Schedules for a CS major or minor

CS Major

W&M Computer Science prerequisite chart

Perquisite chart from

http://www.wm.edu/as/computerscience/
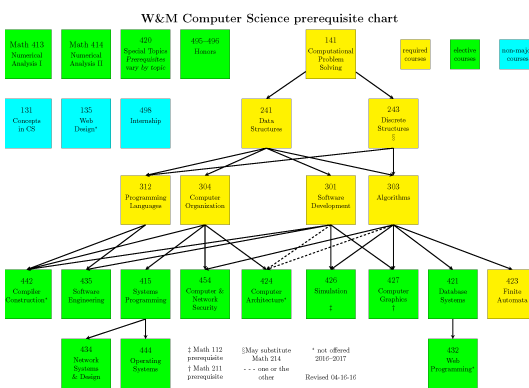
The CS major asks you to fulfill a number of requirements.

Required classes:

- CS 141, CS 241, CS 243, CS 301, CS 303, CS 304, Cs 312, Cs 423

- 4 Electives on the 400-level classes

- Math proficiency: Math 111, Math 112, Math 211

- Writing requirement: CS 423W(common choice), Honors thesis (rare choice)

- Possible substitution: Math 214 for CS 243

The prerequisites for individual classes create a number of constraints on how to order this classes. The prerequisite chart from http://www.wm.edu/as/computerscience/undergraduate/courses/prerequisite/index.php

visualizes this quite handily.

About possible workloads

- 2 CS courses per semester: reasonable and common

- 3 CS courses per semester: a lot of work but doable

- 4 CS courses per semester: not recommended, sometimes students have to do this for their final semester and survive but often take a hit on their grades.

CS Major: typical schedule for students starting in their first year. Total time: 7 semesters

Following the prerequisites, a typical schedule of classes for a CS major with a common workload of two CS courses per semester is this:

- Semester 1: CS 141, Math 111

- Semester 2: CS 241, CS 243, Math 112

- Semester 3: 2 of the 300 level classes, e.g. CS 301, CS 303, Math 211

- Semester 4: 2 of the remaining 300 level classes, e.g. CS 304 and CS 312

- Semester 5: CS 423W and 1 400 level CS elective course, e.g. CS 415

- Semester 6: 2 400 level CS elective courses, e.g. CS 435, CS 454

- Semester 7: 1 400 level CS elective courses, e.g. CS 421

Please note:

- The Math courses have a sequence based on their prerequisites but there is no particular reason to start that sequence in semester 1. You can do this later as well or spread them out over more semesters. There is only one CS course (CS 426) with an explicit prerequisite for Math 112, one (CS 427) with a prerequisite for Math 211. However, the understanding is that students are familiar with basic math concepts as taught in the math classes, so pushing the math courses to the very end of the schedule is not a good idea.

- For CS 423, there is no particular reason to take it in Semester 5, you could switch places of CS 423 and a CS 400 level elective in that schedule without problems.

- CS courses that are required are offered each semester with the exception of CS 301, which is offered in the fall and summer.

So the schedule above assumes that you have seven semesters left before graduation. If for some reason you are closer to graduation, you can shorten the schedule in various ways. The following scenarios are based on a few basic options:

1. Summer classes taken at William and Mary or elsewhere

2. More than two CS courses per semester

Options for summer classes vary each year. The following scenarios are based on offerings for summer 2017. At the time of writing this text, options are:

Summer 2017: Session I

- CS 141 Tim Davis 10 am-12 pm, CS 141 lab 1-3 pm

- CS 241 Jim Deverick 10 am-12 pm

- CS 301 Peter Kemper 10 am-12 pm

- CS 303 Tim Davis 8 am-10 am

- CS 420 Peter Kemper 2.30-4.30 pm

plus the following online versions of courses which do not require students to be present in Williamsburg over the summer.

- CS 241 Jim Deverick online

- CS 301 Peter Kemper online

Summer 2017: Session II

- CS 141 Tim Davis 10 am-12 pm, CS 141 lab 1-3 pm

- CS 243 Tim Davis 8 am-10 am

Let's look into some possible scenarios.

If you can start with CS classes in the summer, then this could be your schedule (please add Math 111, 112, 211 as needed):

- Summer Session 1 or 2: CS 141

- Semester 1: CS 241, CS 243

- Semester 2: 2 of the 300 level classes, e.g. CS 301, CS 303

- Semester 3: 2 of the remaining 300 level classes, e.g. CS 304 and CS 3012

- Semester 4: CS 423W and 1 400 level CS elective course, e.g. CS 415,

- Semester 5: 3 400 level CS elective courses, e.g. CS 421, CS 435, CS 454

If you can start with CS classes in the fall, then this could be your schedule (please add Math 111, 112, 211 as needed):

- Semester 1: CS 141

- Semester 2: CS 241, CS 243

- Summer Session 1: CS 301 or 303

- Semester 3: the remaining 3 300 level classes

- Semester 4: 2 400 level CS elective courses, e.g. CS 435, CS 454

- Semester 5: CS 423W and 1 400 level CS elective courses, e.g. CS 421

If you can start with CS classes in the spring, then this could be your schedule (please add Math 111, 112, 211 as needed):

- Semester 1: CS 141

- Summer Session 1: CS 241

- Summer Session 2: CS 243

- Semester 2: 2 of the 300 level classes, e.g. CS 301, CS 304

- Semester 3: the remaining 300 level class and CS 423W

- Semester 4: 2 400 level CS elective courses, e.g. CS 435, CS 454

- Semester 5: 2 400 level CS elective courses, e.g. CS 435, CS 454

From past experience, students are able to do three CS courses per semester, which usually implies a stressful workload that is still doable with good grades. When it comes to four CS courses, this is really extreme and students sometimes opt for it if there is only one semester left before graduation. Please consider this as a last fallback option.

This scenario works without summer classes and packs more CS courses into a single semester (please add Math 111, 112, 211 as needed):

- Semester 1: CS 141

- Semester 2: CS 241, CS 243

- Semester 3: 3 of the 300 level classes, e.g. CS 301, CS 303, CS 304

- Semester 4: 1 300 level class + 2 400 level classes, e.g. CS 312, CS 423W, and CS 424

- Semester 5: 3 400 level CS elective courses, e.g. CS 421, CS 435, CS 454

This scenario works with summer classes and packs more CS courses into a single semester (please add Math 111, 112, 211 as needed). Warning: this is the shortest possible, but also a really high workload schedule:

- Summer Sessions 1 &2: CS 141, CS 241, CS 243. Note: with offerings in summer 2017, CS 141 and 241 are both in the first session which is not recommended and requires instructor permission.

- Semester 1: 3 of the 300 level classes, e.g. CS 301, CS 303, CS 304

- Semester 2: 1 300 level class + 2 400 level classes, e.g. CS 312, CS 423W, and CS 424

- Semester 3: 3 400 level CS elective courses, e.g. CS 421, CS 435, CS 454
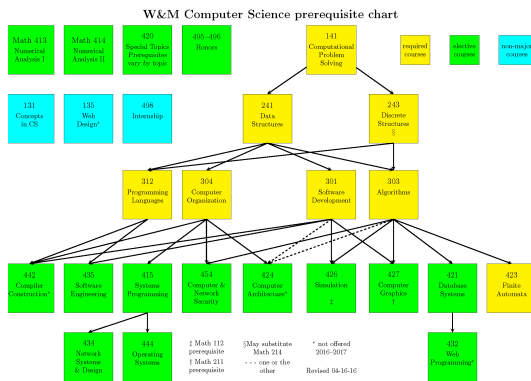
CS Major: extremely tight schedule towards graduation, packed, but no summer classes. Total time: 5 semesters

CS Major: extremely tight schedule towards graduation starting in summer, 3 CS courses per semester. Total time: 3

Schedules for a CS minor

The CS minor asks for a subset of classes of the major. In this way the CS minor is a natural fall back for students who start with a CS major but then can not or do not want to complete all requirements.

A minor in Computer Science requires CS 141, CS 241, either CS 243 or Mathematics 214, and any nine elective credits chosen from 300-400 level Computer Science courses excluding CS 320, 430, and 498. Math 413 and 414 may be counted towards partial fulfillment of the requirement for nine elective credits.

If you match these requirements with the prerequisites from the requisite chart, you see that this becomes:

- Semester 1: CS 141

- Semester 2: CS 241, CS 243

- Semester 3: 2 of the 300 level classes, e.g. CS 301, CS 303

- Semester 4: 1 of the remaining 300 level classes, e.g. CS 304

If you look into the CS major schedules above, you note that you can do two things to shorten the schedule:

- Summer classes taken at William and Mary or elsewhere

- More than two CS courses per semester

Let's look into some possible scenarios. So obviously one can short the schedule above by putting three CS course in the last semester.

- Semester 1: CS 141

- Semester 2: CS 241, CS 243

- Semester 3: 3 of the 300 level classes, e.g. CS 301, CS 303, CS 304

W&M Computer Science prerequisite chart

CS Minor: tight schedule starting with summer classes

If you can start with CS classes in the summer, then this could be your schedule:

- Summer Session 1 or 2: CS 141

- Semester 1: CS 241, CS 243

- Semester 2: 2 of the 300 level classes, e.g. CS 301, CS 303

- Semester 3: 1 of the remaining 300 level classes, e.g. CS 304

Of course you can tighten this by putting the 300 level classes into one semester.

- Summer Session 1 or 2: CS 141

- Semester 1: CS 241, CS 243

- Semester 2: 3 of the 300 level classes, e.g. CS 301, CS 303, CS 304

CS Minor: tight schedule starting with spring classes

If you can start with CS classes in the spring, then this could be your schedule:

- Semester 1: CS 141

- Summer Session 1 and 2: CS 241, CS 243

- Semester 2: 2 of the 300 level classes, e.g. CS 301, CS 303

- Semester 3: 1 of the remaining 300 level classes, e.g. CS 304

or shorter

- Semester 2: 3 of the 300 level classes, e.g. CS 301, CS 303, CS 304