Computer Science and Programming
# Computer Science and Programming

## Computer Science
- Broad discipline that explores any and all areas of computation.
- Includes: theory of computation, algorithms, computer graphics, language theory, systems, and human-computer interaction.

## Programming
Computer Science and Programming

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Programming

- Providing a set of instructions to a computer to automate a specific task or solve a given problem.
Computer Science and Programming

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Programming

- Providing a set of instructions to a computer to automate a specific task or solve a given problem.
- An application of computer science.
Computer Science and Programming

Computer Science

- Broad discipline that explores any and all areas of computation.
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Programming

- Providing a set of instructions to a computer to automate a specific task or solve a given problem.
- An application of computer science.
- Implementing algorithms.
About You

My current year in school is:

a. Freshman  
b. Sophomore  
c. Junior  
d. Senior  
e. Graduate Student  
f. Other
About You

My primary reason for taking CS 200:

a. I am very interested in the subject.
b. I am curious to learn more about the subject.
c. It fulfills a requirement for my CS major or certificate.
d. It fulfills a requirement outside of the CS major or certificate.
e. It fits my schedule.
f. I’ve heard good things about the course.
I have daily access (outside of university labs) to computers with the following operating systems:

- Windows
- Mac
- Linux
- Other
- None
Instructors

Jim Williams
jimw@cs.wisc.edu
Lectures 001 and 002
Office: 6384 CS
Hours: T 10am - noon, W 9am - 11am, or by appt.

Marc Renault
mrenault@cs.wisc.edu
Lectures 003 and 004
Office: 6382 CS
Hours: T 1pm - 3pm, Th 10am - noon, or by appt.
CS 200 Programming I
Fall 2017 Team

https://cs200-www.cs.wisc.edu/wp/contact/

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CS 200 Programming I

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Course Aim


Overall

- Intended for students who have no prior programming experience.
- Teach the process of incrementally developing small programs along with fundamental CS topics.
- Key topics: problem abstraction, edit-compile-run cycle, data types, control structures, basic testing and debugging, and good programming practices.
Course Aim


Specific Learning Outcomes

- Design and implement a standalone program that can interact with the user via prompts and or menus, access and edit data stored in an array or list structure, and use and further process the data found in those structures.
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- Able to trace code to determine output or results.
Course Aim


Specific Learning Outcomes

- Design and implement a standalone program that can interact with the user via prompts and or menus, access and edit data stored in an array or list structure, and use and further process the data found in those structures.

- Able to trace code to determine output or results.

- Able to implement a given program design and choose correct control structures for implementing algorithms expressed in pseudocode.
Course Aim


Specific Learning Outcomes

- Able to interpret a variety of diagram types used to express programming concepts and results: truth tables, memory model diagrams, control flow charts, class diagrams, object diagrams, and use-case diagrams.
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- Able to interpret a variety of diagram types used to express programming concepts and results: truth tables, memory model diagrams, control flow charts, class diagrams, object diagrams, and use-case diagrams.

- List, describe, use the basic I/O operations for reading and writing text files to and from the computer’s hard drive.
Getting Started
Getting Started


Checklist

1. zyBook Registration
2. TopHat Registration
3. Activate Piazza account
4. Activate CS Account
5. Find Team Lab
6. Review the Syllabus
7. By week 3: Exam conflicts and accommodations
8. By week 3: Install Java 8 and Eclipse on your computer
1. **zyBook Registration**

**Required:**

*COMP SCI 200: Programming I*
zyBook code:
WISCCOMPSCI200Fall2017
1. *zyBook Registration*

**Required:**

*COMP SCI 200: Programming I*


zyBook code:

WISCCOMPSCI200Fall2017

**Use zyBooks for**

- Text book
- Participation marks (Before lecture - 5%)
- Challenge activities (After lecture - 5%)
- Programming Assignments
1. **zyBook Registration**

Required:

**COMP SCI 200: Programming I**


zyBook code:

WISCCOMPSCI200Fall2017

Additional reference:

2. TopHat Registration

TopHat

Join Codes:

- Lecture003 MWF (PM): 719946
- Lecture004 MWF (AM): 891624
2. **TopHat Registration**

**TOP HAT**

Join Codes:
- Lecture003 MWF (PM): 719946
- Lecture004 MWF (AM): 891624

**In-class participation**
- Facility classroom participation.
- Participation grade (5%)
3. **Activate Piazza Account**

**piazza**

**Online question resource**

- One discussion area for all sections.
- Interaction of students, consultants and instructors.
- First stop for getting questions answered.
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**piazza**

**Online question resource**
- One discussion area for all sections.
- Interaction of students, consultants and instructors.
- First stop for getting questions answered.

**Rules**
- Be courteous.
- Don’t post code!
- Read Piazza Expectations post.
4. Activate your CS Account

CS Account Key Points

- All registered CS 200 students are provided an account for the CS lab.
- The username and password can differ from your UW NetID.
- Some accounts may not be available until after the first day of classes.
- 1 day delay in activation.
- Needed to log into lab computers.
5. **Prepare for Team Labs**

Team Labs

- Review the previous week zyBooks chapter.
- Broken up into labs of 50 students with (ideally) 1 consultant per 10 students.
- Pair programming.
- Labs are designed to be interactive.
5. Prepare for Team Labs

Team Labs

- Review the previous week zyBooks chapter.
- Broken up into labs of 50 students with (ideally) 1 consultant per 10 students.
- Pair programming.
- Labs are designed to be interactive.
- Marks are participation based:
  - Arrive on time (within 5 minutes): 1 point
  - Leave on time (within 5 minutes): 1 point
  - Participation: 3 points
6. Review the Syllabus

<table>
<thead>
<tr>
<th>Grading</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Participation (20%)</td>
</tr>
<tr>
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80% rule: 80% of the possible points in a category receives full credit.

Grading:
- Participation (20%)
  - zyBooks Participation Activities (5%)
  - zyBooks Challenge Activities (5%)
  - Team Labs (5%)
  - TopHat Questions (5%)

Exams:
- Midterm 1 (10%) – Thursday, Oct 12 (5pm to 7pm)
- Midterm 2 (15%) – Thursday, Nov 16 (5pm to 7pm)
- Final Exam (20%) – Monday, Dec 18 (5:05pm to 7:05pm)

Programs:
- 5 week long programming assignments (P1 - P5)
- 2 multi-week assignments (BP1 & BP2)
6. Review the Syllabus

Grading

- Participation (20%)
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  - Team Labs (5%)
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**Grading**

- **Participation (20%)**
  - zyBooks Participation Activities (5%)
  - zyBooks Challenge Activities (5%)
  - Team Labs (5%)
  - TopHat Questions (5%)
  - 80% rule: 80% of the possible points in a category receives full credit.

- **Exams (45%)**
  - Midterm 1 (10%) – Thursday, Oct 12 (5pm to 7pm)
  - Midterm 2 (15%) – Thursday, Nov 16 (5pm to 7pm)
  - Final Exam (20%) – Monday, Dec 18 (5:05pm to 7:05pm)
6. Review the Syllabus

Grading

- Participation (20%)
  - zyBooks Participation Activities (5%)
  - zyBooks Challenge Activities (5%)
  - Team Labs (5%)
  - TopHat Questions (5%)
  - 80% rule: 80% of the possible points in a category receives full credit.

- Exams (45%)
  - Midterm 1 (10%) – Thursday, Oct 12 (5pm to 7pm)
  - Midterm 2 (15%) – Thursday, Nov 16 (5pm to 7pm)
  - Final Exam (20%) – Monday, Dec 18 (5:05pm to 7:05pm)

- Programs (35%)
  - 5 week long programming assignments (P1 - P5)
  - 2 multi-week assignments (BP1 & BP2)
6. **Review the Syllabus**

**No Late Assignments Accepted**

- 80% rule for Participation items.
- In extreme circumstances, contact me ASAP and submit what has been done.
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No Late Assignments Accepted

- 80% rule for Participation items.
- In extreme circumstances, contact me ASAP and submit what has been done.

Academic Integrity

- Academic dishonesty or misconduct is taken very seriously by the university (see UW–Madison Academic Integrity policy).
- It is academic misconduct to submit someone else’s work as your own.
- It is academic misconduct to help another student commit academic misconduct.
The Rest (by week 3)

7. Determine exam conflicts and other accommodations requests.

- Midterm 1 – Thursday, Oct 12 (5pm to 7pm)
- Midterm 2 – Thursday, Nov 16 (5pm to 7pm)
- Final Exam – Monday, Dec 18 (5:05pm to 7:05pm)
The Rest (by week 3)

7. Determine exam conflicts and other accommodations requests.
   - Midterm 1 – Thursday, Oct 12 (5pm to 7pm)
   - Midterm 2 – Thursday, Nov 16 (5pm to 7pm)
   - Final Exam – Monday, Dec 18 (5:05pm to 7:05pm)

8. Install Java 8 and Eclipse on your computer.
   - Consultants can help if you are having trouble with the installation.
Getting Help
GETTING HELP

HTTPS://CS200-WWW.CS.WISC.EDU/JP/HELP/

Help!

- Tips for Solving Programming Problems
- Piazza Online Discussion
- Consultants
  - 2:00pm to 5:30pm – 1358 CS
  - 5:30pm to 8:00pm – 1350 CS or 1370 CS
- Instructor Office Hours
- CS Learning Center
- Drop-in Tutoring (College of Engineering)
A couple more questions.

Which of the following is the best estimate for the amount of computer code that you have written prior to this class?

a. 0 lines (I have never written any code)
b. 1 – 200 lines (I have written some code, but not a lot)
c. 201 – 2,000 lines (I have written several small programs)
d. 2,000 – 20,000 lines
e. > 20,000 (I have done a substantial amount of programming)
A couple more questions.

I am expecting to spend approximately this many hours per week on this class:

a. Less than 4 hours/week
b. 4 – 8 hours/week
c. 8 – 12 hours/week
d. 12 – 16 hours/week
e. More than 16 hours/week
REFERENCES
Image Sources I


https://tophat.com/

Image Sources II

https://piazza.com/


https://brand.wisc.edu/web/logos/

http://www.zybooks.com/
Image Sources III

http://bigpicture.typepad.com/comments/images/2008/07/14/dont_panic.png