CS 172 Computer Programming II
Spring 2016

Course Description:
Object-oriented design, inheritance hierarchies, information hiding principles, recursion, quick sort, multidimensional arrays, classes, pointers, dynamic memory, good programming style, documentation, debugging, and testing.

Instructors:
Matt Burlick: mjburlick@drexel.edu
University Crossings, Room 137
Office Hours:
Monday 2:00pm – 4:00pm
Wednesday 2:00pm - 4:00pm
And by appointment

Mark Boady mwb33@drexel.edu
University Crossings, Room 138
Office Hours:
Tuesday 12pm-2pm
Thursday 2pm-4pm
And by appointment

Meetings:
Lecture: Section A Tuesday 11:00am-12:50pm Randel 326
Section B Tuesday 01:00pm-02:50pm Randel 326
Section C Monday 12:00pm-01:50pm Randel 326
Section D Tuesday 02:00pm-03:50pm Randel 327

Lab Section 060 Thursday 11:00am-01:50pm UC151
Section 061 Thursday 01:00pm-02:50pm UC151
Section 062 Friday 11:00am-12:50pm UC153
Section 063 Friday 01:00pm-02:50pm UC153
Section 064 Friday 03:00pm-04:50pm UC153
Section 065 Thursday 03:00pm-04:50pm UC151
Section 066 Wednesday 01:00pm-02:50pm UC153
Section 067 Wednesday 03:00pm-04:50pm UC153
Section 068 Tuesday 03:00pm-04:50pm UC153
Section 071 Thursday 01:00pm-02:50pm UC153
Section 072 Thursday 10:00am-11:50am UC153
**Teaching Assistants**
TA and Grader assignments will be done at the beginning of term at which point we will list them on Blackboard.

All TA office hours will be at Cyber Learning Center (CLC), at UC152, unless otherwise stated

**Prerequisites:**
C or better in CS 171
Students earning less than a C in CS 171 are advised to re-take CS 171

**Learning Expectations:**
This is the second in a two-term sequence of programming in C++ (CS171-2). Required for all majoring in CS and those minoring in CS. Goal is to be able to write a working C++ program using classes, recursion, dynamic allocation etc... when presented with a problem description.

**Objectives:**
Students completing this course should be able to:

- Trace a C++ program that has recursion, classes, lists, pointers, and dynamic allocation.
- Design, implement and document classes as appropriate for a C++ program to satisfy problem description
- Write appropriately styled C++ code and documentation for programs using recursion, classes, lists, pointers, and dynamic allocation.
- Detect and correct errors in C++ for programs using recursion, classes, lists, pointers, and dynamic allocation.
- Understand basic issues of program efficiency as related to sorting and searching algorithms.
- Communicate and solve problems effectively as a member of a team

**Required textbooks:**
  - Available at the Drexel Bookstore ([http://drexel bkstore.com](http://drexel bkstore.com))
  - Also available as an E-Textbook ([https://www.vitalsource.com/](https://www.vitalsource.com/))
Software & Hardware Requirements
All Drexel students are required to have individual access to a dedicated computer which meets minimum specifications, including: processor speed, memory and secondary storage requirements, connectivity via high-speed or direct connection to campus network, and a CD/DVD drive.

Visual Studio
The official compiler used for this course is **Microsoft Visual Studio Professional 2013**. This compiler runs under the Windows operating system only. Students using other operating systems are responsible for ensuring that programs they write will compile and run properly with **Visual C++**. Drexel Students may obtain Microsoft Visual Studio Professional 2013 via the Dreamspark Suite from Microsoft Academic Alliance.

To obtain Visual Studio:
- Check your Drexel email to get your login information for Dreamspark - this email will come on the Friday before the term begins. The email will come from "The College of Computing and Informatics- DreamSpark Premium noreply@kivuto.com"
- If this is your first time getting an account, the subject will be "An Account has been created for you".
- Alternately, if you already had an account from a previous term, the message will have the subject "Your account has been reactivated".

Drexel students with insufficient internet access to download such a large file may arrange to obtain a CD copy of the compiler through the Dreamspark / Microsoft Academic Alliance website. Do this as soon as possible, in order to allow sufficient time to complete assignments.

Any student having issues accessing the site should first visit [http://www.cci.drexel.edu/msdnaareset](http://www.cci.drexel.edu/msdnaareset) to have account information and instructions for connecting sent again. If the above link is broken or says you do not have an account, contact [ihelp@drexel.edu](mailto:ihelp@drexel.edu) to create or reset your password manually.

Blackboard
This course is operating with the Blackboard Course Management System (also referred to as **Drexel Learn**), which allows electronic submission of assignments, quizzes, and lab exercises, along with online chat sessions and threaded discussion groups. Instructions on usage of Drexel Learn will be given in the first assignment and lab exercise. You can access the Drexel Learn course website by visiting the [Drexel Learn course website](http://www.turingscraft.com/help.html) and logging in using your Drexel userid and password. Further help is available at the login page.

Codelab
This course will also make use of the Turingscraft CodeLab website. This website provides sample problems that are immediately auto-graded with feedback. There are a ton of problems on there for you to play around with though you will be required to do certain problems as part of pre-labs and assignments. By the start of the second week of the term you will have been set up with an account and just need to complete the registration using your Drexel email address at [http://www.turingscraft.com/help.html](http://www.turingscraft.com/help.html). Additional instructions will be available on the course Blackboard page.
Piazza
Unfortunately the discussion forums built into Blackboard are not that effective at this time. In an attempt to stimulate discussion and address questions asked by many (instead of answering them several times to individual students), we will be using the Piazza discussion forum.

**Course Assessment:**
Your grade will have 4 components:
- Homework Assignments 30%
- Labs 10%
- Prelabs 5%
- Quizzes 20%
- Final Exam 35%

I intend to use the standard grading scale of

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<thead>
<tr>
<th>Grade Range</th>
<th>Letter Grade</th>
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<tbody>
<tr>
<td>[100-97]</td>
<td>A+</td>
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**Pre-labs**
Prior to each lab there will be a pre-lab. This is intended to be done on your own and will be due prior to your lab. The purpose of this is to get you thinking about topics relevant to the lab prior to meeting with your group in lab. That way hopefully you have more to contribute and things can go (relatively) smoothly!

**Labs**
Your lab grade is based upon your attendance in lab, participation in individual and group lab activities, and completion of assigned lab projects. Each lab period you will be given an assignment which must be started in class. During class time you may consult with other students or the TAs if you need help on the lab. *Because labs involve group work experiences, you are expected to attend and participate as part of a group, and not work alone outside the lab.*

All lab assignments will be posted on Bb Learn. There you will find instructions for each lab, along with questions that you must answer. You will submit your answers through Bb Learn as well.

If you cannot finish a lab, you may complete the lab at home (yes this is seemingly contradictory to a prior statement, but in the case that you spend the entire time working with your group in lab and cannot finish by the end, then you may finish at home). Simply save your work on your Bb Learn account and resume it later. Your completed work must be submitted (on Bb Learn).

**Assignments**
All assignments will be posted on Blackboard with a due date. *No late material will be accepted.* Even if it's less than a second overdue. Make sure to submit early.

All written material (non-code) must be prepared on a word processor, converted to pdf, and submitted electronically via Bb Learn.

*Although labs are designed to be collaborative, pre-lab and assignments are meant to be done individually.* If at any point you use part of someone else’s solution in an assignment you MUST cite the source of the code. Copy from others (online or classmates) results in an automatic zero for the assignment and additional possible penalties (including course failure and/or escalation to the honor board).

**Quizzes**
Occasional quizzes will be given at the beginning of your lab periods. There will likely be approximately 5 of them. The purpose of this is to ensure that you are reviewing lecture and assignment material regularly and so that you are not surprised by material on the final.
Due Dates
Unless otherwise specified, due dates are as follows:
Pre-Labs: Available Monday mornings, due by that Friday 11:55pm
Labs: Available prior to lab, due by that Monday 11:55pm
Assignments: Due on Thursday 11:55pm

Late Policies
Pre-Labs: Cannot be made up.
Labs: Can only be made up if you have an official note (University, Employer, Doctor, etc...), in which case it is your responsibility to make up the lab with your TA prior to the next lab.
Quizzes: Cannot be made up
Assignments: Cannot be made up

Since we realize that things happen (slept in, got sick, lost internet) we will drop the lowest grade for each of the previously mentioned categories.

Additional Policies

• You, your instructor, and the TA are bound by the Academic Honesty policy. Students are responsible for reading and understanding the course policies in this syllabus and for announcements made in class and in the course email list. See the academic policy at the end of the syllabus.
• During lecture and recitation sessions please refrain from using mobile phones or otherwise being impolite.
• Any dispute about an assignment grade must be made and resolved within 5 days of receiving your grade. After this period your grade cannot be adjusted.
• If you are seeking help with an assignment you must contact me or a TA prior to Friday close-of-business hours. We cannot guarantee a timely response of that. This policy is to ensure that you get started early on your assignments.

Plagiarism Detection System
To ensure that assignments are done independently, in addition to human observation, we will be running all assignments through a plagiarism detection system. This program uses compiler techniques which are invariant of syntax and style. It has a very high accuracy rate.
CS 172 Week by Week
This is a preliminary outline and may be revised and augmented during the term according to need.

Readings are from the Foley textbook unless otherwise stated.

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<thead>
<tr>
<th>Week</th>
<th>Topic(s)</th>
<th>Reading</th>
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<tr>
<td>Week 1:</td>
<td>Course Overview</td>
<td>Chapter 5</td>
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<tr>
<td>Week of</td>
<td>Module 10 – Introduction to Abstract Data Types</td>
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<td>March 28th</td>
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<td>Week 2</td>
<td>Module 11 - More About Classes</td>
<td>Chapter 5</td>
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<td>April 4th</td>
<td>Module 12 – Operator Overloading and Class Templates</td>
<td>Chapters 14, 16</td>
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<td>Week 3</td>
<td>Module 13 – Vectors, Arrays, and Standard Template Library</td>
<td>Chapter 6</td>
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<td>April 11th</td>
<td>Module 14 – Recursion</td>
<td>Chapter 10</td>
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<td>Week 4</td>
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<td>Week of</td>
<td>Module 15 – Searching and Sorting</td>
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<td>April 18th</td>
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<td>Week 5</td>
<td>Module 16 – Pointers and Dynamic Memory Allocation</td>
<td>Chapter 7</td>
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<td>Last day to withdraw May 13th</td>
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<td>April 25th</td>
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<td>Week 6</td>
<td>Module 17 – Advanced Pointer Usage</td>
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<td>May 2nd</td>
<td>Module 18 – Inheritance</td>
<td>Chapter 8</td>
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<td>Week 7</td>
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<td>Week of</td>
<td>Catch Up and Review</td>
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<td>May 9th</td>
<td>Memorial Day Monday May 30th</td>
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<td>Week 8</td>
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University Policies
In addition to the course policies listed on this syllabus, course assignments or course website, the following University policies are in effect:

- **Academic Honesty:**
  [http://www.drexel.edu/provost/policies/academic_dishonesty.asp](http://www.drexel.edu/provost/policies/academic_dishonesty.asp)
- **Judicial Affairs Academic Integrity:**
  [http://drexel.edu/studentaffairs/community_standards/facultyStaff/integrity/](http://drexel.edu/studentaffairs/community_standards/facultyStaff/integrity/)
- **Official Final Exam Schedule:**
  [http://www.drexel.edu/registrar/scheduling/exams/](http://www.drexel.edu/registrar/scheduling/exams/)
- **Students with Disability Statement:**
- **Course Drop Policy:**
- **Drexel Student Learning Priorities:**
  [http://www.drexel.edu/provost/learningpriorities/](http://www.drexel.edu/provost/learningpriorities/)

**Academic Integrity/Plagiarism Policy**
As a reminder, below is the university's academic integrity/plagiarism policy:

"Drexel University Policy on Plagiarism:
Violations of the Academic Integrity Policy include, but are not limited to:
1. Plagiarism
2. Fabrication
3. Cheating
4. Academic Misconduct

1. **Plagiarism**— the inclusion of someone else's words, ideas, or data as one's own work. When a student submits work for credit that includes the words, ideas, or data of others, the source of that information must be acknowledged through complete, accurate, and specific references, and, if verbatim statements are included, through quotation marks as well. By placing his/her name on work submitted for credit, the student certifies the originality of all work not otherwise identified by appropriate acknowledgments.

Plagiarism covers unpublished as well as published sources. Examples of plagiarism include, but are not limited to:

- Quoting another person's actual words, complete sentences or paragraphs, or an entire piece of written work without acknowledgment of the source.
- Using another person's ideas, opinions, or theory, even if it is completely paraphrased in one's own words without acknowledgment of the source.
- Borrowing facts, statistics, or other illustrative materials that are not clearly common knowledge without acknowledgment of the source.
- Copying, or allowing another student to copy, a computer file that contains another student's assignment, and submitting it, in part or in its entirety, as one's own.
- Working together on an assignment, sharing the computer files and programs involved, and then submitting individual copies of the assignment as one's own individual work.

Students are urged to consult with individual faculty members, academic departments, or recognized handbooks in their field if in doubt regarding issues of plagiarism."
2. **Fabrication** - Fabrication is the use of invented information or the falsification of research or other findings. Examples include, but are not limited to:

- Citation of information not taken from the source indicated. This may include the incorrect documentation of secondary source materials.
- Listing sources in a bibliography not used in the academic exercise.
- Submission in a paper, thesis, lab report, or other academic exercise of falsified, invented, or fictitious data or information, or deliberate and knowing concealment or distortion of the true nature, origin, or function of such data or information.
- Submitting as your own written work, printing, sculpture, etc. prepared totally or in part by another.

3. **Cheating** - Cheating is an act or an attempted act of deception by which a student seeks to misrepresent that he or she has mastered information on an academic exercise that he/she has not mastered. Examples include, but are not limited to:

- Copying from another student’s test, exam, quiz, and/or paper.
- Allowing another student to copy from a test, exam, quiz, and/or paper.
- Unauthorized use of course textbook or other materials, such as a notebook to complete a test or other assignment.
- Collaborating on a test/exam/quiz or other project with another person(s) without authorization.
- Using or processing specifically prepared materials during a test such as notes, formula lists, notes written on the students clothing, etc. that are not authorized.
- Taking a test for someone else or permitting someone else to take a test for you.

4. **Academic Misconduct** - Academic misconduct includes other dishonest acts such as tampering with grades or taking part in obtaining or distributing any part of an administered or unadministered test/assignment. Examples include, but are not limited to:

- Stealing, buying, or otherwise obtaining all or part of an administered or unadministered test.
- Selling or giving away all or part of an administered or unadministered test including questions and/or answers.
- Bribery any other person to obtain an administered or unadministered test or any information about the test.
- Any unauthorized action taken for the purpose of changing a grade in a grade book, on a test, or on other works for which a grade is given.
- Changing, altering, or being an accessory to the changing and/or altering of a grade in a grade book, on a test, a “change of grade” form, or other official academic records of the University that relate to grades.
- Continuing to work on an examination or project after the specified allotted time has elapsed.
- Any buying or otherwise acquiring any theme, report, term paper, essay, computer software, other written work, painting, drawing, sculpture, or other scholastic art work, and handing it in as your own to fulfill academic requirements.
- Any selling, giving, or otherwise supplying to another student for use in fulfilling academic requirements, any theme, report, term paper, essay, computer software, other written work, painting, drawing, sculpture, or other scholastic art work.
- **Scientific Misconduct**—See [http://www.drexel.edu/provost/policies/conduct_of_research/](http://www.drexel.edu/provost/policies/conduct_of_research/)

A step-by-step guide for reporting a case of academic dishonesty can be found on the Student Life Website: [http://drexel.edu/studentlife/community_standards/facultyStaff/integrity/](http://drexel.edu/studentlife/community_standards/facultyStaff/integrity/). Should you have any questions or need further assistance regarding academic dishonesty, please call 215-895-6074 and ask for Stephen Rupprecht or email [sccs@drexel.edu](mailto:sccs@drexel.edu).