



## MORAVIAN COLLEGE

### CSCI 105 | Fundamental Ideas in Computer Science | Spring 2015

Days: M/W/F 1:10 – 2:20 in PPHAC 330  
Instructor: Brian W. Snyder  
Office: PPHAC 220  
Office hours: M/W/F 12:30-1:00  
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Email: snyderb@moravian.edu

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“Having to solve a particular problem, we might ask: ‘How difficult is it to solve?’ and What’s the best way to solve it? Computer science rests on solid theoretical underpinnings to answer such questions precisely.” –Jeanette Wing

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### Course Description

In this course, we will answer the question “What is computer science?” and study how computer scientists approach solving problems using tools like abstraction and recursion. We will examine, as the course title suggests, the fundamental ideas in computer science and see how these ideas can be used to answer the questions posed in the preceding quote. As this course fulfills the quantitative reasoning LinC requirement, we will also study how to convert intuitive understanding of problems into a formal specification, discuss what problem-solving techniques are appropriate for various problems, and explore different representations of data and how representing data in different ways can aid in solving problems.

### Course Objectives

At the completion of this course, you should be able to:

- Describe the components of a computer and their functions.
- Design computable algorithms to solve problems.
- Decide whether or not a problem can be solved computationally and whether or not it is tractable (as well as define these terms).
- Describe why some problems are “harder” than others.
- Describe why some solutions are “better” than others.

### Text & Materials

- Brookshear & Bylow, *Computer Science, An Overview, 12<sup>th</sup> Ed.* Pearson Education, Boston. 2015. ISBN: 978-0-13-376006-4.
- Companion Website: <http://www.pearsonhighered.com/brookshear>
- Powerpoints will be posted on Blackboard as they become available.
- Email address that you check frequently
- School-issued tablet or laptop



1742

## MORAVIAN COLLEGE

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#### **Attendance Policy**

This course does not have a rigid attendance policy in the sense that there is a rule describing the number of lectures that you must attend. However, please do not take this as a license to never show up to class; I expect you to be at each class meeting. Your attendance in lecture is important (beyond the usual reasons) in that homework, due dates, and readings will be assigned in person during lecture. Class begins at 1:10 pm and make every effort to show up on time. Coming in late distracts your fellow students and the instructor.

#### **Academic Honesty Policy**

Please read and understand the College's Academic Honesty Policy (which you can find in the Student Handbook, link below). I will let you know what materials are appropriate to use for reference for specific assignments when they are assigned. Since collaboration with your colleagues will be an important part of your careers, collaboration is permitted on all graded assignments (with the exception of exams). However, unless I state otherwise, you must turn in your own copy of each assignment in your own writing. If the ideas/algorithms expressed in an assignment are not entirely your own (i.e., you worked with one of your colleagues), you must include a note stating who you worked with and the percent contributions of everyone who contributed to the work (including your contribution).

#### **Student Handbook**

...is located at <http://www.moravian.edu/studentLife/handbook/index.htm>. Please familiarize yourself with it. The academic honesty policy is listed at: <http://goo.gl/mi8gjj>.

#### **Grading Policy**

There are four components to your grade:

- Assignments: 25%
- Projects: 25%
- Midterm Exam: 25%
- Final Exam: 25%

Other policy matters:

- Grading Scale: I will use the standard 90-80-70-60 scale with pluses and minuses to assign grades.



## MORAVIAN COLLEGE

### **CSCI 105 | Fundamental Ideas in Computer Science | Spring 2015**

- **Late Homework:** I will accept homework one class period beyond its due date without any penalty. However, if this is abused (i.e., you systematically hand in late homework), this privilege will be revoked.
- **Presentations/Exams Absence:** If you are going to miss an exam or project presentation due to conflict, you must let me know before that particular class. If absence is due to some other circumstance, you must let me know as soon as possible and provide me with documentation. Valid circumstances include events like illness and family trauma. Invalid circumstances are events like hangovers and faulty alarm clocks.

#### **Technology in the Classroom**

- Bring your school-issued laptop or iPad to class but please use it for class-related materials only.
- Please refrain from using your phone in class. Silence the ringer as a courtesy to the instructor and your fellow students.

#### **Disability Services**

Students who wish to request accommodations in this class for a disability should contact Elaine Mara, Assistant Director of Academic & Disability Support, located on the lower level of Monocacy Hall, or by calling [610-861-1401](tel:610-861-1401). Accommodations cannot be provided until authorization is received from the Academic Support Center.

*This syllabus is tentative and may change at the instructor's discretion..*