



**90.211-001 Introduction to C Programming - Part 1**

**Tuesday 7:00-9:50 P.M.**

**Instructor:** Nancy Kiernan Bell

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**Prerequisites:** None

### **Course Description:**

This course is designed to provide students with an introduction to the processing of information by the computer, computer logic, memory, input/output processing, and programming in the C language. This course emphasizes the programming problem-solving process, problem organization, algorithms, coding, debugging, documentation and the elements of good programming style. Programming problems will include a wide variety of numeric and non-numeric applications. No prior programming experience necessary.

**Recommended Text:** Programming in C ( 4<sup>th</sup> edition) by Stephen Kochan

## **Attendance Policies**

Although the University does not require class attendance as a matter of institutional policy, course instructors may establish required attendance in their courses and specify penalties for student violations of such attendance requirements. Colleges also have this option and sometimes have adopted attendance policies for introductory courses and special learning situations.

**Attendance Policy:** Attendance is taken each week.

### **Attendance Requirements of the Veterans Administration**

In compliance with the requirements of the Veterans Administration (VA), all recipients of Veterans benefits, including eligible children of veterans, must certify their attendance at the University, under penalty of perjury through directions received with the student's benefits.

### **Absence of Students for Religious Beliefs**

Chapter 375, Acts of 1975 of the Commonwealth of Massachusetts, requires recognition of student religious beliefs as noted.

"Any student...who is unable, because of his religious beliefs, to attend classes or to participate in any examination, study, or work requirement on a particular day shall be excused from any such examination or study or work requirements, and shall be provided with an opportunity to make up such examination, study, or work requirement which he may have missed because of such absence on a particular day; provided, however, that such make up examination or work shall not create an unreasonable burden upon such school. No fees of any kind shall be charged by the institution for making available to the said student such opportunity. No adverse or prejudicial effects shall result to any student because of his availing himself of the provisions of this section."

*Students should inform the course instructor in writing of the day(s) when they will be absent. This should be done as early as possible in the semester and always prior to the day(s) the student will be absent for religious reason*

## Grading Policies

Homework Assignments	700 points
Midterm Exam – In class	150 points
Final Exam – In class	150 points
Total Possible Points	1,000 points

The following qualitative letter grades are employed by faculty members to characterize the quality of a student's work in a course:

A	Superior Work: Highest Quality – 950 to 1000 points	4.0
A-	High Honors Quality – 900 to 949 points	3.7
B+	High Quality – 880 to 899 points	3.3
B	Basic Honors Quality – 840 to 879 points	3.0
B-	Below Honors Quality – 800 to 839 points	2.7
C+	Above Satisfactory Quality – 780 to 799 points	2.3
C	Satisfactory – 740 to 779 points	2.0
C-	Below Satisfactory Quality – 700 to 739 points	1.7
D+	Above Minimum Passing – 650 to 699 points	1.3
D	Minimum Passing – 600 to 649 points	1.0
F	Failed – Below 600 points	0.0
FX	Failed due to Academic Misconduct (may not be replaced or deleted)	0.0

In addition to the above qualitative letter grades, the following symbols are used to designate special enrollment provisions or course statuses and do not affect the student's academic average:

AU	Audit
W	Withdrawn
CR	Credit Only
INC	Incomplete
W	Voluntary withdrawal (before deadline-to-withdraw indicated on academic calendar)
X	Administrative withdrawal
NC	No credit
P	Satisfactory Grade C- or Above
S	Satisfactory Grade C or Above
U	Unsatisfactory Failed
T	Transfer Credit
Y	Administrative Dismissal

## Midterm Grades

Midterm grades are not official and do not factor into grade point average and credits earned. Midterm grades do not appear on transcripts. The grade is submitted by the faculty to inform the student of their current grade status.

All grades listed above may be used for midterm grading along with the following two grades:

IDF - In Danger of Failing

FN - Fail Never Attended

## Pass-No Credit Course Registration

Students may elect to register on a pass-no credit basis for a maximum of four unrestricted elective courses. A student may not change his or her enrollment status from letter grade to pass-no credit or from pass-no credit to letter grade after the established deadline for adding a course.

A pass-no credit course cannot be presented in fulfillment of University general education requirements, major programs, minor programs, or specifically designated courses (collateral requirements) of an established curriculum. A grade of P indicates that a student's performance merits an evaluation of C- or better. NC indicates that a course has been failed but that such failure is without prejudice to the student's cumulative average. Although appropriate credits are granted to students when grades of P have been assigned, these credits are not qualitatively weighted and hence do not affect a student's academic average. The entry NC will not keep an otherwise qualified student from dean's list recognition.

## Satisfactory-Unsatisfactory Course Registration

Certain courses (e.g., practicum experiences, advanced seminars, and directed studies) may be graded as satisfactory or unsatisfactory. A grade of S indicates that a student's performance merits an evaluation of C or better. U indicates a course evaluation of less than C. Although appropriate credits are granted to students when grades of S have been assigned, these credits are not qualitatively weighted and hence do not affect a student's academic average. A grade of U indicates that attempted course credits have not been granted and is awarded without prejudice to a student's cumulative average.

## Incomplete Courses

The symbol INC (incomplete) is a temporary notation which is assigned for incomplete work in courses when the records of students justify the expectation that they will obtain a passing grade but for emergency reasons they have missed a minor part of the course requirement. **Any missed final examination or other final course evaluation requires a student explanation within 48 hours so the instructor can file the proper course notation with the Office of the Registrar.**

A student who has evidenced an unsatisfactory course record, who has failed to complete a major portion of an instructor's course requirements, or who fails to provide an instructor with a satisfactory reason for absence from a final examination or final course evaluation within the specified 48 hour period may not be assigned the letter symbol INC.

Responsibility for making arrangements with an instructor to complete all outstanding course work rests entirely with the student, who must complete all course work by the final week of classes for the succeeding semester.

At the end of the official make-up period (or, in the event of a substantiated student emergency, at the end of an extended make-up period), the Office of the Registrar will convert the temporary notation of INC to the appropriate permanent symbol. This permanent notation will be one of the following:

1) a letter grade which is filed by an instructor at the end of the make-up period to designate the final course standing of a student who has made up incomplete course requirements,

2) course work not completed by the final week of classes for the succeeding semester will convert to a grade of F, or

3) the letter symbol of X, which the dean of the college in which the student is enrolled as a degree candidate may authorize to designate that a student has withdrawn from the University after the end of the semester for documented medical or personal emergency (cf. University Withdrawal After the End of the Semester).

Limited extensions of the make-up period may be granted to students for serious medical reasons and for documented personal emergencies. Requests for such extensions are approved by the dean of the college in which students are enrolled as degree candidates and must be filed no later than one calendar week preceding the established deadline for instructors to submit final grades for incomplete courses.

## **Audited Courses**

A student may enroll in credit courses as an auditor with appropriate approval. Forms and instructions for registration as an auditor may be obtained from the Office of the Registrar. No charge is levied on full-time students for audited courses. No credit or grade will be recorded for an audited course, but the symbol AU will be listed on the permanent record. A change from audit to credit status, or from credit status to audit, may not be made after the deadline for adding a course (10th class day).

Students who have audited a course subsequently may not earn credit in the same course through tests of the College Level Examination Program or through other authorized examination procedures for course challenge.

## **Grade Changes**

At the end of each semester, grades are available to students via their self service account in ISIS. All course grades become a part of the student's official record upon instructor assignment and may not be changed except as specifically provided by University procedures. Corrections of grade-point averages automatically are authorized when grade reports are corrected by instructors and when specific courses are deleted from grade-point averages under provisions of University regulations governing repeated courses and course deletions.

Changes of grades other than the filing of grades for incomplete courses require the endorsement of the appropriate college dean. Grade changes may not be made on a student's permanent record after the deadlines cited in the academic calendar unless such changes have been authorized by appropriate college deans.

## **Course Grade Appeal Policy**

The instructor of the class is the primary authority with respect to a student's proficiency and final grade in that course. A student who believes that his or her final grade reflects an erroneous,

capricious, arbitrary, or prejudiced academic evaluation may appeal the grade. The academic judgment used in determining the merits of the grade to be awarded shall not be reviewable. This process does not apply to cases of academic dishonesty, which are adjudicated through the "academic dishonesty process."

1. The student may file an appeal of his or her complaint, in writing, to the instructor within 30 days after a final grade is posted to the student's record. The instructor must respond within 14 days of receiving the appeal.
2. If the student remains dissatisfied by the decision of the instructor under step (1), he or she may, within 14 days after formal receipt of the instructor's final decision, appeal, in writing, to the chairperson of the program (or the Dean of the College if the instructor is the chairperson) in which the course or other exercise or activity is offered. The chairperson must respond within 14 days of receiving the appeal. The decision may be: (a) that the appeal be dismissed; (b) if there is demonstrable evidence of an erroneous, arbitrary, capricious, or prejudiced academic evaluation, then the chairperson will recommend appropriate remedies that a grade be changed or the student be allowed an opportunity to retake an examination or other exercise; or (c) that another appropriate remedy be administered.
3. If no satisfactory resolution is reached in step (2) then the student or the instructor may appeal, in writing, to the Dean of the College within 14 days after formal receipt of the chairperson's final decision.
4. The Dean, after discussion with the appropriate parties, may resolve the grievance by agreement or render a decision within 21 days of receipt of the written appeal. The decision may be: (a) that the appeal be dismissed; (b) if the student provides demonstrable evidence of an erroneous, arbitrary, capricious, or prejudiced academic evaluation, then the Dean will recommend appropriate remedies that a grade be changed or the student be allowed an opportunity to retake an examination or other exercise; or (c) that another appropriate remedy be administered.
5. The decision of the Dean is final and not subject to additional appeal by either student or instructor. The appeals process ends at this step.
6. Department chairs are responsible for keeping a record of the appeal on file in the department until the student is no longer a student.

## **Course Requirements**

Within the policies listed below, faculty members are permitted to establish their examination and course requirements.

### **Course Examination Policies**

Final examinations are required for all undergraduate courses of the University unless exemptions have been granted by the department chairperson and the dean of the college. Exemption requests must be made by the end of the first month of the semester. Final examinations may not be given at a place or time other than those which have been specified by the Student Records Office.

There shall be no final examinations other than those administered during the final examination period. No hour examination shall be administered during the last five academic days of the semester unless exemption has been allowed by the college dean. Final take-home examinations may be submitted to instructors during the final examination period only. Take-home examinations may be submitted only on the day and time at which the Student Records Office has scheduled the final examination for the course in question.

## **Instructor Course Requirements**

By the end of the first full week of classes, instructors must distribute a written statement of requirements, pre-requisites and co-requisites for each course and section to all students and to the department chairperson. This statement must include a specification of the number and types of course evaluations to be employed throughout the semester (including approximate date and nature of the first evaluation), special requirements for completing assignments and taking examinations, and a definition of course attendance policy.

A minimum of three evaluations of student progress (written or oral examinations, written reports, recitations, laboratory techniques and reports, jury or performance evaluations) should be made in each course, with at least one evaluation being required during each half semester. Upon the request of a student, an instructor is required to provide a statement of the student's course progress.

Appeals of grades or grading policies arising from alleged violations of established or published policies must follow procedures cited under the heading Grading Policies. The terms "grade" and "grading policy" refer 1) to all grades awarded, 2) to the computation of grades examinations including final examinations, tests, quizzes, papers, essays, laboratory reports, practicum experiences, and any other kind of academic activity for which a grade of any kind is awarded, and 3) the final course grade which is submitted to the Student Records Office.

## **Computer Requirements:**

You may use any C/C++ compiler available to you. Computers are available at UMASS Lowell during specific times. We will be using Microsoft Visual C++ 2010 Express in class.

**vLab:** <http://www.uml.edu/IT/Services/vLabs/Client-Configurations/windows.aspx>

## **Resources:**

Students are encouraged to "use their resources wisely." Discussion among classmates and others is encouraged. However, programs are as individual as students. Any programs that resemble each other too closely will not receive full credit. Extra help is available after class.

## **E-mail Policies**

1. All communication will be through the UML e-mail system
2. Homework assignments, notes, and power points will be sent to your UML student email each week prior to the beginning of class.
3. Students may send questions to my email. If you do not get a response within 24 hours, please send the email again.

4. I will not accept any homework via e-mail
5. E-Mail Etiquette: It is expected that all email communication is professional, correct written English. This means no abbreviations, no casual use of language, misspellings or grammar mistakes.

**Disability Accommodation:**

Students with disabilities who require accommodations for access to and/or participation in this course must be registered with the Office of Student Disability Services.

**Homework Requirements:**

1. Source Code and Output – hard copy
2. Cover Page - Class symbol only
3. Source Code
  - a. Heading Requirements
    - i. Name
    - ii. Course number
    - iii. Problem Description
4. Grading Standards – See Rubric below
  - a. On Time
  - b. Heading Requirements
  - c. Meaningful variable names
  - d. Documentation
  - e. Industry Standard Indentation
  - f. Accurate Output
    - i. Format
    - ii. Solution
  - g. Minimum use of global variables
  - h. Use of concept
5. Due Dates:
  - a. Homework assignments are due next class
  - b. Partial credit will be awarded for homework that is 1 week late.
  - c. No credit will be awarded for homework that is more than 1 week late.

## Academic Integrity

The integrity of the academic enterprise of any institution of higher education requires honesty in all aspects of its endeavor. Maintaining academic integrity is therefore the responsibility of all faculty, staff, and students at the University of Massachusetts Lowell.

Academic dishonesty is prohibited in all programs of the University. Sanctions may be imposed on any student who has committed an act of academic dishonesty.

**Definitions of Academic Dishonesty**

Academic dishonesty includes but is not limited to:

Cheating - use, or attempted use, of trickery, artifice, deception, breach of confidence, fraud, or misrepresentation of one's academic work. Submission of the same work in its entirety for credit in two courses without obtaining the permission of the instructors constitutes cheating. Collaborating with others when not explicitly allowed by the instructor constitutes cheating.

Fabrication - falsification or invention of any information or citation in any academic exercise.

Plagiarism - representing, whether intentionally or unintentionally, the words or ideas of another as one's own work in any academic exercise.

Facilitating dishonesty - helping or attempting to help another commit an act of academic dishonesty, including substituting for another in an examination, misrepresenting oneself, or allowing others to represent as their own one's papers, reports, or academic works.

## **INITIATING CHARGES OF ACADEMIC DISHONESTY**

Any person who has reason to believe that a student has committed academic dishonesty should bring such information to the attention of the appropriate course instructor as soon as possible. The procedures outlined below are intended to provide the process by which sanction may be imposed if it appears that academic dishonesty has occurred, and by which students may appeal such sanctions.

These procedures apply to all students participating in academic classes and programs, including all graduate, undergraduate, and CSCE programs. The procedures associated with this policy are the only official procedures for making allegations of, issuing sanctions because of, or appealing charges of academic dishonesty.

Any instructor may initiate charges of academic dishonesty by following the procedures outlined below.

### **I. Determining Sanctions and Notification of Students**

- a. When academic dishonesty is suspected, the instructor (complainant) should bring the case to the attention of the complainant's chair and discuss an appropriate course of action/sanction.
- b. Possible sanctions include a reduction in grade in an assignment or exam; a zero or failing grade in an assignment or exam; a forced repeat of an assignment or exam; a reduction in grade in a course; a recommendation of a grade of FX (non-deletable failure); recommendation of suspension; or recommendation of dismissal.
- c. If a sanction is to be applied, the instructor must notify the student, in writing or orally, of the incident observed and the sanction that will be imposed. Such notification should be made within a reasonable period, not more than 14 days after recognizing the incident.
- d. The instructor must maintain a record of the notification.

## **Notification to the Provost by the Instructor**

- a. Notification to the Provost by the instructor must occur within a reasonable period, not more than 10 days after informing the student. The instructor must fill out a "[Notification of Academic Dishonesty Form](http://www.uml.edu/docs/notificationofacademicdishonesty_tcm18-3543.pdf)" (pdf) available online on Office of the Registrar's website at [www.uml.edu/docs/notificationofacademicdishonesty\\_tcm18-3543.pdf](http://www.uml.edu/docs/notificationofacademicdishonesty_tcm18-3543.pdf) and email or fax this form to the Provost or designee. In lieu of the form, an email with the necessary information will suffice.
- b. The Provost or designee will send the student official notification of the sanction via certified and electronic mail and include notification of the right to appeal. Such official notification must be sent to the student within a "reasonable" time frame, not to exceed 21 days of receipt of the "Notification of Academic Dishonesty Form."
- c. The Provost or designee also informs (in writing) the dean and chair of the complainant's department of the complaint and sanction.



d. The Office of the Provost will maintain this information and record the sanction. The record will be kept until the student graduates the University of Massachusetts Lowell. If there is a record of multiple complaints the provost or designee may apply more severe sanctions including suspension and dismissal.

If the student does not appeal the charges, the process is complete and the sanction is imposed.

### **First level of Appeal: Academic Dean**

If the student denies responsibility or believes that the sanction is too severe, the student may appeal the sanction to the Academic Dean of the college of the complainant's department or designee in writing, within 7 days of receiving notification of the sanction from the office of the provost. During the appeals process the student is expected to continue attending the class in which the sanction has been issued unless prohibited by department policy. The Academic Dean or designee will commence a review of the issues raised in the appeal and forward the decision to the office of the Provost as soon as practicable.

The Provost or designee must notify the student, by certified and electronic mail, and other relevant parties of the outcome of the appeal process. If the appeal is sustained on the grounds that the charge is not adequately supported then all records of the incident are destroyed. If the appeal is not sustained then records of the incident are maintained in the Office of the Provost.

### **Second level of Appeal: Office of the Provost**

The decision reached by the Academic Dean or designee may be appealed to the Provost or designee if the student believes that he or she did not receive due process.

### **Grounds for Appeal of Due Process**

An appeal shall be limited to a review of supporting documents and the process and outcome of the Academic Dean or designee for one or more of the following grounds:

- Bias by the Instructor, Academic Dean, or designee substantially influenced the outcome of the process to the detriment of the student.
- New, relevant information has come to light that was not available at the time of the hearing by the Academic Dean.
- Unusual procedures were followed or if the procedures outlined herein were not followed, to the detriment of the student.

Appeals may be filed by the student or complainant to the Provost or designee within 7 days of receipt of the decision. Such appeals shall be in writing and shall be delivered to the Provost or designee, and must be based on the "Grounds for Appeal" (above). The Provost or designee may decide to uphold the decision of the Academic Dean or designee or convene the Academic Integrity Appeals Board ("Board"). All decisions by the Provost or designee are final and may not be appealed. Such decisions will be made as soon as practicable.

The Provost or designee must notify the student, by certified and electronic mail, and other relevant parties of the outcome of the appeal process. If the appeal is sustained on the grounds that due process was not followed then all records of the incident are destroyed. If the appeal is not sustained then records of the incident are maintained in the Office of the Provost.

### **Academic Integrity Appeals Board**

*Membership:* The Academic Integrity Appeals Board is chaired by the Provost or designee. The Provost or designee will vote only in the case of a tie. The Board consists of a minimum of three faculty members chosen by the Provost or designee with no two members selected from the same College and cannot include a faculty member within the department initiating charges of academic dishonesty.

*Right to an Advisor:* A student may elect to be accompanied at all proceedings of the disciplinary process by an advisor of his or her choice. The advisor must be a current member of the faculty, staff, or student body of the University. The role of the advisor in all cases is limited to advising the student during the academic dishonesty proceedings. The advisor may not speak on behalf of the student, or examine or cross-examine a witness, or address the process publicly during proceedings.

*Accommodations for Students with Disabilities:* The University of Massachusetts Lowell is committed to providing appropriate accommodations to students with documented disabilities so that all students have meaningful access to all University of Massachusetts Lowell programs and services, including the Academic Integrity Process.

All those with disabilities who are involved in the Academic Integrity Process, including accusers and accused students, advisors, and witnesses may seek accommodations for any stage of the Academic Integrity Process. Any student requesting an accommodation must do so far enough in advance to allow the request to be reviewed and an appropriate accommodation identified and implemented.

A request for accommodation can be made to the Director of Disability Services ("Director"), the designated Academic Dean, or the Provost. The requests will be reviewed by the Director, who will apply appropriate legal standards and University policies and procedures to determine what accommodation, if any, is appropriate. The student will be given an opportunity to have an interactive role in the review process (i.e., to discuss the request with the Director, before the Director completes the review). The Director may require the student to provide appropriate documentation from qualified health care professionals to support the request. In addition, the Director may consult, as appropriate, with the Academic Dean or the Provost, or another expert of the Director's choosing. The Director will make a decision in light of the student's particular disabilities and the nature of the Academic Integrity Process, upon reviewing any consultations, relevant documentation and relevant previous accommodations provided to the student. The student will be given an explanation of the Director's determination.

If the student requesting accommodations disagrees with the Director's determination on appropriate accommodations, he may appeal the determination to the Office of ADA Compliance (Office of Equal Opportunity and Outreach) within 7 days of the Director's decision.

## **Appeal of Provost Sanctions (Suspension or Dismissal)**

Any additional sanctions applied by the Provost following multiple incidents of academic dishonesty must be appealed to an Academic Integrity Appeals Board as described above. The Board will be chaired by a designee of the Provost who has not participated in the process leading to the charges.

The Provost or designee must notify the student, by certified and electronic mail, and other relevant parties of the outcome of the appeal process. If the appeal is sustained on the grounds that the charge is not adequately supported then all records of the incident are destroyed. If the appeal is not sustained then records of the incident are maintained in the Office of the Provost.

C Programming  
INFO.211-001

	<b>Topic</b>	<b>Homework Assignment</b>
1	Introduction, Visual C++ Compiler, vLabs, Compiling, Running and Printing your first program	Get the book: Programming in C Download the compiler(optional) Readings: Ch#1: Some Fundamentals Ch #2: Compiling and Running your first program Ch #3: Variables, Data Types, and Arithmetic Expressions
2	Ch #3: Variables, Data Types & Arithmetic Expressions	Reading: Ch #5: Making Decisions  Graded Practice: Program #1
3	Ch #5: Making Decisions if, if-else, and switch statements Program #1 is due	Reading: Ch #4: <b>for</b> Loops  Graded Practice Program #2
4	Ch #4: Program Looping for loops Program #2 is due	Reading: Ch #4 while loops and do-while loops  Graded Practice Program #3
5	Ch #4: Program Looping While loops and do-while loops Program #3 is due	Graded Practice Program #4
6	Midterm Exam review Programs #4 is due	Non-graded practice program Study for Midterm Exam
7	Midterm Exam Today	Reading: Ch #6: Working with Arrays
8	Review Midterm Exam Ch #6: Working with Arrays Single dimensional arrays	Non-Graded Practice Program
9	Ch #6: Working with Arrays Bubble sort, Data Analysis	Graded Practice Program #5
10	Ch #6: Working with Arrays Multi-dimensional arrays Program #5 is due	Reading: Ch #7: Working with Functions  Graded Practice Program #6

11	Ch #7: Working with Functions gram #6 is due	Pro	Non-graded Practice Program
12	Ch #7: Working with Functions		Graded Practice Program #7
13	Ch #7: Working with Functions Program #7 is due Final Exam Review		Non-graded practice program Study for Final Exam
14	Final Exam Final Program is due		Great Job!