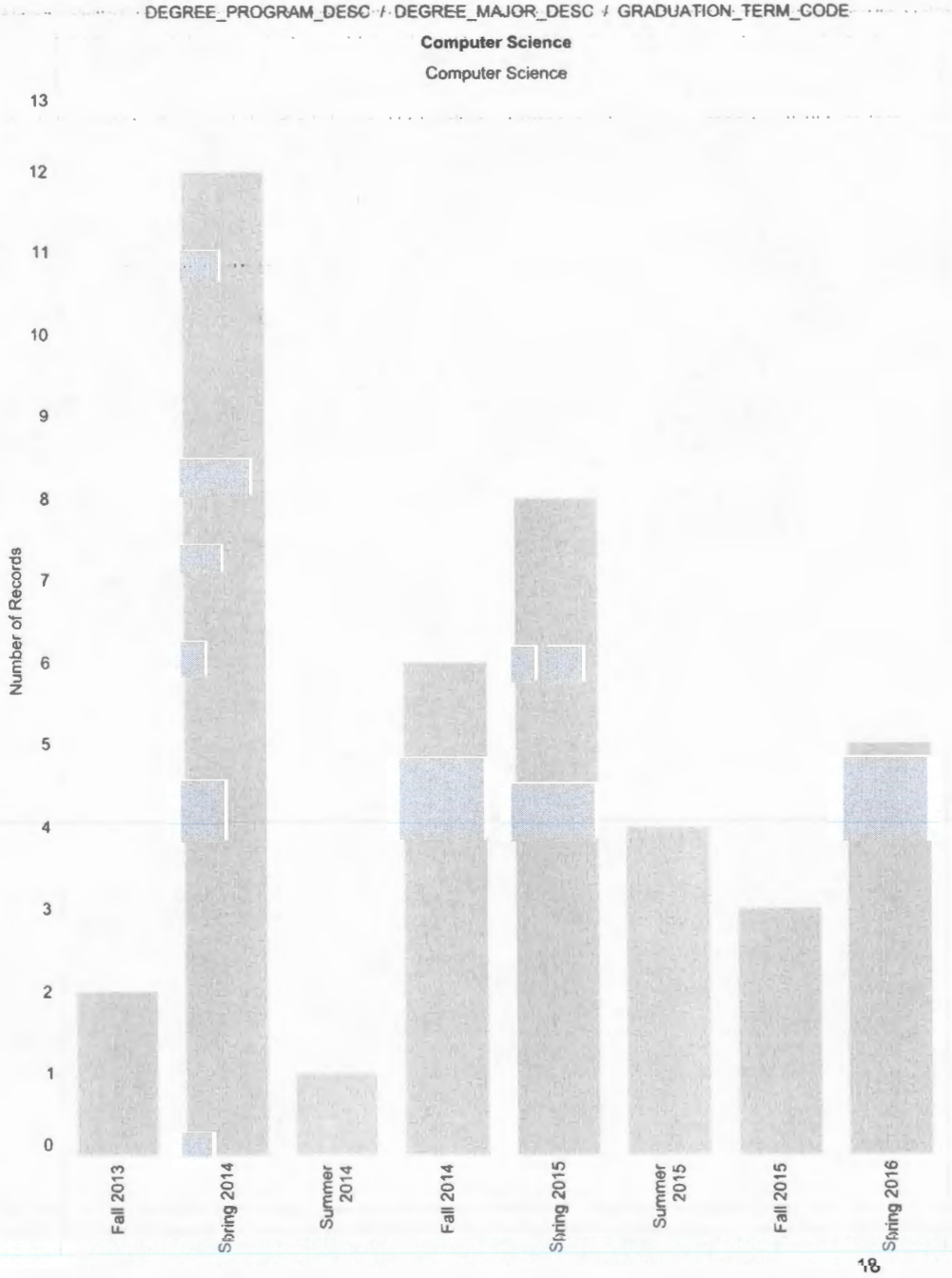
Degrees & Certificates



Degrees & Certificates

			GRADUATION_TERM_CODE								
DEGREE_PRO..	DEGREE_MAJO..	DEGREE_CODE	Fall 2013	Spring 2014	Summer 2014	Fall 2014	Spring 2015	Summer 2015	Fall 2015	Spring 2016	Grand Total
Computer Science	Computer Science	AA	2	12	1	6	8	4	3	5	41
	Total		2	12	1	6	8	4	3	5	41
Grand Total			2	12	1	6	8	4	3	5	41

Degrees & Certificates



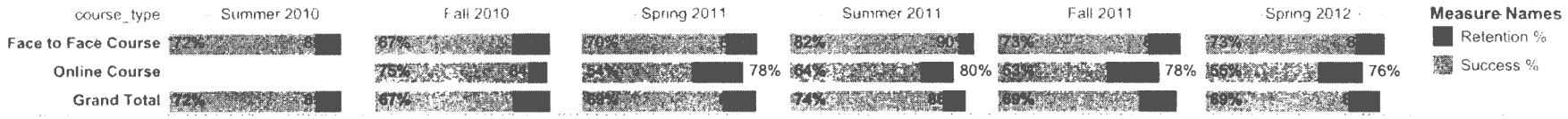
Retention & Success for CS

		Summer 2010			Fall 2010			Spring 2011			Summer 2011			Fall 2011			Spring 2012		
course_type	course	Sections	Enrollment	FTES	Sections	Enrollment	FTES	Sections	Enrollment	FTES	Sections	Enrollment	FTES	Sections	Enrollment	FTES	Sections	Enrollment	FTES
Face to Face Course	CS102	1.0	35.0	3.4	1.0	42.0	4.5	1.0	33.0	3.4				1.0	40.0	4.3	1.0	39.0	4.2
	CS105				2.0	28.0	4.9	2.0	39.0	6.7									
	CS106							1.0	18.0	3.1									
	CS111													1.0	42.0	6.3	1.0	40.0	6.0
	CS121				2.0	86.0	12.8	2.0	74.0	10.6									
	CS122				1.0	27.0	1.8	1.0	39.0	2.6									
	CS123				1.0	25.0	1.7	1.0	37.0	2.4									
	CS141										1.0	35.0	3.6						
	CS161										1.0	39.0	3.8						
	CS175				1.0	33.0	3.4							1.0	33.0	3.4			
	CS181	1.0	26.0	2.7				1.0	27.0	2.9							1.0	34.0	3.6
	CS320							1.0	17.0	2.3									
	Total	2.0	61.0	6.1	8.0	241.0	29.1	10.0	284.0	34.1	2.0	74.0	7.4	3.0	115.0	13.9	3.0	113.0	13.8
Online Course	CS102										1.0	35.0	3.4	1.0	38.0	3.7	1.0	38.0	3.7
	CS111										1.0	34.0	4.4	1.0	37.0	4.8	1.0	38.0	4.9
	CS112													1.0	30.0	3.9	1.0	42.0	5.4
	CS121							1.0	13.0	1.7									
	Total							1.0	13.0	1.7	2.0	69.0	7.8	3.0	105.0	12.4	3.0	118.0	14.1
Grand Total		2.0	61.0	6.1	8.0	241.0	29.1	11.0	297.0	35.7	4.0	143.0	15.2	6.0	220.0	26.3	6.0	231.0	27.8

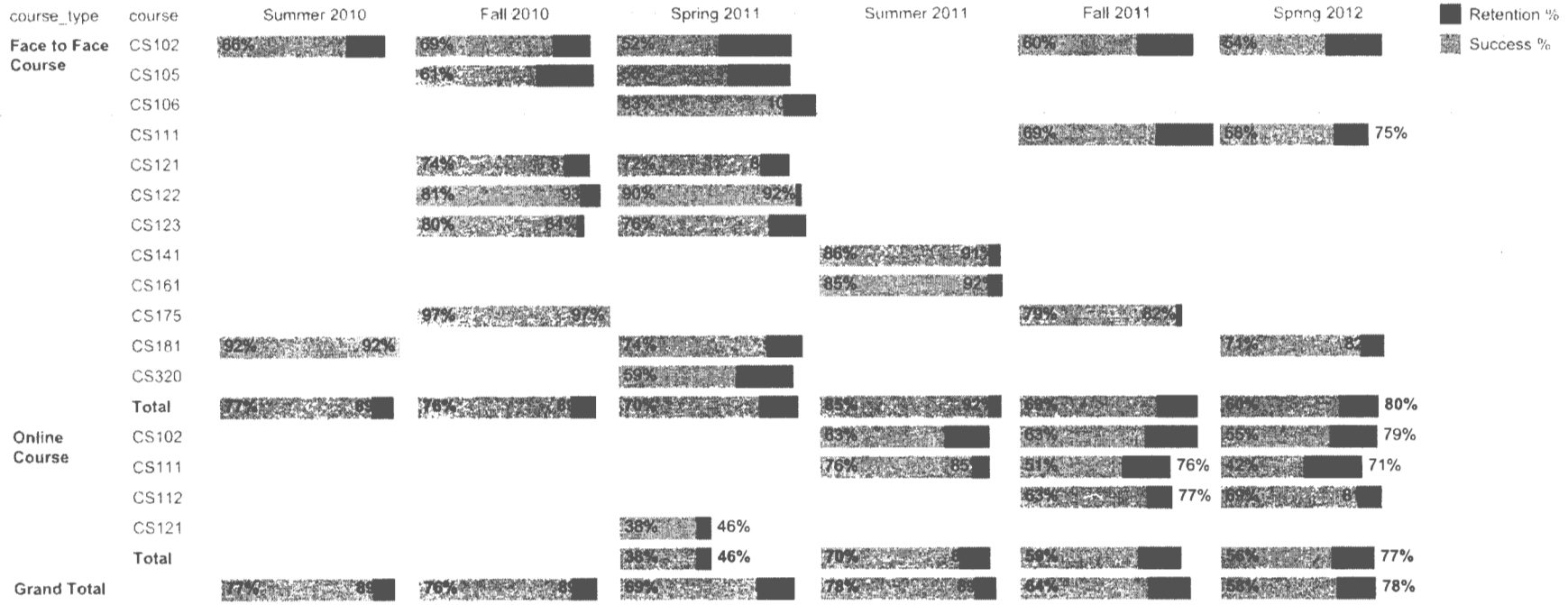
Retention & Success AHC

	Summer 2010			Fall 2010			Spring 2011			Summer 2011			Fall 2011			Spring 2012		
course_type	Sectio..	Enroll..	FTES	Sectio..	Enroll..	FTES	Sectio..	Enroll..	FTES	Sectio..	Enroll..	FTES	Sectio..	Enroll..	FTES	Sectio..	Enroll..	FTES
Face to Face Course	348	10,179	1,249	1,172	32,135	4,223	1,178	31,018	3,966	212	5,351	680	846	23,234	3,291	945	24,321	3,209
Online Course				6	76	16	62	2,091	196	102	3,891	391	177	5,985	614	201	6,667	670
Grand Total	348	10,179	1,249	1,178	32,211	4,239	1,240	33,109	4,162	314	9,242	1,072	1,023	29,219	3,905	1,146	30,988	3,879

Retention & Success for all AHC



Retention & Success CS



Retention & Success for CS

		Summer 2014			Fall 2014			Spring 2015			Summer 2015			Fall 2015			Spring 2016		
course_type	course	Sections	Enrollment	FTES	Sections	Enrollment	FTES	Sections	Enrollment	FTES	Sections	Enrollment	FTES	Sections	Enrollment	FTES	Sections	Enrollment	FTES
Face to Face Course	CS102	1.0	28.0	2.8															
	CS111				2.0	81.0	12.1	2.0	76.0	11.3				2.0	82.0	12.2	2.0	80.0	11.9
	CS112													1.0	41.0	6.1	1.0	40.0	6.0
	CS131													1.0	39.0	4.0	1.0	37.0	3.8
	CS161							1.0	44.0	4.7	1.0	15.0	1.4	1.0	17.0	1.8	1.0	22.0	2.3
	CS175				1.0	40.0	4.3												
	CS181	1.0	34.0	3.4							1.0	37.0	3.7						
	Total	2.0	62.0	6.2	3.0	121.0	16.3	3.0	120.0	16.0	2.0	52.0	5.1	5.0	179.0	24.1	5.0	179.0	24.0
Online Course	CS102	1.0	37.0	3.6	2.0	74.0	7.2	2.0	71.0	6.9	1.0	36.0	3.5	3.0	112.0	10.9	3.0	101.0	9.8
	CS111	1.0	40.0	5.2	1.0	41.0	5.3	1.0	40.0	5.2	1.0	41.0	5.3	1.0	38.0	4.9	1.0	40.0	5.2
	CS112				1.0	43.0	5.6	1.0	44.0	5.7	1.0	13.0	1.7						
	Total	2.0	77.0	8.8	4.0	158.0	18.1	4.0	155.0	17.8	3.0	90.0	10.5	4.0	150.0	15.8	4.0	141.0	15.0
Grand Total		4.0	139.0	15.0	7.0	279.0	34.4	7.0	275.0	33.8	5.0	142.0	15.6	9.0	329.0	39.9	9.0	320.0	39.0

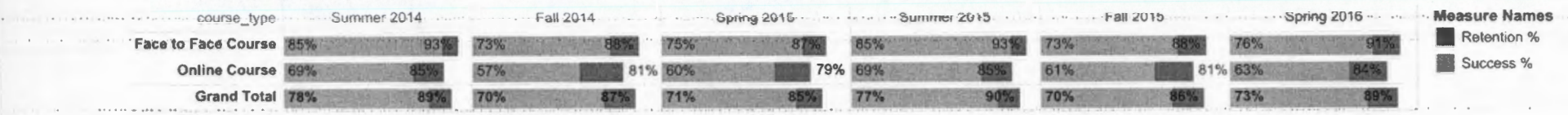
Retention & Success for CS

		Summer 2014			Fall 2014			Spring 2015			Summer 2015			Fall 2015			Spring 2016		
course_type	course	Sections	Enrollment	FTES	Sections	Enrollment	FTES	Sections	Enrollment	FTES	Sections	Enrollment	FTES	Sections	Enrollment	FTES	Sections	Enrollment	FTES
Face to Face Course	CS102	1.0	28.0	2.8															
	CS111				2.0	81.0	12.1	2.0	76.0	11.3				2.0	82.0	12.2	2.0	80.0	11.9
	CS112													1.0	41.0	6.1	1.0	40.0	6.0
	CS131													1.0	39.0	4.0	1.0	37.0	3.8
	CS161							1.0	44.0	4.7	1.0	15.0	1.4	1.0	17.0	1.8	1.0	22.0	2.3
	CS175				1.0	40.0	4.3												
	CS181	1.0	34.0	3.4							1.0	37.0	3.7						
	Total	2.0	62.0	6.2	3.0	121.0	16.3	3.0	120.0	16.0	2.0	52.0	5.1	5.0	179.0	24.1	5.0	179.0	24.0
Online Course	CS102	1.0	37.0	3.6	2.0	74.0	7.2	2.0	71.0	6.9	1.0	36.0	3.5	3.0	112.0	10.9	3.0	101.0	9.8
	CS111	1.0	40.0	5.2	1.0	41.0	5.3	1.0	40.0	5.2	1.0	41.0	5.3	1.0	38.0	4.9	1.0	40.0	5.2
	CS112				1.0	43.0	5.6	1.0	44.0	5.7	1.0	13.0	1.7						
	Total	2.0	77.0	8.8	4.0	158.0	18.1	4.0	155.0	17.8	3.0	90.0	10.5	4.0	150.0	15.8	4.0	141.0	15.0
Grand Total		4.0	139.0	15.0	7.0	279.0	34.4	7.0	275.0	33.8	5.0	142.0	15.6	9.0	329.0	39.9	9.0	320.0	39.0

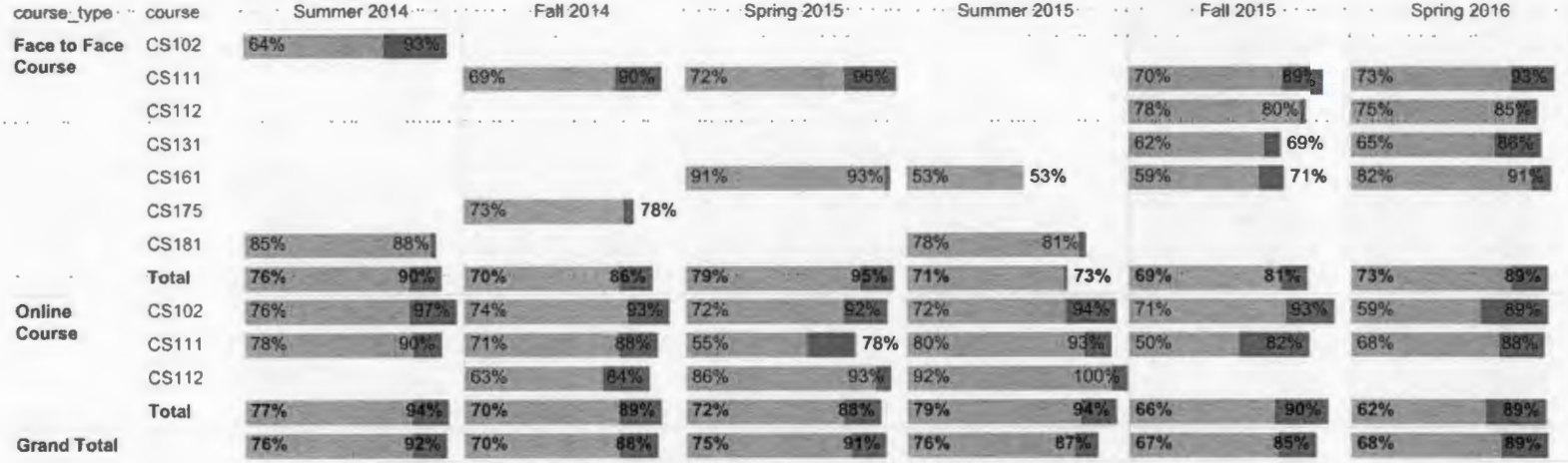
Retention & Success AHC

	Summer 2014			Fall 2014			Spring 2015			Summer 2015			Fall 2015			Spring 2016		
course_type	Sectio..	Enroll..	FTES	Sectio..	Enroll..	FTES	Sectio..	Enroll..	FTES	Sectio..	Enroll..	FTES	Sectio..	Enroll..	FTES	Sectio..	Enroll..	FTES
Face to Face Course	200	4,441	564	943	22,904	3,260	984	22,200	3,364	230	4,662	593	952	22,084	3,145	980	21,469	3,043
Online Course	106	3,727	380	198	6,249	640	225	6,784	685	125	4,127	416	225	6,387	662	240	6,684	672
Grand Total	306	8,168	944	1,141	29,153	3,900	1,209	28,984	4,048	355	8,789	1,009	1,177	28,471	3,807	1,220	28,153	3,715

Retention & Success for all AHC



Retention & Success CS



course_type	course	Summer 2014		Fall 2014		Spring 2015		Summer 2015		Fall 2015		Spring 2016	
Face to Face Course	CS102	64%	93%										
	CS111			69%	90%	72%	96%			70%	89%	73%	93%
	CS112									78%	80%	75%	85%
	CS131									62%	69%	65%	86%
	CS161					91%	93%	53%	53%	59%	71%	82%	91%
	CS175			73%	78%								
	CS181	85%	88%					78%	81%				
	Total	76%	90%	70%	86%	79%	95%	71%	73%	69%	81%	73%	89%
Online Course	CS102	76%	97%	74%	93%	72%	92%	72%	94%	71%	93%	59%	89%
	CS111	78%	90%	71%	88%	55%	78%	80%	93%	50%	82%	68%	88%
	CS112			63%	84%	86%	93%	92%	100%				
	Total	77%	94%	70%	89%	72%	88%	79%	94%	66%	90%	62%	89%
Grand Total		76%	92%	70%	88%	75%	91%	76%	87%	67%	85%	68%	89%

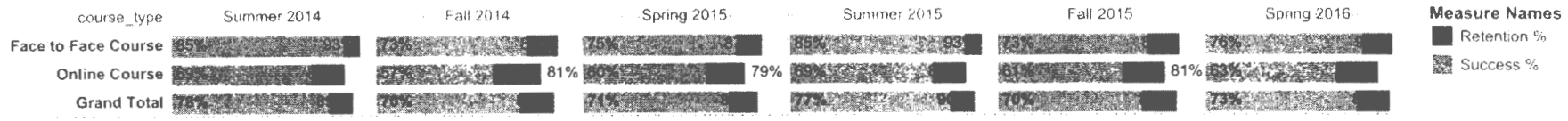
Retention & Success for CS

		Summer 2014			Fall 2014			Spring 2015			Summer 2015			Fall 2015			Spring 2016		
course_type	course	Sections	Enrollment	FTES	Sections	Enrollment	FTES	Sections	Enrollment	FTES	Sections	Enrollment	FTES	Sections	Enrollment	FTES	Sections	Enrollment	FTES
Face to Face Course	CS102	1.0	28.0	2.8															
	CS111				2.0	81.0	12.1	2.0	76.0	11.3				2.0	82.0	12.2	2.0	80.0	11.9
	CS112													1.0	41.0	6.1	1.0	40.0	6.0
	CS131													1.0	39.0	4.0	1.0	37.0	3.8
	CS161							1.0	44.0	4.7	1.0	15.0	1.4	1.0	17.0	1.8	1.0	22.0	2.3
	CS175				1.0	40.0	4.3												
	CS181	1.0	34.0	3.4							1.0	37.0	3.7						
	Total	2.0	62.0	6.2	3.0	121.0	16.3	3.0	120.0	16.0	2.0	52.0	5.1	5.0	179.0	24.1	5.0	179.0	24.0
Online Course	CS102	1.0	37.0	3.6	2.0	74.0	7.2	2.0	71.0	6.9	1.0	36.0	3.5	3.0	112.0	10.9	3.0	101.0	9.8
	CS111	1.0	40.0	5.2	1.0	41.0	5.3	1.0	40.0	5.2	1.0	41.0	5.3	1.0	38.0	4.9	1.0	40.0	5.2
	CS112				1.0	43.0	5.6	1.0	44.0	5.7	1.0	13.0	1.7						
	Total	2.0	77.0	8.8	4.0	158.0	18.1	4.0	155.0	17.8	3.0	90.0	10.5	4.0	150.0	15.8	4.0	141.0	15.0
Grand Total		4.0	139.0	15.0	7.0	279.0	34.4	7.0	275.0	33.8	5.0	142.0	15.6	9.0	329.0	39.9	9.0	320.0	39.0

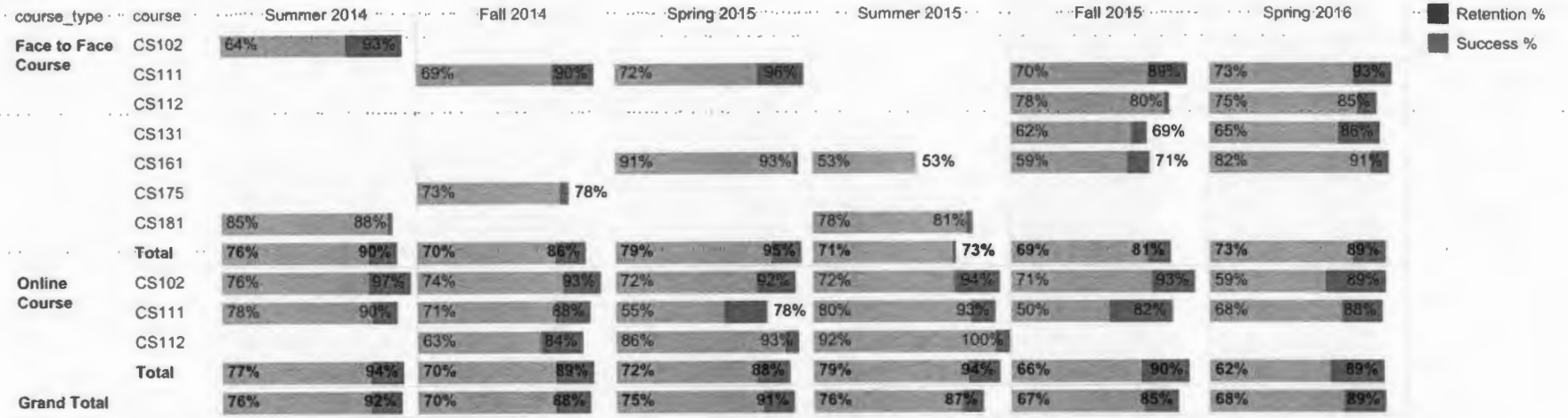
Retention & Success AHC

	Summer 2014			Fall 2014			Spring 2015			Summer 2015			Fall 2015			Spring 2016		
course_type	Sectio..	Enroll..	FTES	Sectio..	Enroll..	FTES	Sectio..	Enroll..	FTES	Sectio..	Enroll..	FTES	Sectio..	Enroll..	FTES	Sectio..	Enroll..	FTES
Face to Face Course	200	4,441	564	943	22,904	3,260	984	22,200	3,364	230	4,662	593	952	22,084	3,145	980	21,469	3,043
Online Course	106	3,727	380	198	6,249	640	225	6,784	685	125	4,127	416	225	6,387	662	240	6,684	672
Grand Total	306	8,168	944	1,141	29,153	3,900	1,209	28,984	4,048	355	8,789	1,009	1,177	28,471	3,807	1,220	28,153	3,715

Retention & Success for all AHC



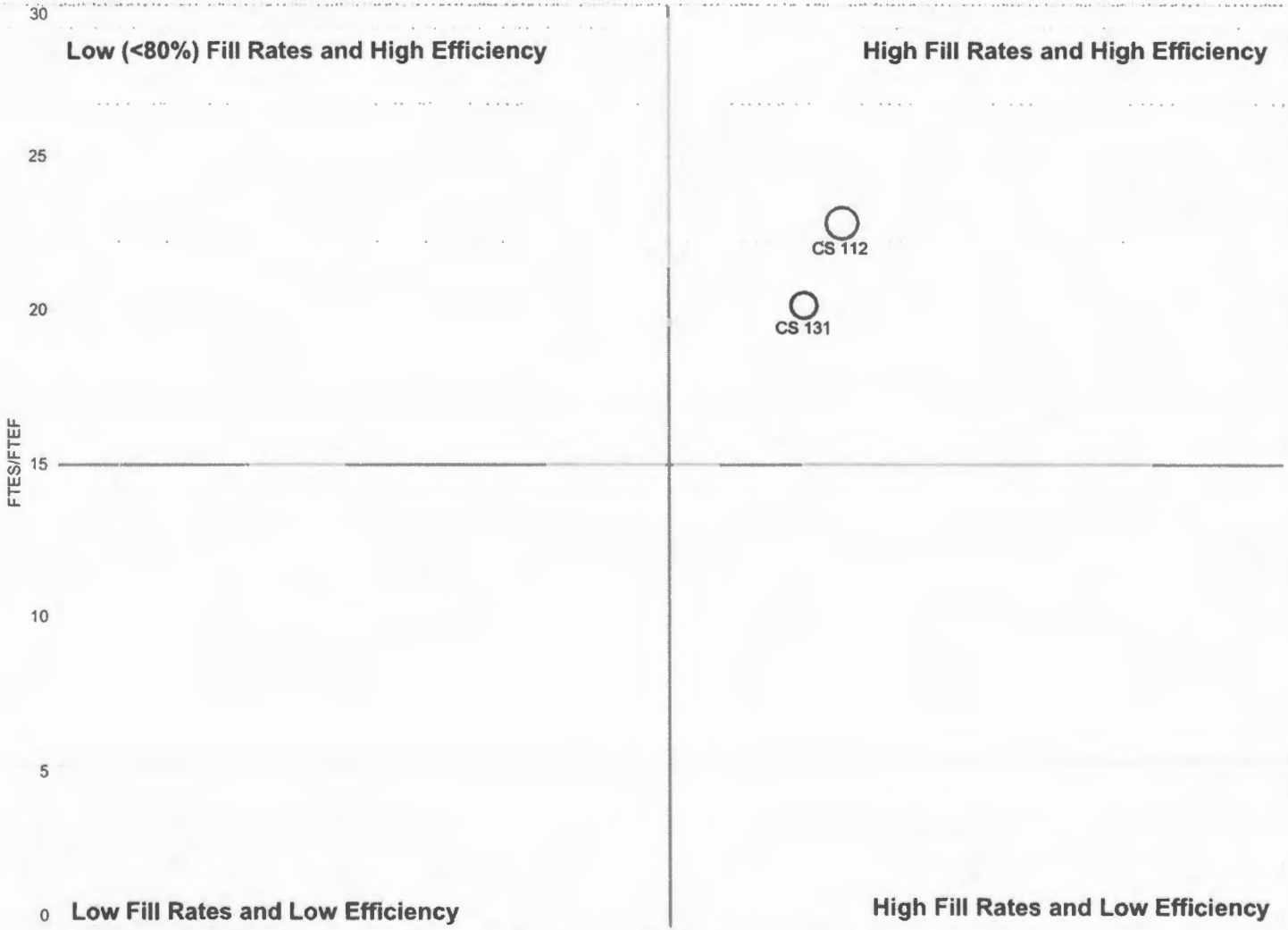
Retention & Success CS



Scheduling Viz Data - Fall 2015 CS

course	CRN	Site Code	FTES/FTEF	FTES	FTEF	Enrollment	Max Enrollment	Fill Rate	Day 1 Waitlist	Demand Ratio
CS 102	20654	ON	18.94	3.79	0.200	39	40	98%	2	103%
	20995	SM		3.89	0.000	40	40	100%	0	100%
	22209	ON		3.21	0.000	33	40	83%	0	83%
CS 111	20660	SM	22.31	5.96	0.267	40	40	100%	3	108%
	20661	ON	-4,921.90	4.92	-0.001	38	40	95%	4	105%
	20798	SM	23.43	6.26	0.267	42	40	105%	4	115%
CS 112	20658	SM	22.87	6.11	0.267	41	40	103%	4	113%
CS 131	22010	SM	20.21	4.04	0.200	39	40	98%	1	100%
CS 161	21653	SM		1.76	0.000	17	36	47%	0	47%

Course Efficiency - Fall 2015 CS



Term Code - Desc
Fall 2015

Subject Code
CS

Site Code
Multiple values

FTES
1.76
5.00
10.00
17.14

Totals for Selections

FTES/FTEF	33.27
FTES	39.93
FTEF	1.20
Fill Rate	92%
Sections	9
Avg Class Size	37
Day 1 Waitlist	18

Efficienty is the ratio of FTES to FTEF or 'how many FTES are generated per FTEF'.

Fill rate is the ratio of enrollment to max enrollment.

Demand ratio is enrollment + day 1 waitlist compared to max enrollment.

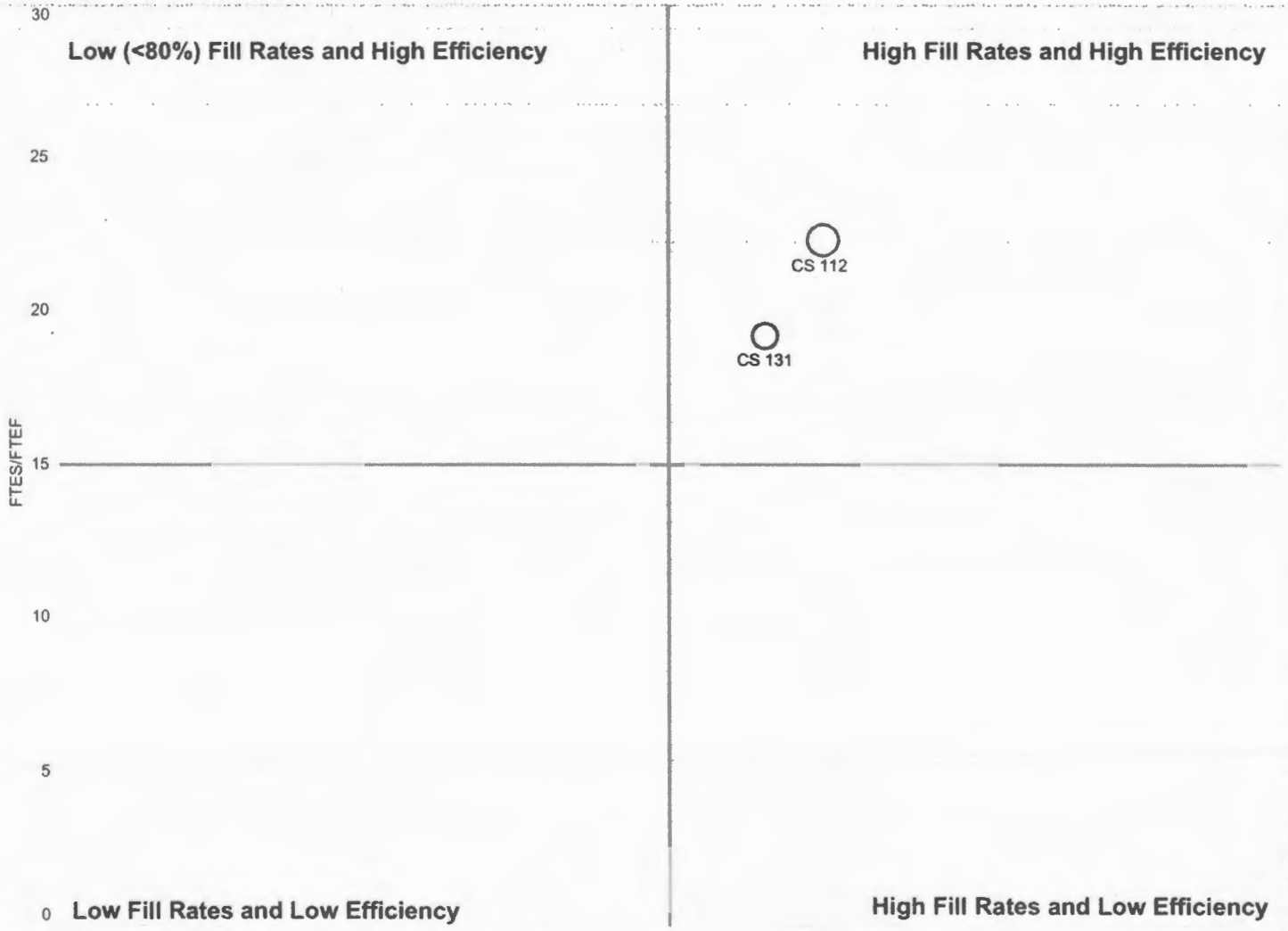
The threshold for efficiency is 15 and the threshold for fill rate is 80%

course	CRN	Site Code	FTES/FTEF	FTES	FTEF	Enrollment	Max Enrollment	Fill Rate	Day 1 Waitlist	Demand Ratio
CS 102	20654	ON	18.94	3.79	0.200	39	40	98%	2	103%
	20995	SM		3.89	0.000	40	40	100%	0	100%
	22209	ON		3.21	0.000	33	40	83%	0	83%
CS 111	20660	SM	22.31	5.96	0.267	40	40	100%	3	108%

Scheduling Viz Data - Spring 2016 CS

course	CRN	Site Code	FTES/FTEF	FTES	FTEF	Enrollment	Max Enrollment	Fill Rate	Day 1 Waitlist	Demand Ratio
CS 102	40572	ON	18.94	3.79	0.200	39	40	98%	1	100%
	40815	ON		2.33	0.000	24	40	60%	0	60%
	42046	SM		3.69	0.000	38	40	95%	0	95%
CS 111	40677	ON	-5,180.95	5.18	-0.001	40	40	100%	8	120%
	40678	SM	21.76	5.81	0.267	39	40	98%	0	98%
	40816	SM	22.87	6.11	0.267	41	40	103%	0	103%
CS 112	40680	SM	22.31	5.96	0.267	40	40	100%	7	118%
CS 131	42045	SM	19.17	3.83	0.200	37	40	93%	1	95%
CS 161	40817	SM		2.28	0.000	22	29	76%	0	76%

Course Efficiency - Spring 2016 CS



Term Code - Desc
Spring 2016

Subject Code
CS

Site Code
Multiple values

FTES
2.28
5.00
10.00
17.10

Totals for Selections

FTES/FTEF	32.48
FTES	38.98
FTEF	1.20
Fill Rate	92%
Sections	9
Avg Class Size	36
Day 1 Waitlist	17

Efficienty is the ratio of FTES to FTEF or 'how many FTES are generated per FTEF'.

Fill rate is the ratio of enrollment to max enrollment.

Demand ratio is enrollment + day 1 waitlist compared to max enrollment.

The threshold for efficiency is 15 and the threshold for fill rate is 80%

course	CRN	Site Code	FTES/FTEF	FTES	FTEF	Enrollment	Max Enrollment	Fill Rate	Day 1 Waitlist	Demand Ratio
CS 102	40572	ON	18.94	3.79	0.200	39	40	98%	1	100%
	40815	ON		2.33	0.000	24	40	60%	0	60%
	42046	SM		3.69	0.000	38	40	95%	0	95%
CS 111	40677	ON	-5,180.95	5.18	-0.001	40	40	100%	8	120%

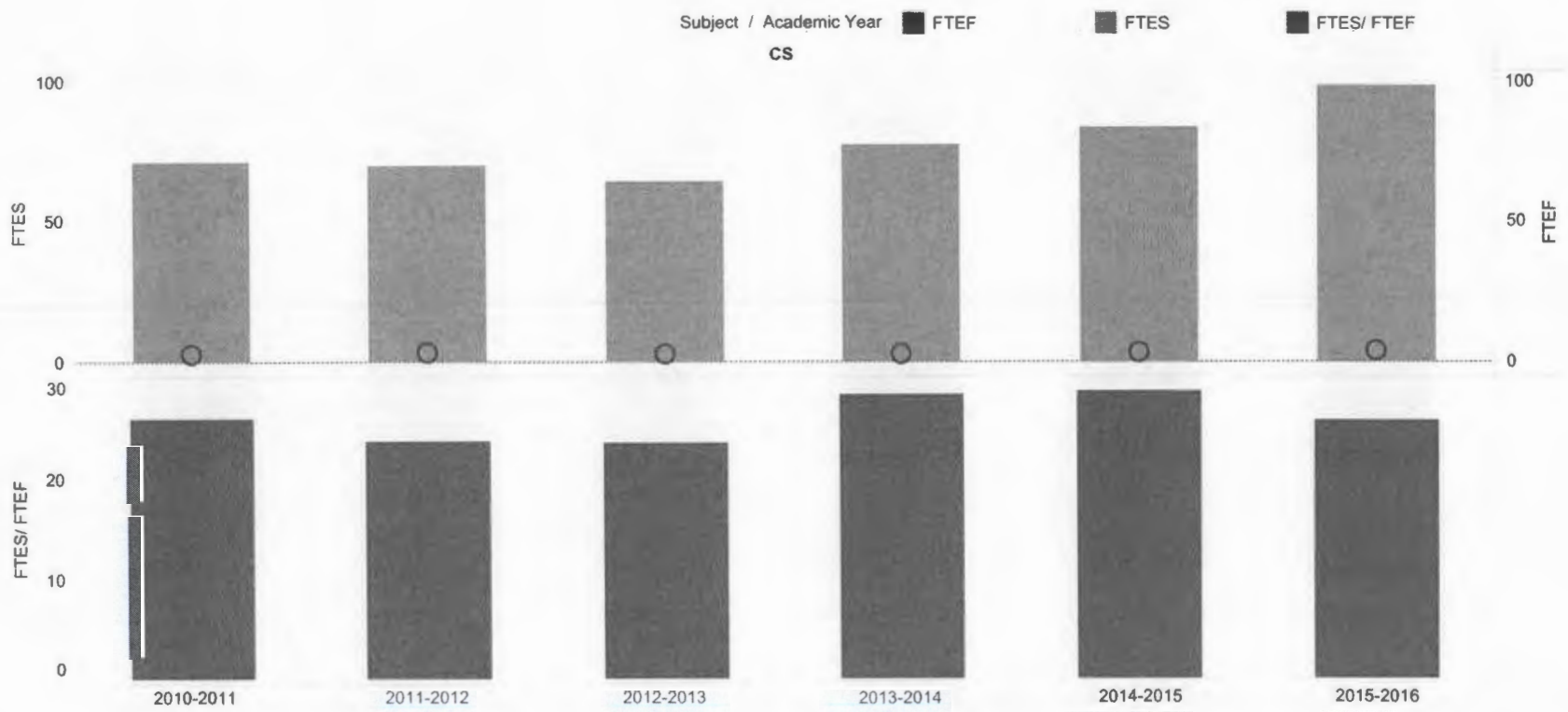
Facutly Load and FTES by Academic Year and Term
Data is current through Fall 2015

Subject: CS

Academic Year: All

mouse to the left of an academic year or above subject and click the '+' button to drill down into rows/columns

	Academic Year																	
	2010-2011			2011-2012			2012-2013			2013-2014			2014-2015			2015-2016		
Subject	FTEF	FTES	FTES/ FTEF	FTEF	FTES	FTES/ FTEF	FTEF	FTES	FTES/ FTEF	FTEF	FTES	FTES/ FTEF	FTEF	FTES	FTES/ FTEF	FTEF	FTES	FTES/ FTEF
CS	2.731	70.94	25.97	2.917	69.35	23.77	2.706	63.76	23.56	2.706	76.72	28.35	2.905	83.22	28.65	3.801	98.18	25.83
Grand Total	2.731	70.94	25.97	2.917	69.35	23.77	2.706	63.76	23.56	2.706	76.72	28.35	2.905	83.22	28.65	3.801	98.18	25.83



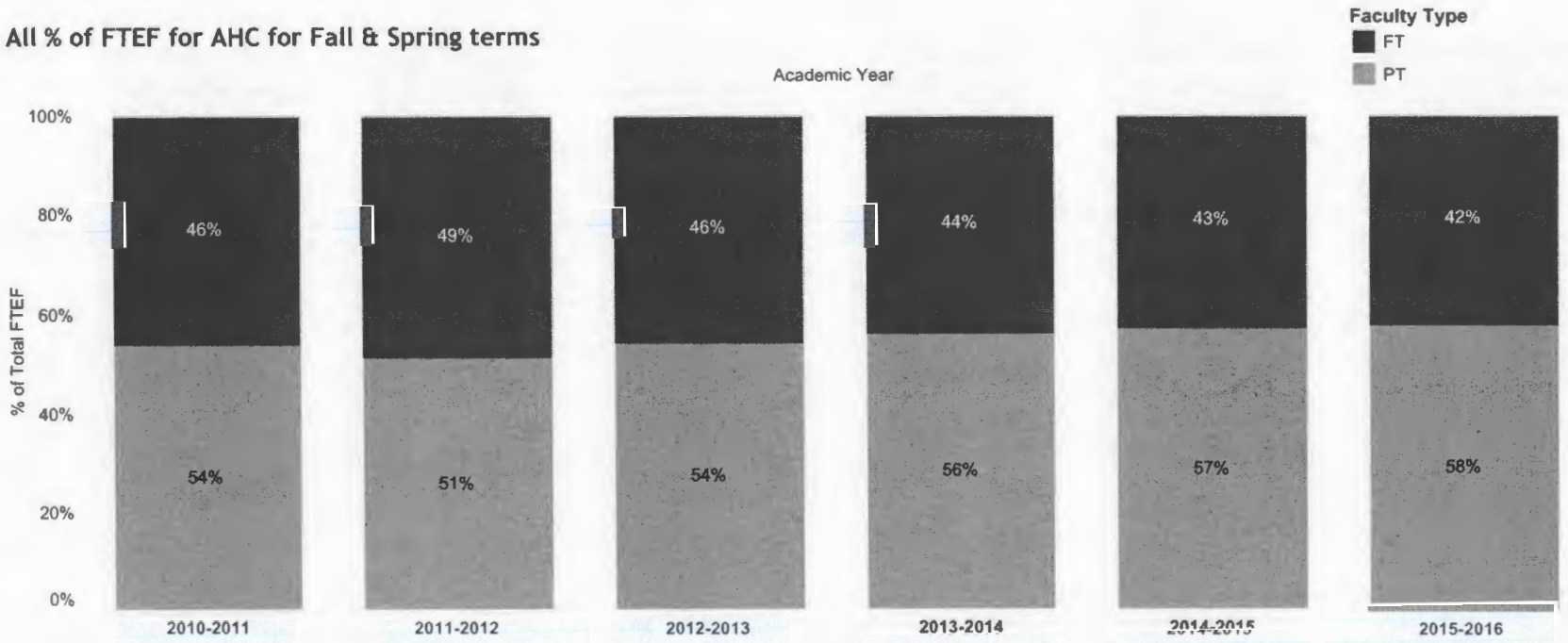
All FTEF for AHC

Facutly Type
- [x] Instructional
- [x] NonInstructional

mouse to the left of an academic year and click the '+' button to drill down into rows/columns

		Academic Year					
Instruction Type	**Faculty Type_**	**2010-2011**	**2011-2012**	**2012-2013**	**2013-2014**	**2014-2015**	**2015-2016**
Instructional	FT	233.5	226.1	222.3	221.5	211.1	219.2
	PT	325.5	282.5	308.9	334.9	358.5	379.7
	Total	558.9	508.6	531.2	556.4	569.6	598.9
NonInstructional	FT	47.8	45.5	51.5	55.4	68.3	70.9
	PT	24.3	25.6	30.8	30.4	35.5	37.4
	Total	72.1	71.0	82.3	85.8	103.8	108.3
Grand Total		631.1	579.6	613.4	642.2	673.4	707.2

All % of FTEF for AHC for Fall & Spring terms



FTEF by Faculty Type for CS
Data is current through Fall 2015

Subject_
CS

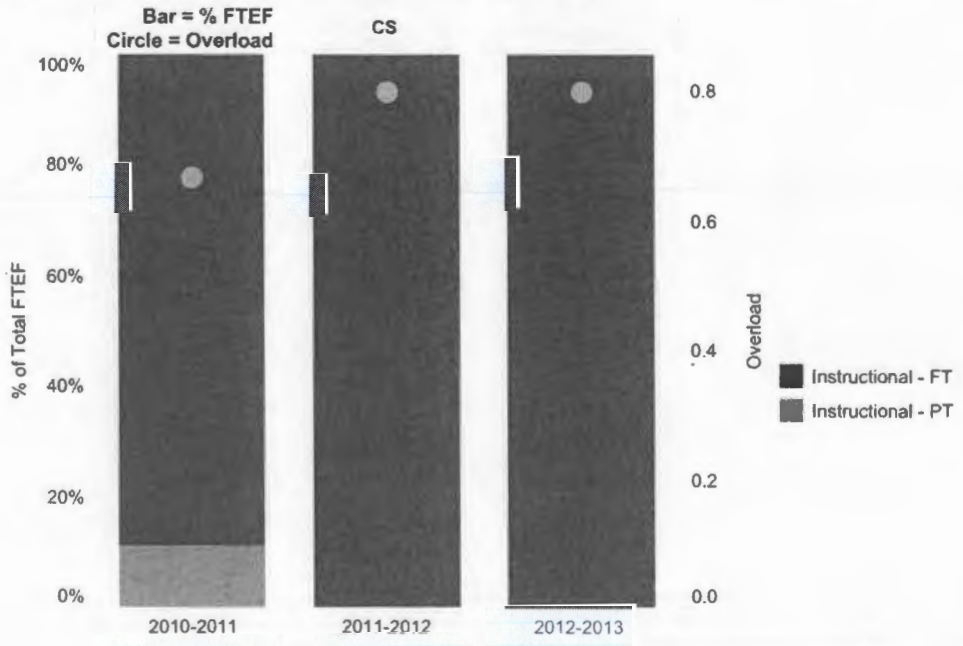
Academic Year
Multiple values

If multiple faculty teach the same course the TOTAL section count may not equal the SUM of sections shown

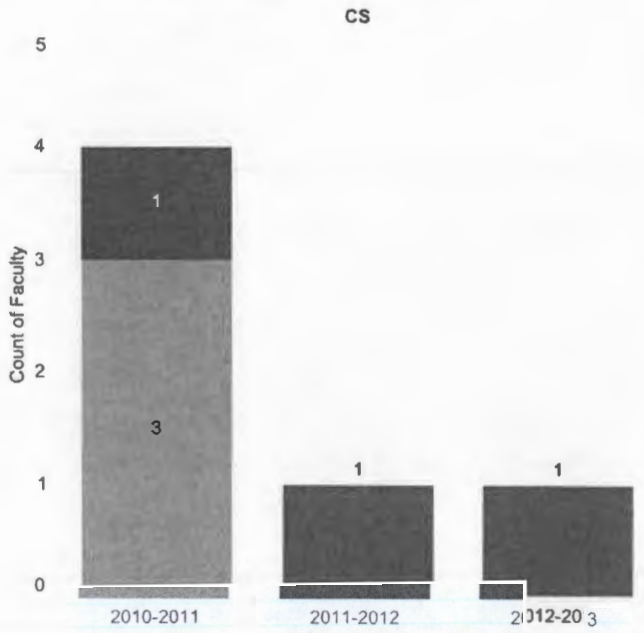
mouse to the left of an academic year or above subject and click the '+' button to drill down into rows/columns

		Academic Year											
		2010-2011				2011-2012				2012-2013			
Subject_	Faculty Type	FTEF	Overload	Faculty	Sections	FTEF	Overload	Faculty	Sections	FTEF	Overload	Faculty	Sections
CS	Instructional - FT	2.42	0.67	1.00	15.00	2.92	0.80	1.00	16.00	2.71	0.80	1.00	15.00
	Instructional - PT	0.31	0.00	3.00	6.00								
	Total	2.73	0.67	4.00	21.00	2.92	0.80	1.00	16.00	2.71	0.80	1.00	15.00
Grand Total		2.73	0.67	4.00	21.00	2.92	0.80	1.00	16.00	2.71	0.80	1.00	15.00

% of Total FTEF for CS and amount of Overload



Count of Faculty Type



FTEF by Faculty Type for CS
Data is current through Fall 2015

Subject_
CS

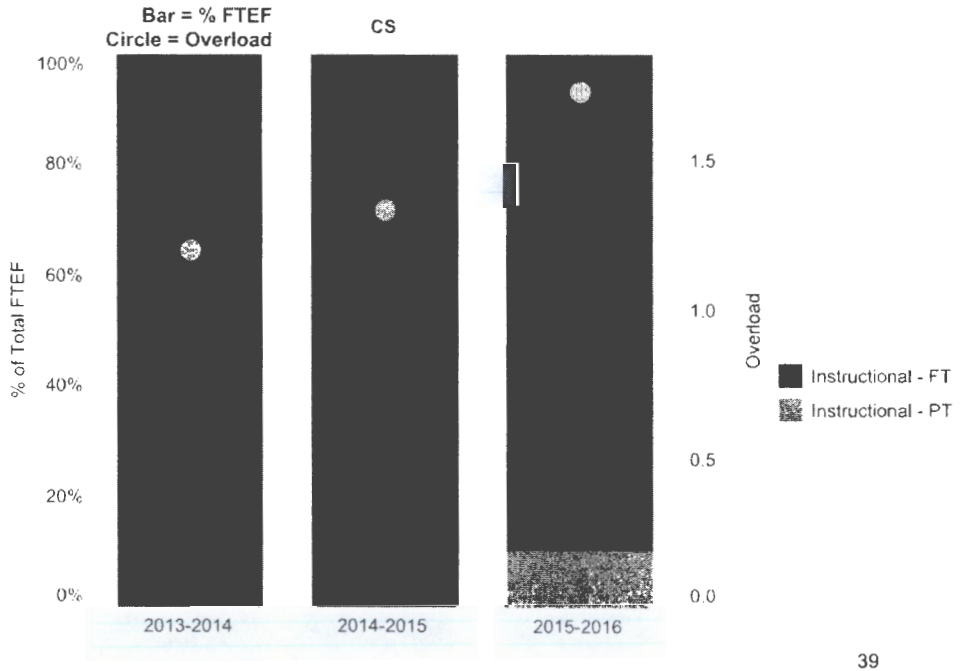
Academic Year
Multiple values

mouse to the left of an academic year or above subject and click the '+' button to drill down into rows/columns

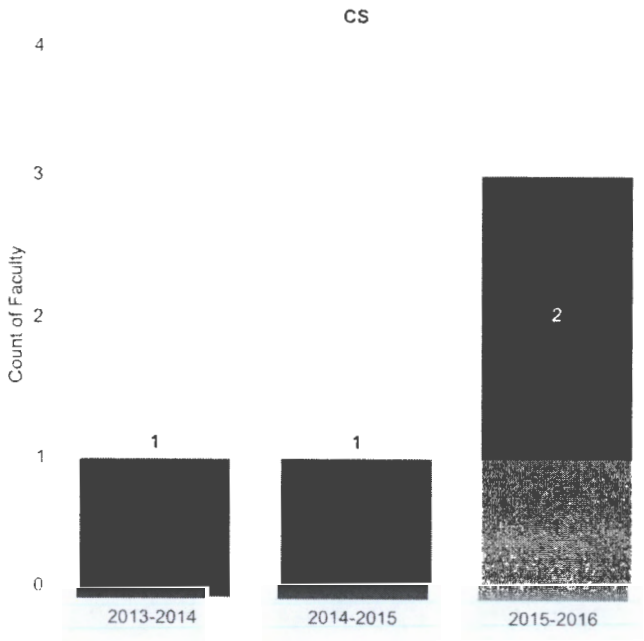
If multiple faculty teach the same course the TOTAL section count may not equal the SUM of sections shown

		Academic Year											
		2013-2014				2014-2015				2015-2016			
Subject_	Faculty Type	FTEF	Overload	Faculty	Sections	FTEF	Overload	Faculty	Sections	FTEF	Overload	Faculty	Sections
CS	Instructional - FT	2.71	1.20	1.00	16.00	2.91	1.34	1.00	18.00	3.40	1.74	2.00	22.00
	Instructional - PT									0.40	0.00	1.00	2.00
	Total	2.71	1.20	1.00	16.00	2.91	1.34	1.00	18.00	3.80	1.74	3.00	24.00
Grand Total		2.71	1.20	1.00	16.00	2.91	1.34	1.00	18.00	3.80	1.74	3.00	24.00

% of Total FTEF for CS and amount of Overload



Count of Faculty Type



All data provided within was gathered from publically available Tableau Reports. To get more information or investigate the data further you can access the reports at http://www.hancockcollege.edu/institutional_effectiveness/data.php.

For any further questions you can contact Armando Cortez at Armando.Cortez@hancockcollege.edu.

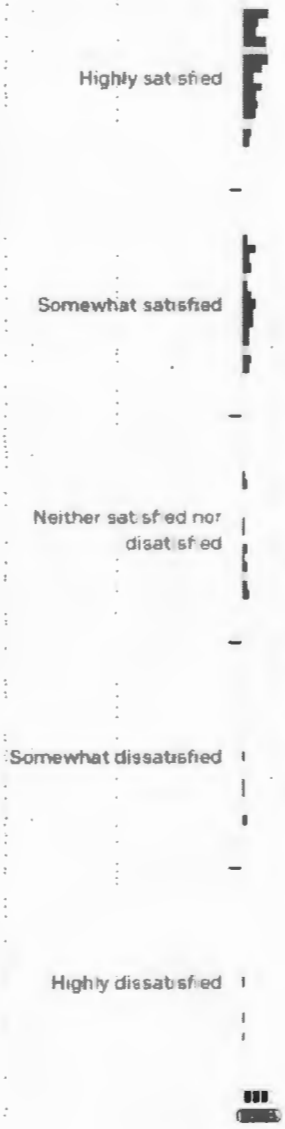
Part 3: Student Survey

Default Report

Program Review_Computer Science_2016

October 27th 2016, 9:19 am MDT

Q2 - Part I. Please indicate how satisfied you are, in general, with the following aspects of the Computer Science program.

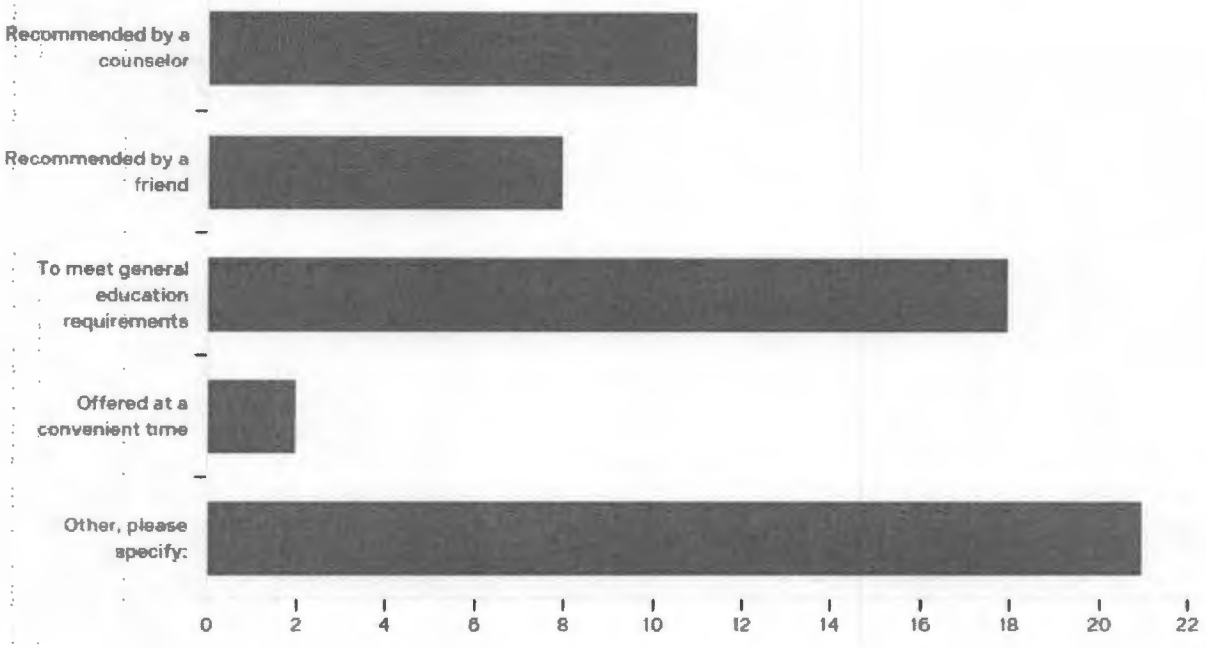


- Quality of instruction within the program
- The way textbooks and other materials used in courses within the program he...
- Advice about the program from counselors
- The way this program meets your educational goals
- Contribution towards your intellectual growth
- Clarity of course goals and learning objectives
- Feedback and assessment of progress towards learning objectives
- The availability of courses offered in the Computer Science program
- The content of courses offered in the Computer Science program
- The coordination of courses offered in the Computer Science program and cou...
- The physical facilities and space (e.g., classrooms, labs)
- Instructional equipment (e.g., computers, lab equipment)
- Presentation of classes via the college's Blackboard course management syst...
- Course assistance through tutorial services (e.g through the Tutorial Cente...
- Availability of appropriate resources in the libraries

Question	Highly satisfied		Somewhat satisfied		Neither satisfied nor disatisfied		Somewhat dissatisfied		Highly dissatisfied		Total
Quality of instruction within the program	80.00 %	48	18.33%	11	0.00%	0	0.00%	0	1.67%	1	60
The way textbooks and other materials used in courses within the program help me learn	46.67 %	28	41.67%	25	8.33%	5	1.67%	1	1.67%	1	60
Advice about the program from counselors	45.10 %	23	27.45%	14	21.57%	11	3.92%	2	1.96%	1	51
The way this program meets your educational goals	70.00 %	42	28.33%	17	0.00%	0	0.00%	0	1.67%	1	60
Contribution towards your intellectual growth	77.97 %	46	18.64%	11	1.69%	1	0.00%	0	1.69%	1	59
Clarity of course goals and learning objectives	80.00 %	48	18.33%	11	0.00%	0	0.00%	0	1.67%	1	60
Feedback and assessment of progress towards learning objectives	61.02 %	36	30.51%	18	6.78%	4	0.00%	0	1.69%	1	59
The availability of courses offered in the Computer Science program	33.90 %	20	38.98%	23	6.78%	4	11.86%	7	8.47%	5	59
The content of courses offered in the Computer Science program	58.62 %	34	34.48%	20	1.72%	1	3.45%	2	1.72%	1	58
The coordination of courses offered in the Computer Science program	43.33 %	26	36.67%	22	16.67%	10	0.00%	0	3.33%	2	60

and courses offered in other departments that may be required for your major											
The physical facilities and space (e.g., classrooms, labs)	50.85 %	30	23.73%	14	10.17%	6	10.17%	6	5.08%	3	59
Instructional equipment (e.g., computers, lab equipment)	44.07 %	26	23.73%	14	13.56%	8	11.86%	7	6.78%	4	59
Presentation of classes via the college's Blackboard course management system	41.18 %	21	29.41%	15	17.65%	9	5.88%	3	5.88%	3	51
Course assistance through tutorial services (e.g through the Tutorial Center, Math Lab, Writing Center)	34.62 %	18	32.69%	17	19.23%	10	5.77%	3	7.69%	4	52
Availability of appropriate resources in the libraries	30.00 %	15	26.00%	13	26.00%	13	16.00%	8	2.00%	1	50

Q4 - Which of the following best describes your reason for taking this and other courses in Computer Science program?



Answer	%	Count
Recommended by a counselor	18.33%	11
Recommended by a friend	13.33%	8
To meet general education requirements	30.00%	18
Offered at a convenient time	3.33%	2
Other, please specify:	35.00%	21
Total	100%	60

Other, please specify:

Other, please specify:

a love of computers and programming

Prepares me for a degree in C.S. and fulfills A.A. requirements

Personal interest/AA

Deciding if I want to do this for my major.

in addition to meeting the Gen Ed requirements i want to learn more about how computers work and the processes that go in behind the scenes

Degree in CS

Major requirements

Majoring in computer science

I like computer programming and want to get a degree in Computer Science

Degree in Computer Science

Personal Goal

im interested learning computer science

I want a degree in computer science

Part of my major

I have alwasy been interested.

I have interest in computer science as well as math

my major

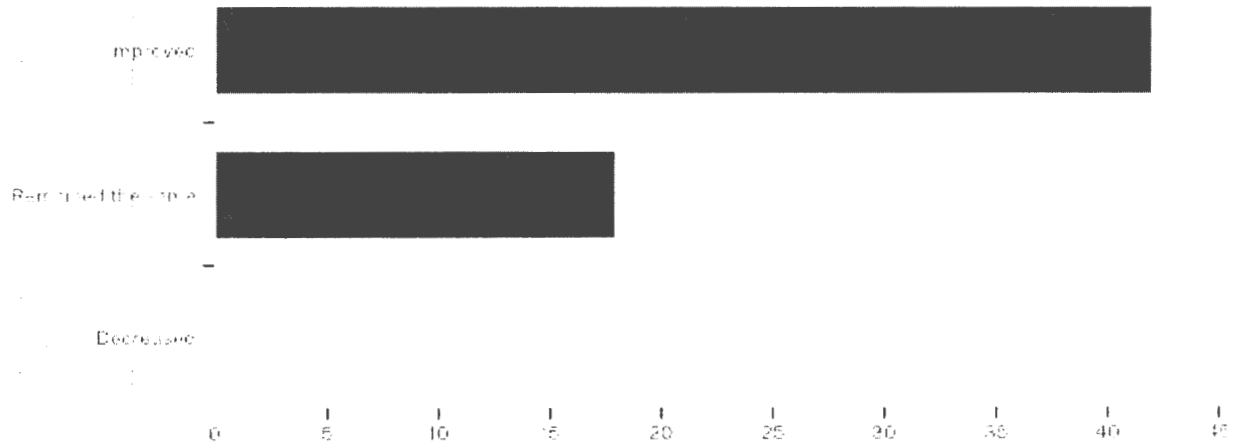
Major

needed for my major

meets education goals

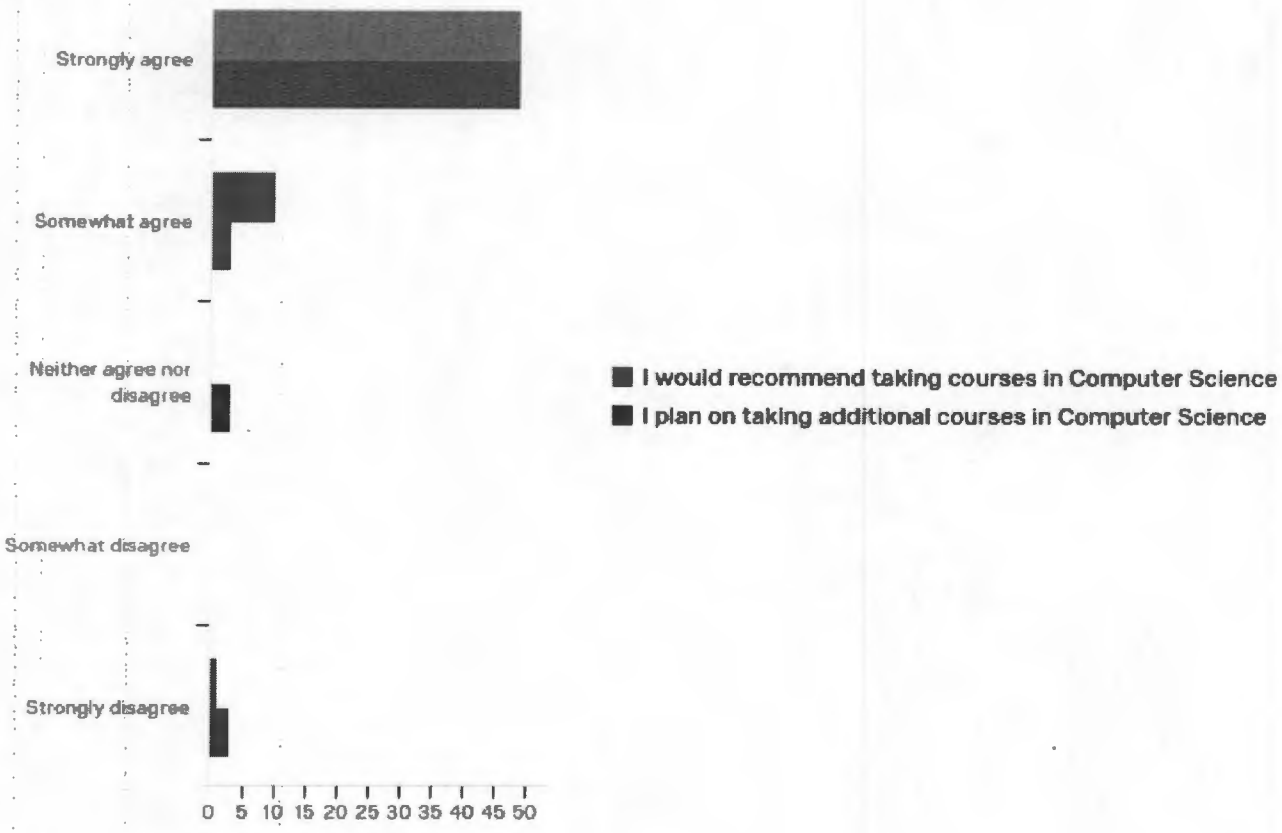
Wagner is awesome!

Q5 - Compared to the beginning of the semester, your attitude about Computer Science has



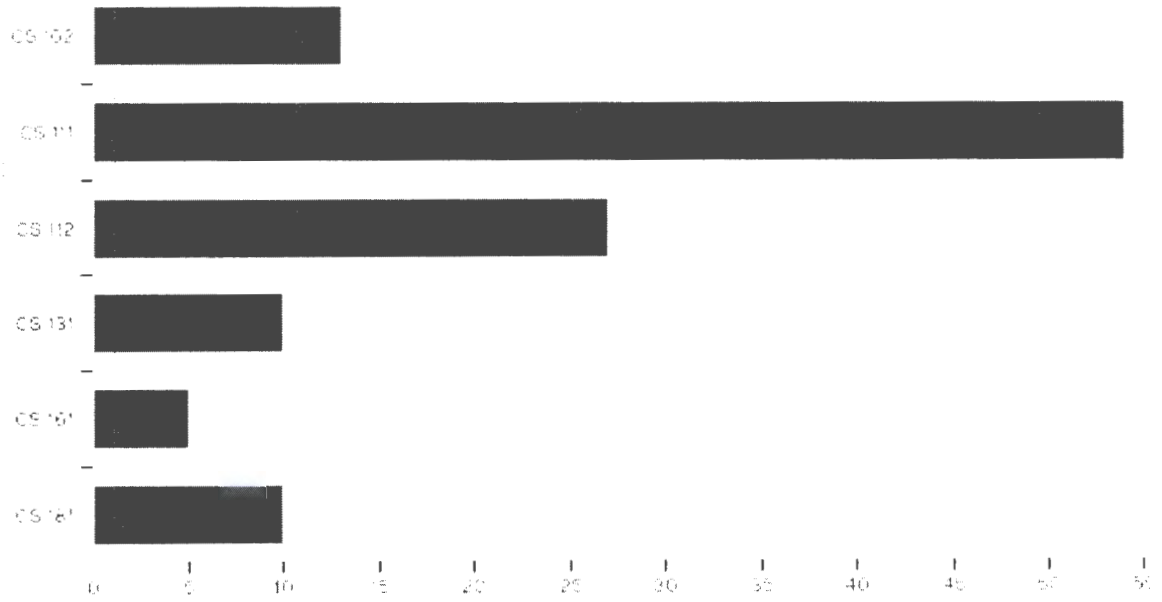
Answer	%	Count
Improved	70.00%	42
Remained the same	30.00%	18
Decreased	0.00%	0
Total	100%	60

Q6 - Please answer the following questions.



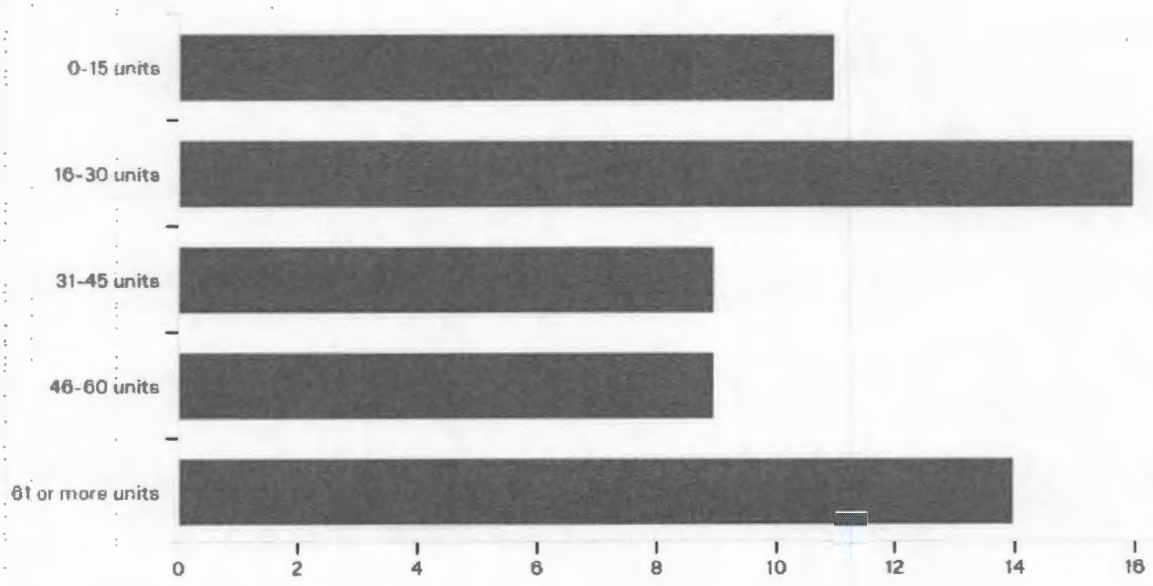
Question	Strongly agree		Somewhat agree		Neither agree nor disagree		Somewhat disagree		Strongly disagree		Total
I would recommend taking courses in Computer Science	81.67%	49	16.67%	10	0.00%	0	0.00%	0	1.67%	1	60
I plan on taking additional courses in Computer Science	84.48%	49	5.17%	3	5.17%	3	0.00%	0	5.17%	3	58

Q7 - Which of the following courses have you taken in Computer Science?



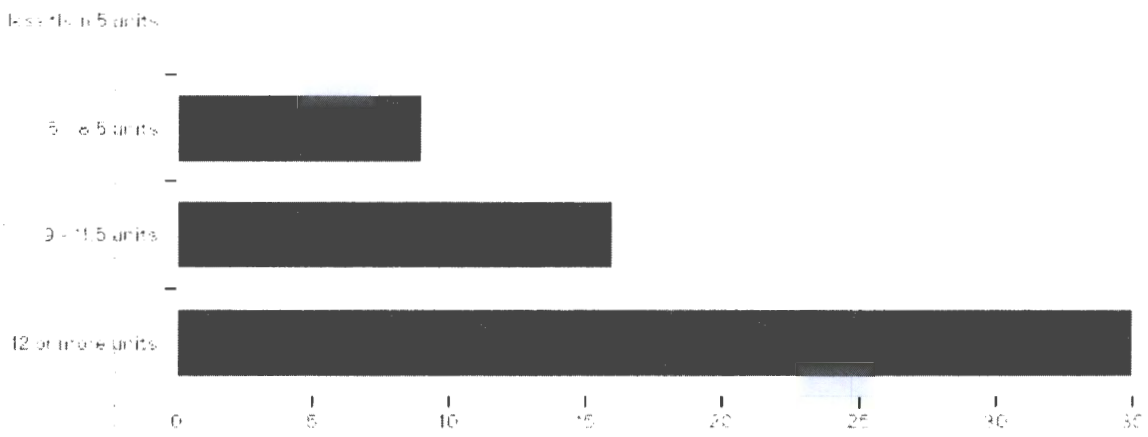
Answer	%	Count
CS 102	23.21%	13
CS 111	96.43%	54
CS 112	48.21%	27
CS 131	17.86%	10
CS 161	8.93%	5
CS 181	17.86%	10
Total	100%	56

Q9 - How many units have you completed prior to this semester?



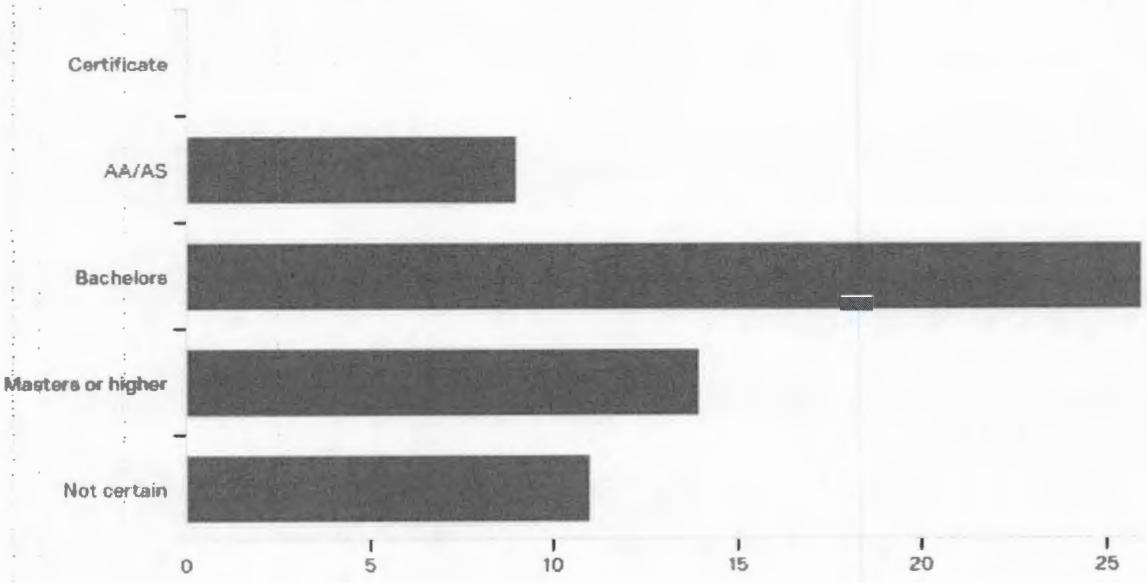
Answer	%	Count
0-15 units	18.64%	11
16-30 units	27.12%	16
31-45 units	15.25%	9
46-60 units	15.25%	9
61 or more units	23.73%	14
Total	100%	59

Q10 - In how many units are you currently enrolled?



Answer	%	Count
less than 5 units	0.00%	0
5 - 8.5 units	15.00%	9
9 - 11.5 units	26.67%	16
12 or more units	58.33%	35
Total	100%	60

Q11 - What is your final academic goal?



Answer	%	Count
Certificate	0.00%	0
AA/AS	15.00%	9
Bachelors	43.33%	26
Masters or higher	23.33%	14
Not certain	18.33%	11
Total	100%	60