

**Advising and Pre-Registration Notes and Information
Computer and Information Studies
2009 March 23**

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Computer Science Department
Planned Major-Level (CSC 200A and above) Course Offerings
Fall 2009 through Spring 2013

	Required Courses	Option Courses	Elective Courses
Spring 2009	CSC 200A, CSC 201J, CSC 202J, CSC 215, CSC 260, CSC 295, CSC 300, CSC 498, CSC 500	CSC 263, CSC 312A, CSC 330A	CSC 273
Summer 2009	CSC 200A, CSC 201J		
Fall 2009	CSC 200A, CSC 201J, CSC 202J, CSC 215, CSC 260, CSC 280, CSC 498, CSC 500, PHS 205	CSC 301, CSC 311, CSC 315A, CSC 390	
Spring 2010	CSC 200A, CSC 201J, CSC 202J, CSC 215, CSC 260, CSC 295, CSC 300, CSC 498, CSC 500	CSC 263, CSC 312A, CSC 445	CSC 273, CSC 325
Summer 2010	CSC 200A, CSC 201J		
Fall 2010	CSC 200A, CSC 201J, CSC 202J, CSC 215, CSC 260, CSC 280, CSC 498, CSC 500, PHS 205	CSC 230, CSC 271, CSC 311, CSC 475	CSC 340
Spring 2011	CSC 200A, CSC 201J, CSC 202J, CSC 215, CSC 260, CSC 295, CSC 300, CSC 498, CSC 500	CSC 263, CSC 312A, CSC 315A, CSC 330A	CSC 273
Summer 2011	CSC 200A, CSC 201J		
Fall 2011	CSC 200A, CSC 201J, CSC 202J, CSC 215, CSC 260, CSC 280, CSC 498, CSC 500, PHS 205	CSC 245A, CSC 301, CSC 311, CSC 390	CSC 325
Spring 2012	CSC 200A, CSC 201J, CSC 202J, CSC 215, CSC 260, CSC 295, CSC 300, CSC 498, CSC 500	CSC 263, CSC 312A, CSC 315A, CSC 445	CSC 273
Summer 2012	CSC 200A, CSC 201J		
Fall 2012	CSC 200A, CSC 201J, CSC 202J, CSC 215, CSC 260, CSC 280, CSC 498, CSC 500, PHS 205	CSC 230, CSC 271, CSC 311, CSC 475	CSC 340
Spring 2012	CSC 200A, CSC 201J, CSC 202J, CSC 215, CSC 260, CSC 295, CSC 300, CSC 498, CSC 500	CSC 263, CSC 312A, CSC 315A, CSC 330A	CSC 273

Keys: **Boldface** indicates courses required in the major ~~CSC xxx~~ course was scheduled but cancelled
COLORS indicate option sequences. Two courses of the same color form an option sequence.

Options:

Software Engineering: CSC 263 & CSC 301

Parallel Computing: CSC 245A & CSC 445

Embedded Systems: CSC 230 & CSC 330A

Computer Networking: CSC 315A & CSC 475

Computation Theory: CSC 290 & CSC 415

Object Oriented Methods: CSC 311 & CSC 312A

Computer Systems: 2 from CSC 271, CSC 315A, CSC 390

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List of courses and significant attributes (please see the Computer Science Department website (cs.salemstate.edu) for complete course description, topic list, bibliography, etc.)

Note: courses **required** within the Computer and Information Studies major are indicated in **bold** typeface

Course	Credits	Required Lab	Programming Load	Typically Offered	Language(s) / O.S. / Hardware
CSC 200A Survey of Computer Science I	3		minimal	Spring & Fall	
CSC 201J Software Design and Implementation I	4	✓	heavy	Spring & Fall	Java
CSC 202J Software Design and Implementation II	4	✓	heavy	Spring & Fall	Java
CSC 215 Survey of Computer Science II	3		minimal	Spring & Fall	
CSC 230 Real-Time Computer Interfaces	3		moderate	Fall, even years	
CSC 245A Computer Applications in Science & Mathematics	4	✓	moderate	Fall, odd years	Fortran
CSC 260 Data Structures & Algorithms	4	✓	heavy	Spring & Fall	Java
CSC 263 Database Systems	4	✓	moderate	Spring	Java, SQL (Oracle)
CSC 267 Internship in Computer Science	1-6		variable	Spring & Fall	
CSC 271 Introduction to Computer Systems	4	✓	moderate	Fall, even years	Linux, assembly, Perl
CSC 273 Advanced Applications of C	4	✓	heavy	Spring	C
CSC 280 Operating Systems	3		minimal	Fall	
CSC 290 Theory of Computation	3		minimal	sporadic	
CSC 295 Computer Architecture & Organization	3		minimal	Fall	Altera's Quartus II and DE2 board
CSC 300 Software Engineering I	4	✓	moderate	Spring	UML, Java, Modeling tools
CSC 301 Software Engineering II	4	✓	moderate to heavy	Fall 2008, then Fall, odd years	UML, Java, Modeling tools
CSC 311 Object Orientation & Problem Solving Strategies	4	✓	heavy	Fall	Visual C++
CSC 312A Human-Computer Interfaces	4	✓	moderate	Spring	VB.Net or C#
CSC 315A Principles of Data Communications	4	✓	minimal	Spring	C, Java, Linux, Windows XP
CSC 325 Advanced Programming Techniques	4	✓	heavy	Fall, odd years	C#
CSC 330A Microcomputing Systems	4	✓	moderate	Spring, odd years	
CSC 340 Artificial Intelligence	3		moderate	Fall, even years	
CSC 390 Compiler Construction	4	✓	heavy	Fall, odd years	
CSC 415 Analysis of Algorithms	3		minimal	sporadic	
CSC 445 Parallel Processing	4	✓	moderate	Spring, even years	Fortran or C++
CSC 475 Distributed Systems	4	✓	moderate	Fall, even years beginning 2008	C, Java, Linux, Windows XP
CSC 498 Project Design/Specification Practicum	1		minimal	Spring & Fall	
CSC 500 Directed Study in Computer Science I	3		heavy	Spring & Fall	
CSC 501 Directed Study in Computer Science II	3		heavy	Spring & Fall	

(Note: Staffing and enrollment issues may necessitate exceptions to the "typically offered" schedule presented above. The Computer Science Department makes every effort to keep to the schedule as presented)

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Computer and Information Studies Major Courses & Prerequisites

January 2010

COURSE	TITLE	PREREQUISITE
CSC 200A	SURVEY OF COMPUTER SCIENCE I	Basic Math competency requirement; knowledge of Windows, email, and word processing
CSC 201J	SOFTWARE DESIGN/PROGRAMMING I	High school algebra I, II; knowledge of Windows, email, and word processing
CSC 202J	SOFTWARE DESIGN/PROGRAMMING II	CSC 201J with a grade of C+ or higher
CSC 215	SURVEY OF COMPUTER SCIENCE II	CSC 200A with a grade of C+ or higher, and CSC 201J
CSC 230	REAL-TIME COMPUTER INTERFACES	CSC 202J and PHS 205
CSC 245A	COMPUTER APPLICATIONS IN SCIENCE AND MATHEMATICS	CSC 202J and MAT 221
CSC 260	DATA STRUCTURES AND ALGORITHMS	CSC 200A, and CSC 202J with a grade of C+ or higher
CSC 263	DATABASE SYSTEMS	CSC 202J
CSC 267	INTERNSHIP IN COMPUTER SCIENCE	CSC 260 and permission of Department Chairperson
CSC 271	INTRODUCTION TO COMPUTER SYSTEMS	CSC 202J
CSC 273	ADVANCED APPLICATIONS OF C	CSC 202J
CSC 280	OPERATING SYSTEM PRINCIPLES	CSC 260
CSC 290	THEORY OF COMPUTATION	CSC 260 and MAT 214A
CSC 295	COMPUTER ARCHITECTURE AND ORGANIZATION	CSC 202J with a grade of C+ or higher; CSC 215, PHS 205
CSC 300	SOFTWARE ENGINEERING I	CSC 202J and CSC 215
CSC 301	SOFTWARE ENGINEERING II	CSC 300; CSC 263 recommended
CSC 311	OBJECT ORIENTATION/PROBLEM SOLVING	CSC 260 with a grade of C+ or higher
CSC 312A	HUMAN-COMPUTER INTERFACES	CSC 260
CSC 315A	PRINCIPLES OF DATA COMMUNICATIONS	CSC 202J
CSC 325	ADVANCED PROGRAMMING TECHNIQUES	CSC 260 with a grade of C+ or higher
CSC 330A	MICROCOMPUTING SYSTEMS	CSC 200A and PHS 205
CSC 340	ARTIFICIAL INTELLIGENCE	CSC 215 and CSC 260
CSC 390	COMPILER CONSTRUCTION	CSC 260
CSC 415	ANALYSIS OF ALGORITHMS	CSC 260 and MAT 220 and at least one of the following: CSC 311, CSC 325, CSC 340, CSC 390
CSC 430	TOPICS IN COMPUTER SCIENCE	Topics and therefore Prerequisites vary
CSC 445	PARALLEL PROCESSING	CSC 202J and CSC 295
CSC 475	DISTRIBUTED SYSTEMS	CSC 280 and CSC 315A with a grade of C+ or higher
CSC 498	PROJECT SPECIFICATION & DESIGN PRACTICUM	CSC 260 and CSC 300 and permission of Department Chairperson
CSC 500	DIRECTED STUDY IN COMPUTER SCIENCE I	CSC 498; other prerequisites vary with the project

General advising notes to CSC majors:

☼ All students matriculating effective September 2006 or later must satisfy the following requirements. Note that these are "general education" requirements and as such must be satisfied by all majors.

- Writing (W), automatically satisfied via the required major course CSC 300.
- Quantitative (Q), automatically satisfied via the required support course MAT 247.
- Diversity (V). Courses that satisfy the Diversity requirement are indicated with a "V" in the College catalog and in the schedule of available courses. The list of courses that satisfy this requirement is expected to expand over time - check the College website and the schedule of available courses for choices during advising and registration.

☼ All students matriculating effective September 2007 or later must satisfy the following requirements. Note that these are "general education" requirements and as such must be satisfied by all majors.

- The minimum number of credits required to graduate will be 120 (the requirement used to be 127).
- The total number of Distribution Elective credits will be 15 (the requirement used to be 18)

(Note: students whose declaration of the CIS major was effective prior to the preceding dates may *choose* to change to a later flowsheet. **STUDENTS CONSIDERING THIS CHANGE SHOULD CONSIDER THE CONSEQUENCES CAREFULLY BEFORE CHANGING.** A more detailed discussion can be found [here](#)).

☼ The **specific courses that you must take to complete the major in Computer and Information Studies are determined by the date on which you were matriculated (formally accepted) into the major.** Changes in major requirements after that date do *not* affect your requirements, except for the case where a required course is no longer offered. If there is a course that you are required to take and that course is no longer offered *under the original course number*, please *check with your advisor* to determine the appropriate substitute – there should always be a clear substitution (e.g., CSC 300 for CSC 266).

☼ A typical Computer and Information Studies course load for students in their first semester as a major will consist of CSC 200A, CSC 201J, a Mathematics support course, and two additional courses that address College Core requirements (the left side of the flow sheet). A detailed semester-by-semester schedule of suggested courses can be found [here](#).

☼ A typical Computer Science Department course load for students in their second semester as a major will consist of CSC 202J, CSC 215, a Mathematics support course, and two additional courses that address College Core requirements.

☼ Transfer students who are admitted to the major and bring more than thirty transfer credits with them should consult with the department chairperson during orientation, or with their Computer Science faculty advisor (typically assigned two weeks into the first semester in the major), in order to minimize scheduling bottlenecks and to insure appropriate progress through the major. **FAILURE TO PROPERLY PLAN FUTURE SCHEDULES BASED ON PROJECTED COURSE AVAILABILITY IS LIKELY TO RESULT IN SIGNIFICANT DELAYS IN GRADUATION.**

☼ Sophomores should take CSC 260 and PHS 205 in the Fall. CSC 260 is a prerequisite for many CSC courses numbered above it, so it is very important that this course be completed in a timely fashion. Note that CSC 260 involves a large amount of programming. PHS 205 is a prerequisite for CSC 295, which is a required course and which should be taken in the Spring of the Sophomore year. In addition, at

least one Math support course should be taken, along with two additional College Core courses (one of which should be the first semester of a lab sequence).

⊛ Note that CSC 260 is sometimes offered during the summer - many students take CSC 260 during the Summer in order to accelerate their graduation date and/or to permit upper-level courses to be spread across another semester. Students who pursue this path should consult with their advisor as to the appropriate replacement for CSC 260 in their Fall Sophomore schedule.

⊛ Sophomores should take **both** CSC 300 **and** CSC 295 in the Spring (assuming that CSC 260 has been completed in the Fall); if you can take only one, consult with your advisor as to which should take precedence. Note that CSC 300 involves significant lab time and some programming, while CSC 295 is primarily a theory course: the workload of taking both courses in the same semester should be manageable. In addition, at least one Math support course should be taken, along with two additional College Core courses (one of which should be the second semester of a lab sequence).

⊛ Students should talk to their advisor about selecting an Option sequence in the semester in which they take CSC 260, and should have determined their selection by the end of the following semester. Note that most Option sequences involve at least one course that runs only in alternating years: early planning and selection of the Option sequence can help to avoid being unable to complete a preferred Option selection, or being forced to complete the preferred choice during the Senior year and therefore being unable to incorporate the topic area into the required Directed Study project. [Return to Top](#)

⊛ The following Option sequences are available (faculty with the greatest involvement are listed in parentheses – contact this individual if you have detailed questions about topics, course format, etc.):

- Software Engineering (Kasprzyk): CSC 263 Database Systems and CSC 301 Software Engineering II
- Computer Networking (Hatfield): CSC 315A Principles of Data Communications and CSC 475 Distributed Computing
- Embedded Systems (Klausewitz): CSC 230 Real-Time Computer Interfaces and CSC 330A Microcomputing Systems
- Object-Oriented Methods (any): CSC 311 Object-Orientation and Problem Solving Strategies and CSC 312A Human-Computer Interfaces
- Parallel Computing (Klausewitz): CSC 245A Computer Applications in Science and Mathematics and CSC 445 Parallel Processing
- Computation Theory (department chairperson): CSC 290 Theory of Computation and CSC 415 Analysis of Algorithms
- Computer Systems (Hatfield): *two* from CSC 271 Introduction to Computer Systems, CSC 315A Principles of Data Communications, CSC 390 Compiler Construction

These Option sequences are open to students regardless of date of matriculation. For information regarding the content and applicability of a specific Option sequence please see your advisor and/or the faculty member listed next to the Option.

⊛ Any course listed as part of an Options Sequence can be used as a major elective, providing the course is not being used to satisfy any other major requirements (for example, if you choose the Computer Networking Option and thus take CSC 315A and CSC 475, you cannot list either a second time on your flow sheet as major electives - you *could* take CSC 311, CSC 312A, CSC 245A, etc. as major elective(s), since they are not part of this specific option).

⊛ All students must take a “second language” course (the language introduced in CSC 201J, Java, is considered the first) - the current choices are CSC 245A (Fortran), CSC 271 (Perl), CSC 273 (C), CSC

311 (C++), CSC 312A (Visual Basic or C#), CSC 325 (C#). **Note that if CSC 245A, CSC 311 or CSC 312A is taken as part of an Option sequence, it can be used as the second language course.**

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✧ Certain courses within the curriculum have a very heavy programming component - scheduling two or more of these courses in a single semester has a high potential for causing significant problems with time management. Spreading these courses out to distribute the time load is preferable: if time constraints or course availability dictate otherwise, students should consult with their advisor about the most appropriate combinations. Note that, aside from the required CSC 201J/202J/260 sequence, most students take no more than two or three out of the remaining heavy programming courses: if you take CSC 260 during the first semester of your sophomore year, the remaining heavy programming courses can be spread across the remaining five semesters so that no two need be taken in the same semester.

Courses with very heavy programming components (required courses are presented in **bold** typeface):
CSC 201J, CSC 202J, CSC 260, CSC 273, CSC 311, CSC 325, CSC 390, CSC 500.

Courses with moderate programming components (required courses are presented in **bold** typeface):
CSC 230, CSC 245A, CSC 263, CSC 271, **CSC 300**, CSC 301, CSC 312A, CSC 330A, CSC 340, CSC 445.

Courses that are predominantly theoretical (minimal programming or the programming is logically simple) (required courses are presented in **bold** typeface):

CSC 200A, CSC 215, CSC 280, CSC 290, CSC 295, CSC 315A, CSC 415, CSC 498.

✧ A number of non-CSC courses are required in the CIS major - these are formally called "support courses".

- Mathematics (5 courses total):
 - MAT 214A, MAT 220, MAT 221, and MAT 247
 - one (1) from among MAT 304A, MAT 308, MAT 316, and MAT 323
- Science (4 courses total):
 - PHS 205
 - a two-semester lab sequence, chosen from: BIO 131&132, CHE 130&131, CHE 130&212, PHS 211A&212A, PHS 221&222, GLS 100&201
 - one *additional* Science course, chosen from: BIO 131, CHE 130, CHE 212, GGR 101P, GLS 100, GLS 201, PHS 211A, PHS 221.

✧ Support courses can *also* be used to satisfy general curriculum requirements, but it is important to note that *while using one course to fulfill two requirements is legal and encouraged, it does **not** reduce the total number of credits required to graduate from Salem State College.* Note that this *does* allow for more options in selecting courses. For example, if required Mathematics support courses are also used to satisfy the College Division II Distribution Electives requirement *and* a specified lab sequence is also used to satisfy the College Lab Sequence requirement, you have 16 more credits of free electives (electives with *no* restrictions as to course content or categorization). Thus, "double counting" courses does *not* change total credit requirements for graduation, but it *does* provide for more flexibility in selecting elective courses.

✧ The required Mathematics support courses satisfy most of the requirements of a Mathematics minor (MAT 220, MAT 221, and three additional MAT courses from a list of MAT 214A, MAT 247, and all MAT courses numbered 300 or higher, with at least two of the electives 300 level or higher). Taking one 300-level MAT course beyond the required support courses will complete a Mathematic minor. Note that a minor is declared by filling out a form available from the Registrar's Office. [Return to Top](#)

✧ The Salem State College Curriculum Committee limits the maximum number of credits within a department that can be taken for graduation credit to 55 - this limit applies to all departments and all majors. The current flowsheet requirements for the Computer and Information Studies major requires a *minimum* of 45 credits, but most students end up taking closer to 49 credits, given that many option courses and most popular major electives are 4 credits per course. This means that many majors can take *one* (1) CSC course beyond those required to fulfill major requirements. If additional credits beyond 55 are enrolled in, the extra credits and courses will appear on the student transcript, but any credits above 55 will *not* count towards the number of credits required for graduation.

✧ CSC 498 and CSC 500 should be thought of as a particularly strongly-integrated course sequence. In CSC 498 the student describes, in detail, what he/she will implement in CSC 500. CSC 498 is a one-credit course during which the student selects a topic area for her/his required CSC 500 project and develops a formal proposal: the proposal describes in detail the objectives of the project, the tools to be used, and any benchmarks that must be achieved during the implementation of the project. Any faculty member supporting the Computer and Information Studies major may be approached to serve as the supervisor for the CSC 498 / CSC 500 sequence. Students should talk to potential supervisors *early* in the semester prior to the semester in which they plan to actually register for CSC 498; ideally, students will begin thinking about potential projects during their junior year and talk to faculty during that time period. CSC 498 must be completed (that is, the project proposal must be complete and approved) with a passing grade before CSC 500 can be registered for, therefore, CSC 498 and CSC 500 may *not* be taken in the same semester.

✧ CSC 498 and CSC 500 are available on a Directed Study basis every Fall and Spring semester; arrangements can sometimes be made to take these courses during the Summer, but only with careful planning and the consent of the faculty member involved. CSC 498 and CSC 500 do not meet at formally scheduled times: arrangements are made between the student and a faculty supervisor on a case-by-case basis. It is the *student's* responsibility to initiate contact with potential project supervisors, and it is the *student's* responsibility to complete the paperwork necessary to register for CSC 498 and CSC 500. This paperwork consists of a specific form that must be signed by the student, the faculty member supervising the course, and the Computer Science Department chairperson: the completed form should be submitted to the Registrar's Office during the first week of classes.

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✧ Students who are matriculated in the CSC major *may, at their discretion*, request to switch their graduation requirements to those on a flowsheet with a *more recent* effective date than the one in effect when they were accepted into the major. For example, a student who matriculated in September 2004 may request to graduate under the flowsheet in effect in September 2006, or September 2007, but not September 2002 or earlier. Students who wish to switch to a flowsheet with a more recent effective date should:

- Discuss the advisability of such a change with his or her academic advisor, and must then make this request *in writing* to the advisor, stating the effective date of the more recent flowsheet desired

- Note that once a switch is made, it *cannot be reversed*. This means that it is **very** important to understand **all** of the ramifications of changing flowsheets *before* a switch is made.

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A listserv for Computer and Information Studies majors and minors has been set up and may be subscribed to by going to either of the following addresses:

<http://listserv.salemstate.edu/cgi-bin/lyris.pl?enter=cscmajors> (direct link to listserv page)

or

<http://cs.salemstate.edu> (scroll down through the "items of interest" list)

Click *Join cscmajors*, fill in your full name and email address, select a password, and click *save* - that's all there is to it. Listserv members will receive notice of items of relevance to students in the Computer and Information Studies program: upcoming advising / registration dates, notice of added and cancelled courses and changes in scheduled courses, advising notes (including this notice, delivered to your computer's front door at least twice a year!), and notice of potential internships and employment opportunities. Hopefully, this will be a useful resource - but it's available *only* if you visit the address given above and join!

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**Standard Computer and Information Studies Curriculum Plan:
Matriculated with good problem-solving skills - Freshman and Sophomore Years**

Year Semester	Course (Dept., Number, Title)	Category (credit hours)					
		Computer Science Core	Computer Science Advanced	Math	Science	General Education	Other
First Semester Freshman Year	CSC 200A Survey of Computer Science I	3.0					
	CSC 201J Software Design & Programming I	4.0					
	MAT 110 Precalculus §						3.0
	ENG 101 English Composition I					3.0	
	HIS 101 History of World Civilization I					3.0	
	SFL activity (physical education activity)					0.5	
Total	5 courses, 13.5 credits Ψ	7.0	0.0	0.0	0.0	6.5	0.0
Second Semester Freshman Year	CSC 202J Software Design & Programming II	4.0					
	CSC 215 Survey of Computer Science II	4.0					
	ENG 102 English Composition II					3.0	
	HIS 102 History of World Civilization II					3.0	
	MAT 220 Calculus I			4.0			
	SFL activity (physical education activity)					0.5	
Total	6 courses, 18.5 credits Ψ	8.0	0.0	4.0	0.0	6.5	0.0
First Semester Sophomore Year	CSC 260 Data Structures & Algorithms	4.0					
	MAT 221 Calculus II			4.0			
	PHS 205 Digital Circuit Design						4.0
	Lab Science Sequence Part 1				4.0		
	SPC 101 Speech					3.0	
Total	5 courses, 19.0 credits Ψ	4.0	0.0	4.0	4.0	3.0	4.0
Second Semester Sophomore Year	CSC 300 Software Engineering I	4.0					
	CSC 295 Computer Organization & Architecture	3.0					
	Lab Science Sequence Part 2				4.0		
	SMS 194 Health					3.0	
	MAT 214A Discrete Structures			4.0			
Total	5 courses, 18.0 credits Ψ	7.0	0.0	4.0	4.0	3.0	0.0
SUB-TOTALS, Years 1 & 2	32 + 37 = 69 credits	26.0	0.0	12.0	8.0	19.0	4.0

§ MAT 110 Precalculus is the appropriate entry-level Mathematics course for many Computer and Information Studies majors, but is *not* a required course. If your background permits, MAT 110 can be skipped, with MAT 220 Calculus I being taken in its place. If you are unsure as to whether to take MAT 110, please consult with the Chairperson of the Mathematics Department and/or with your advisor in the Computer Science Department. Taking MAT 110 will reduce the number of free elective credits by 3.

Ψ Students may take Summer semester courses as a means of either accelerating the date of graduation or of lightening the credit load during Fall/Spring semesters. Note that most General Education requirements and some Mathematics Support courses are available during the Summer semester. The availability of Computer Science courses during the Summer semester is generally limited to CSC 200A and CSC 201J, with CSC 202J, CSC 215 and CSC 260 offered occasionally.

Standard Computer and Information Studies Curriculum Plan:
Matriculated with good problem-solving skills - Junior and Senior Years

Year Semester	Course (Dept., Number, Title)	Category (credit hours)					
		Computer Science Core	Computer Science Advanced	Math	Science	General Education	Other
First Semester Junior Year	CSC 280 Operating System Principles	3.0					
	CSC elective / option		4.0				
	MAT elective (typically Modern Algebra, Linear Programming or Calculus III)			3.0			
	Literature Sequence Part 1					3.0	
Totals	4 courses, 13.0 credits	3.0	4.0	3.0	0.0	3.0	0.0
Second Semester Junior Year	CSC elective / option		4.0				
	CSC elective / option		3.0				
	Literature Sequence Part 2					3.0	
	MAT 247 Statistics			3.0			
Totals	4 courses, 13.0 credits	0.0	7.0	3.0	0.0	3.0	
First Semester Senior Year	CSC 498 Software Practicum (specification for the capstone project implemented in CSC 500)	1.0					
	CSC elective / option		4.0				
	Division elective I or III					3.0	
	Science elective free elective				4.0		3.0
Totals	4 courses, 15.0 credits	1.0	4.0	0.0	4.0	3.0	3.0
Second Semester Senior Year	CSC 500 Directed Study in Computer Science (capstone project)	3.0					
	Division elective I or III					3.0	
	CSC elective / option		4.0				
Totals	4 courses, 11-13 credits	3.0	4.0	0.0	0.0	3.0	0.0
SUB-TOTALS, Years 3 & 4	51.0 credits	7.0	19.0	6.0	4.0	12.0	3.0
SUB-TOTALS, Years 1 & 2	69.0 credits	26.0	0.0	12.0	6-8	19.0	7.0
TOTALS	120.0 credits minimum	33.0	19.0	18.0	9-12	34.0	10.0

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**Alternate Computer and Information Studies Curriculum Plan:
Matriculated under-prepared in problem solving skills - Freshman and Sophomore Years**

Year Semester	Course (Dept., Number, Title)	Category (credit hours)					
		Computer Science Core	Computer Science Advanced	Math	Science	General Education	Other
First Semester Freshman Year	CSC 200A Survey of Computer Science I	3.0					
	CSC 190 PreProgramming	0.0					3.0
	MAT 110 Precalculus §						3.0
	ENG 101 English Composition I					3.0	
	HIS 101 History of World Civilization I					3.0	
	SFL activity (physical education activity)					0.5	
Total	5 courses, 12.5 credits Ψ	3.0	0.0	0.0	0.0	6.5	3.0
Second Semester Freshman Year	CSC 201J Software Design & Programming I	4.0					
	MAT 220 Calculus I			4.0			
	ENG 102 English Composition II					3.0	
	HIS 102 History of World Civilization II					3.0	
	CSC 215 Survey of Computer Science II	4.0					
	SFL activity (physical education activity)					0.5	
Total	5 courses, 18.5 credits Ψ	8.0	0.0	4.0	0.0	6.5	0.0
First Semester Sophomore Year	CSC 202J Software Design & Programming II	4.0					
	MAT 221 Calculus II			4.0			
	PHS 205 Digital Circuit Design						4.0
	Lab Science Sequence Part 1				4.0		
	SPC 101 Speech					3.0	
Total	5 courses, 19.0 credits Ψ	4.0	0.0	4.0	4.0	3.0	4.0
Second Semester Sophomore Year	CSC 260 Data Structures & Algorithms	4.0					
	CSC 295 Computer Organization & Architecture	3.0					
	Lab Science Sequence Part 2				4.0		
	SMS 194 Health					3.0	
	MAT 214A Discrete Structures			4.0			
Total	5 courses, 18.0 credits Ψ	7.0	0.0	4.0	4.0	3.0	0.0
SUB-TOTALS, Years 1 & 2	31 + 37 = 68 credits	22.0	0.0	12.0	8.0	19.0	7.0

§ MAT 110 Precalculus is the appropriate entry-level Mathematics course for many Computer and Information Studies majors, but is *not* a required course. If your background permits, MAT 110 can be skipped, with MAT 220 Calculus I being taken in its place. If you are unsure as to whether to take MAT 110, please consult with the Chairperson of the Mathematics Department and/or with your advisor in the Computer Science Department. Taking MAT 110 will reduce the number of free elective credits by 3.

Ψ Students may take Summer semester courses as a means of either accelerating the date of graduation or of lightening the credit load during Fall/Spring semesters. Note that most General Education requirements and some Mathematics Support courses are available during the Summer semester. The availability of Computer Science courses during the Summer semester is generally limited to CSC 200A and CSC 201J, with CSC 202J, CSC 215 and CSC 260 offered occasionally.

**Alternate Computer and Information Studies Curriculum Plan:
Matriculated under-prepared in problem solving skills - Junior and Senior Years**

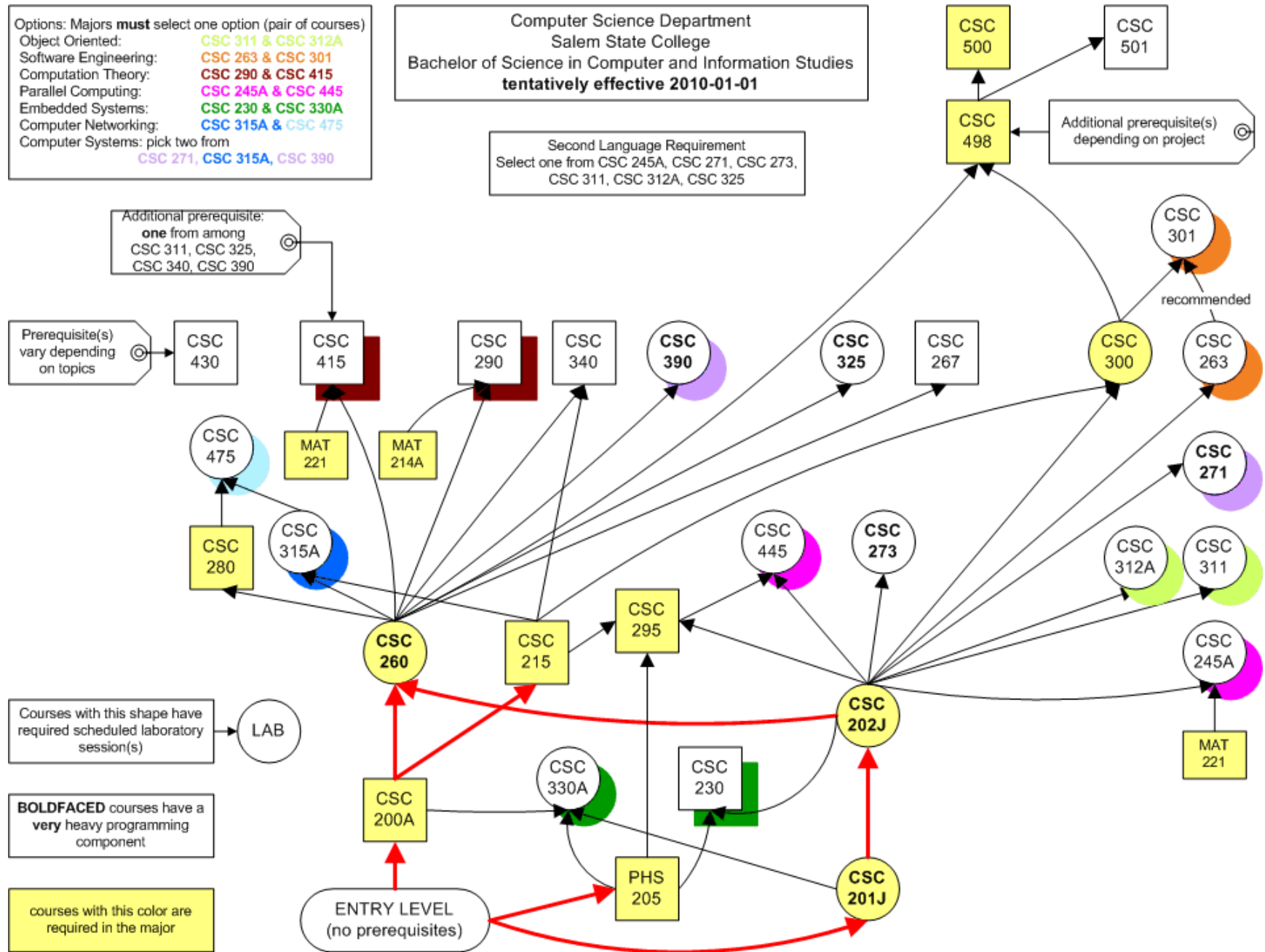
Year Semester	Course (Dept., Number, Title)	Category (credit hours)					
		Computer Science Core	Computer Science Advanced	Math	Science	General Education	Other
First Semester Junior Year	CSC 280 Operating System Principles	3.0					
	CSC elective / option		4.0				
	MAT elective (typically Modern Algebra, Linear Programming or Calculus III)			3.0			
	Literature Sequence Part 1					3.0	
	Totals	4 courses, 13.0 credits	3.0	4.0	3.0	0.0	3.0
Second Semester Junior Year	CSC 300 Software Engineering I	4.0					
	CSC elective / option		3.0				
	Literature Sequence Part 2					3.0	
	MAT 247 Statistics			3.0			
	Totals	4 courses, 13.0 credits	4.0	3.0	3.0	0.0	3.0
First Semester Senior Year	CSC 498 Software Practicum (specification for the capstone project implemented in CSC 500)	1.0					
	CSC elective / option		4.0				
	CSC elective / option		3.0				
	Division elective I or III					3.0	
	Science elective				4.0		
Totals	5 courses, 15.0 credits	1.0	7.0	0.0	4.0	6.0	0.0
Second Semester Senior Year	CSC 500 Directed Study in Computer Science (capstone project)	3.0					
	Division elective I or III					3.0	
	CSC elective / option		4.0				
	free elective						1-3
	Totals	4 courses, 11.0-13.0 credits	3.0	4.0	0.0	0.0	3.0
SUB-TOTALS, Years 3 & 4	52.0-54.0 credits	11.0	18.0	6.0	4.0	12.0	1-3
SUB-TOTALS, Years 1 & 2	68.0 credits	22.0	0.0	12.0	8.0	19.0	7.0
TOTALS	120.0 credits minimum	33.0	18.0	18.0	12.0	37.0	8-10

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Options: Majors **must** select one option (pair of courses)
 Object Oriented: **CSC 311 & CSC 312A**
 Software Engineering: **CSC 263 & CSC 301**
 Computation Theory: **CSC 290 & CSC 415**
 Parallel Computing: **CSC 245A & CSC 445**
 Embedded Systems: **CSC 230 & CSC 330A**
 Computer Networking: **CSC 315A & CSC 475**
 Computer Systems: pick two from
CSC 271, CSC 315A, CSC 390

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Second Language Requirement
 Select one from CSC 245A, CSC 271, CSC 273,
 CSC 311, CSC 312A, CSC 325



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