DE ANZA COLLEGE   **Fall, 2015**

<p style="text-align:center">21719 CIS-022B-01Y: Intermediate Programming Methodologies in C++ (4 1/2 units)
Syllabus</p>

Instructor: Delia Gârbacea

Office Location	**:** F51c
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Office Hours :	MTWTh	3:25 – 4:15 p.m.	AT203/AT203B
Class meetings:	Mon, Wed	1:30 – 3:20p.m., Lecture	AT204

The instructor will be available **Online:** Wed, 10:45 – 12:00p.m.

Course description: A systematic approach to the design, construction and management of computer programs, emphasizing design, programming style, documentation, testing and debugging techniques. Strings, multidimensional arrays, structures, and classes. Pointers: their use in arrays, parameters and dynamic allocation. Introduction to linked lists.

Text required: "Starting Out with C++ From Control Structures through Objects" by Tony Gaddis, seventh edition, 2012, Pearson Education, Inc., publishing as Addison-Wesley.

Other resources: CodeLab, a web-based learning system. http://www.turingscraft.com
SECTION ACCESS CODE: **DEAN-21613-ZZEB-26**

Attendance policy: This 4.5 Units course consists of 4 lecture hours (4x50min = 200min) and 1.5 lab hours (75min) per week. You are expected to attend all lecture sessions and complete all online work. If you must be absent from class, arrange with another student to share class notes for that session. You should plan on spending approximately another 16 to 24 hours per week to study and do your homework. Remember, there is no such thing as a dumb question: you want to understand before you get lost. In addition, please be assured that I'm ready to assist you in any way possible as you meet the challenges ahead. If you wish to withdraw from class, it is your responsibility to do so. An unauthorized withdrawal from class without following official procedures will result in you being assigned a grade of "F" (or "NC" if you have selected the Credit /No Credit option).

Student Learning Outcomes: By the end of the course, students will:
➢ Read, analyze and explain intermediate level C++ programs.
➢ Design solutions for intermediate level problems using appropriate design methodology incorporating intermediate programming constructs.
➢ Create algorithms, code, document, debug, and test intermediate level C++ programs.

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Course objectives: Upon completion of the course, students will:

- ➢ Create programs which demonstrate knowledge of manipulating data in arrays of one or more dimensions.
- ➢ Create programs which demonstrate knowledge of memory management functions and pointer arithmetic to manipulate data in one-dimensional arrays.
- ➢ Use C-Strings and C++ String class for Input/ Output and manipulation of strings. Create and use other functions to manipulate strings.
- ➢ Create programs which use structures.
- ➢ Use Object-oriented programming concepts to design applications and computer programs.
- ➢ Define and use the basic linked list operations: Traverse, Search, Insert, Delete. Design, code, and test programs using linked lists

Scholarly conduct: In order to be successful in this class you will have to make a commitment to studying, reading the text, doing your homework, writing your lab assignments, attending class, and taking notes. Worthwhile contribution and regular attendance can positively affect the grades. You are expected to do your own work. Cheating or plagiarism in any form will not be tolerated. Copying or cheating during a test will result in a zero being assigned for that test and may result in a failing grade for the entire course. Any copied assignments will result in a zero grade for all parties, and may result in a failing grade for the entire course. It may also result in dismissal from class, college disciplinary action, and/or notation in their permanent records. The Business Division Dean will also be notified by letter. Please check the current Schedule of Classes to learn more about academic integrity, other policies, and Student Standards of Conduct (http://www.deanza.edu/schedule/).

Reading assignments and recommended Review Questions, Exercises, and Problems: The exercises and problems are not to be run on the computer (unless you wish to). The purpose of these exercises and problems is to help clarify the material for you as we proceed and to prepare you for tests, therefore, although you do not have to turn them in, you are strongly encouraged to solve them.

Tests: There will be two midterm exams (100 points each) and a comprehensive final (100 points). Both tests are closed book, closed notes. You may use one 8 ½ x 11 inch hand written notes sheet. Test dates are shown on the calendar. Final exams papers will be retained for a period of 90 days from the exam date. The final exam will be similar to the midterm exams, emphasizing the material learned after the second midterm but covering the rest of the quarter as well.

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Class and online assignments: There will be given between 12 to 24 assignments to be completed in class or on line, such as group work, quizzes, etc. They are open book, open notes. There is no make up for any such assignment. These are pass/no pass type of assignments.

Programming assignments (homework): You will be given 7 <u>programming assignments</u> (100 points each. They are to be run using the computer.
  ➢ 5 points will be deducted for each day an assignment is late.
  ➢ No assignment will be accepted more than one week after the due date, unless there's an exceptional situation (email me or come and talk to me, preferable in advance).
  ➢ Partial credit will be given for incomplete assignments.
  ➢ There is no make up for any assignment.
  ➢ All assignments must be uploaded on Catalyst.

Laboratory assignments: CodeLab provides automatic checking, instantly returning diagnostic feedback. Also it keeps track of students' work. You have to solve and submit about 200 hands-on programming exercises for 100 points. First you have to create an account. Remember to submit your solutions EVERY WEEK! Please check the due dates for each section. SECTION ACCESS CODE: **DEAN-21613-ZZEB-26**

Extra-credit assignments may occasionally be given throughout the course (up to 9 points).

Grading: <u>To pass the class</u> you have to do the following:
  1. complete **80%** of the class assignments
  2. avg1 = average of the 7 programming assignments and CodeLab should be **70** or greater
  3. avg2   = average of the midterm exams should be **60** or greater
  4. final exam score should be **60** or greater
If all of the above are true, your final grade will be calculated as follows:
          score = (avg1 + avg2 + final + extra credit) / 3
Your grade is based on the score you earn as shown below. Worthwhile contribution and regular attendance can positively affect the grades.

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Class Assignments        : 12 - 24              P/NP

Midterm Exams            : 2 at 100 pts. each
               AVERAGE:                   100

Programming Assignments: 7 at 100 pts. each
CodeLab Assignments    : 200 at 100 pts. total
               AVERAGE: (700 + 100) / 8 =    100

Final Exam               : 1 at 100 pts.      100
Extra Credit             :                      9
               SCORE: (100 + 100 + 100 + 9)/3 = 103
```

[97, 103]	➔ **A+**
[93, 97)	➔ **A**
[90, 93)	➔ **A-**
[87, 90)	➔ **B+**
[83, 87)	➔ **B**
[80, 83)	➔ **B-**
[77, 80)	➔ **C+**
[70, 77)	➔ **C**
[67, 70)	➔ **D+**
[63, 67)	➔ **D**
[60, 63)	➔ **D-**
[0, 60)	➔ **F**

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Tentative Schedule

	Chapters	Mon	Tue	Wed	Thu	Fri	Important Dates *All dates are enforced!*
SEPT Week 1	Ch 8: Binary Search Insertion Sort	21	22	23	24	25 Code Lab	**Saturday, Sept. 26** Last day to drop for a refund for out-of-state or foreign students
Week 2 **OCT**	Ch 7: 2D Arrays Multi-D Arrays	28	29	30 **Hw 1**	1	2 Code Lab	**Saturday, Oct. 3** Last day to add quarter-length classes **Sunday, Oct. 4** Last day to drop a class with no record of grade
Week 3	Ch 9: Pointers	5	6	7 **Hw 2**	8	9 Code Lab	
Week 4	Ch 10: Strings	12	13	14 **Exam 1**	15	16 Code Lab	**Friday, Oct. 16** Last day to request pass/no pass grade
Week 5	Ch 11: Structures	19	20	21 **Hw 3**	22	23 Code Lab	
Week 6	Ch 13: Intro to classes	26	27	28 **Hw 4**	29	30 Code Lab	31
NOV Week 7	Ch 13: Intro to classes	2	3	4 **Exam 2**	5	6 Code Lab	
Week 8	Ch 14: More about classes	9 **Veteran's Day**	10	11 **Hw 5**	12	13 Code Lab	**Friday, Nov. 13** Last day to drop with a "W"
Week 9	Ch 14: More about classes Ch 17: Linked Lists	16	17	18 **Hw 6**	19	20 Code Lab	
Week 10	Ch 17: Linked Lists Ch 15: Inheritance Polymorphism	23	24	25	26	27	28
Week 11 **DEC**	Ch 15: Virtual Functions Ch 16: ADT, Templates	30	1	2 **Hw 7**	3	4 Code Lab	
Week 12	Final Exam	7	8	9 **Final EXAM: 1:45–3:45p.m.**	10	11	