

## Math Courses for Science/Math Majors at Coe

The following table suggests a potential schedule of math classes for students entering Coe in the Fall of 2011. This is certainly not the only possible schedule, but it respects all pre-requisites and allows considerable flexibility.

- ❖ **Black** courses are required for a major in math.
- ❖ At least one course of each color must be taken for a major:
  - **Blue**, **orange** and **green** indicate courses which may be taken in any of the terms listed.
  - **Purple** indicates that either of the two analysis courses may be taken.
- ❖ **Grey** courses are available as electives.
- ❖ Several other courses are offered occasionally (**Modern Algebra II**, **Real Analysis II**, and various **Special Topics** courses) but not listed here because of variable scheduling.
- ❖ A total of 11 courses is required for the math major.

	Fall	Spring
2011-2012	<b>Calculus I</b> <b>CS I</b>	<b>Calculus II</b> <b>Foundations of Advanced Math</b>
2012-2013	<b>Calc III</b> <b>CS I</b>	<b>Linear Algebra</b> <b>Foundations of Advanced Math</b>
2013-2014	<b>Modern Algebra I</b> Probability & Statistics I	Differential Equations Probability & Statistics II Topology
2014-2015	<b>Real Analysis I</b> <b>Modern Algebra I</b>	<b>Complex Analysis</b> Advanced Geometry

- ❖ A minor in math requires **Calc I**, **Calc II**, **Foundations of Advanced Math**, and three appropriate electives.
  - To complement a major in Biology, appropriate electives likely include **Prob & Stat I** and at least one of **Calc III**, **Linear Algebra**, or **Differential Equations**.
  - To complement a major in Chemistry, appropriate electives likely include **Prob & Stat I**, **Calc III**, and at least one of **Linear Algebra** or **Differential Equations**.
  - To complement a major in Computer Science, appropriate electives include **Linear Algebra** and any two other upper division math classes.

- To complement a major in Economics, appropriate electives likely include **Calc III**, **Linear Algebra**, and at least one of **Prob & Stat I**, **Real Analysis I**, **Prob & Stat II**, or **Differential Equations**.
- To complement a major in Physics, appropriate electives likely include **Calc III**, **Linear Algebra**, **Differential Equations** and **Complex Analysis**.

*Selecting the right first college math course is very important. Depending on a student's background, beginning with **Calc I**, **Calc II**, or **Calc III** might be appropriate. We strongly encourage anyone uncertain about where to begin to consult with one of the math faculty to decide on a suitable course.*

### Courses for Comp Sci Majors at Coe

The following table suggests a potential schedule of CS classes for students entering Coe in the Fall of 2011. This is certainly not the only possible schedule, but it respects all pre-requisites and allows considerable flexibility.

- ❖ **Black** courses are required for a major in CS.
- ❖ At least one course of each color must be taken for a major:
  - **Blue**, **orange** and **green** indicate courses which may be taken in any of the terms listed.
- ❖ **Grey** courses are available as electives.
- ❖ A total of 11 courses is required for the CS major.

	Fall	Spring
2011-2012	<b>CS I</b> <b>Calculus I</b>	<b>CS II</b> <b>Calculus I</b> <b>Foundations of Advanced Math</b> (req. <b>Calc I</b> )
2012-2013	<b>Operating Systems</b> <b>Calc I</b> <b>Computer Graphics</b>	<b>Data Structures &amp; Algorithms</b> <b>Foundations of Advanced Math</b>

2013-2014	<b>Discrete Structures</b> <b>Advanced OOP</b>	<b>Programming Languages</b> <b>Advanced Topics</b> (see below)
2014-2015	<b>Computer Graphics</b> <b>Advanced Topics</b> (see below)	<b>Programming Languages</b> <b>Advanced Topics</b> (see below)

- ❖ **Advanced Topics** are selected based upon student interest. Possible topics include:
  - **Advanced Topics: Machine Architecture**
  - **Advanced Topics: Compilers**
  - **Advanced Topics: Theory of Computation**
  - **Advanced Topics: Computer Communications**
  - **Advanced Topics: Computer Ethics & Security**
  - **Advanced Topics: Game Design & Programming**
  - **Advanced Topics: Robotics**
- ❖ A minor in CS requires **CS I**, **CS II**, **Calc I**, **Foundations of Advanced Math**, **Operating Systems**, and two appropriate electives.

1. Questions to ask about this major? In other words, if a prospective student is planning to study psychology, what questions should they ask at any college/university to help them evaluate psychology programs? Please provide answers as the questions relate to your program (if that is not reflected in the answers to the questions on this document.)

Are students who get a Math/ CS major at Coe successful after college? **JON should be getting data on this as far as in the working world.** In the past several years we have had 100% of students receiving graduate school admission (of those who wanted to go to graduate school) and well over 90% of those receiving full financial support from their chosen institution.

Can I major in math and something else?

We know that students who seek out a liberal arts education usually have a variety of interests. At Coe many students who major in Mathematics or Computer Science also receive degrees in other areas. Historically over half of the majors in or department graduate with multiple degrees. Some of the most common double majors are Computer Science & Physics or Mathematics & Business Administration, but students who have majored in Mathematics or Computer Science have received double majors with almost every other department on campus.

Does the department offer a wide variety of courses?

Unlike many smaller institutions Coe is able to offer a wide variety of courses to suite student's needs & desires. The regular teaching of topics classes also allows student's

the opportunity to decide what courses need to be taught to prepare them for the future endeavors. e

Can I see myself as part of this community?

There are many fine institutions out there but to take full advantage of the college experience the 'fit' has to be right. We believe the atmosphere in our department makes it a wonderful place for student to grow both academically & socially. The design of the facilities makes for a family type atmosphere where student & faculty/student interactions are a natural part of the learning process.