CSC 362.001: Computer Systems

Professor: Richard Fox
Phone: (859) 572-5334
Semester: Fall 2017
Office: GH 444
Class Meeting Time: MWF 1:00 pm - 1:50 pm
Class Meeting Place: GH 250
Email: foxr@nku.edu
Web: http://www.nku.edu/~foxr/
Office Hours: MW 9:00 – 9:45 am, F 9:00 – 11:00 am, and by appointment

Textbooks:

The instructor will also provide materials for IBM PC Assembly Language.

Prerequisites and Credits:
C or better in CSC 360. 3 Credit hours. This course is required for CSC majors and is recommended for all students wishing to enroll in the MSCS program. This course is also required for CET majors who choose the Computer Science Emphasis. CSC 362 or CSC 364 is required for all Computer Science minors.

Course Topics:

Student Learning Outcomes:
By the end of this course, students will learn to:
- understand the internal workings of the computer at both a hardware and software level including binary representations and binary arithmetic operations
- apply Boolean logic to create digital circuits to solve various computer functions
- understand the role and structure of the CPU, memory, I/O system, bus and interrupt system including the fetch-execute cycle, memory hierarchy and the role of synchronization
- understand and apply a basic machine instruction set and IBM PC assembly to see how machine these activities are described at a programming level
- understand and apply the C programming language, with particular emphasis on pointers and arrays, so that the student can understand the interplay between high-level language constructs and how those instructions are carried out at the machine language and hardware levels

This course prepares students for more advanced topics in Computer Architecture and Operating Systems.

Course Materials:
This course uses the instructor’s website (not Blackboard!). See http://www.nku.edu/~foxr/CSC362. This site will contain all lecture notes (PowerPoint slides), handouts/assignments, sample programs and sample problem solutions. Download these items at your leisure. It is your responsibility to keep an eye on this website during the semester for new material.
**Student Assessment:**

Student grades will be determined by the student’s performance on:

- 4 homework assignments to test the student’s understanding of concepts
- 6 programming assignments to test the student’s ability to solve problems in C and assembly language
- 4 exams to test the student’s ability to solve problems and understand concepts

The combined homework and programming assignments are worth 50% of your grade. Three midterm exams are worth a combined 33% of your grade. The final exam is worth the remaining 17% of your grade. The grading scale (subject to curve if necessary) is:

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<tr>
<th>Grade</th>
<th>Points</th>
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<tbody>
<tr>
<td>A:</td>
<td>100-93</td>
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<tr>
<td>A-</td>
<td>92-90</td>
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<tr>
<td>B+:</td>
<td>89-87</td>
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<tr>
<td>B</td>
<td>86-83</td>
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<tr>
<td>B-</td>
<td>82-80</td>
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<tr>
<td>C+:</td>
<td>79-77</td>
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<tr>
<td>C</td>
<td>76-73</td>
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<td>C-</td>
<td>72-70</td>
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<td>D+</td>
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<td>D</td>
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<td>F</td>
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Mid-term grades will be posted in myNKU by October 18. The grade is *not a predictor of your final grade* but merely your grade at that point of the semester. The last date to drop with a grade of W is Monday, October 30.

**Schedule of topics and readings:**


**Homework and Programming Information and Policies:**

There will be a number of homework and programming assignments. Due dates will be provided when each assignment is provided to the class. All assignments are due at the beginning of the class period. Late assignments will be accepted with a penalty of 10% per day late, however, homework assignments **will not be accepted once the answer key for that homework has been provided** to the students (on some assignments, answer keys will be passed out the day the assignments are due, thus prohibiting late submissions). All homework assignments **must be** word processed (figures and other answers that would be awkward to type may be hand drawn/written). Please submit your assignments as hardcopies (not email) in person or by having someone reliable drop it off if you cannot attend class. Email submissions are only allowed in emergencies. If submitted by email, it must be received at least 2 hours before class time to be considered on time. Make sure your name appears at the top of any assignment (in programs, place it in comments). All homework and programming assignments are **individual assignments** meaning that students should work alone at all times except when seeking clarification. If the instructor suspects students of copying off of each other or working together, the instructor will give a grade of 0 on those assignments and warn the students. A second offense will cause disciplinary action.

Programming assignments will be in C and Intel assembly language. The assembly programs will be embedded from within your C code, so you will not need any special software other than a Windows version of C (or C++), such as Visual C++ or Visual Studio.Net.

**Absentee Policy**

For financial aid purposes, the University is now requiring that attendance be monitored during the first week of class. A student will be **administratively dropped** if that student has not attended class during the first week and has not previously contacted the instructor. If for whatever reason you cannot attend class during the first week, contact the instructor to inform the instructor of your intention of staying in the class. You will receive no further warnings!

Aside from this first week, the instructor will not take attendance. It is up to the student to attend class regularly and to determine what materials were missed in the event of an absence. If an assignment is due on a date that the student is absent, it is the student’s responsibility to make sure that the instructor receives the assignment prior to the beginning of class time (whether by Email or having someone reliable drop off the assignment to the instructor in his office, mailbox or classroom). If the student is to miss a class period when an exam is being given, the student **must** contact the instructor in advance to make arrangements for a **make-up exam**, otherwise the student will receive a 0 on that exam.
Credit Hour Policy Statement:
In accordance with federal policy, NKU defines a credit hour as the amount of work represented in the achievement of student learning outcomes (verified by evidence of student achievement) that reasonably approximates one hour (50 minutes) of classroom instruction and a minimum of two hours of out-of-class student work. For every course credit hour, a typical student should expect to spend at least three hours per week of concentrated attention on course-related work including, but not limited to, class meeting time, reading, reviewing, organizing notes, studying and completing assignments. At least an equivalent amount of time is expected for other academic activities such as online courses, laboratory work, internships, practica, studio work and other academic work leading to the award of credit hours.

Estimates of the time required for a typical student to complete course expectations are as follows:

| In-class: 3 hours/week * 15 weeks | 37.5 hours/semester |
| Reading/Studying: 2-3 hours/week * 15 weeks | 30-45 hours/semester |
| Assignments: 10 assignments * 6-8 hours apiece | 60-80 hours/semester |
| Total: | 145 hours/semester (approx. 9-10 hours/week) |

Students who do not spend an appropriate amount of time on this course will most likely obtain a poor grade and perhaps not pass the class.

Student Evaluation of Instructor and Course:
Northern Kentucky University takes Instructor and Course Evaluations very seriously as an important means of gathering information for the enhancement of learning opportunities for its students. It is an important responsibility of NKU students as citizens of the University to participate in the instructor and course evaluation process. During the week prior to the final exam, you will be asked to reflect upon what you have learned in this course, the extent to which you have invested the necessary effort to maximize your learning, and the role your instructor has played in the learning process. It is very important that you complete the online evaluations with thoughtfully written comments.

Student evaluations of courses and instructors are regarded as strictly confidential. They are not available to the instructor until after final grades are submitted, and extensive precautions are taken to prevent your comments from being identified as coming from you. Students who complete an evaluation for a particular course (or opt out of doing so in the evaluation) will be rewarded for their participation by having access to their course grade as soon as that grade is submitted by the instructor. On the other hand, any student who does not complete the course evaluation (or opt out of doing so in the evaluation) should expect to incur a two week delay in access to his or her course grade beyond the university's official date for grade availability. To complete online evaluations go to http://eval.nku.edu. Click on "student login" and use the same USERNAME and PASSWORD as used on campus.

In addition, you should be aware of:
- Evaluations can affect changes in courses. Evaluations without comments are less valuable and less credible than those filled out thoughtfully. Comments that are expressed well are more effective than those that are not.
- Positive feedback is just as important as criticism. Moreover, negative evaluations without any explanation or specifics are not especially useful.
- Once grades are submitted, all evaluations are read not only by the instructor, but also by the instructor’s department chairperson.
- Evaluations not only provide feedback to your instructor, but also provide information to the department chair for use in performance evaluations. This information affects reappointments, promotions, salaries, and teaching assignments.
**Student Honor Code:**

This Student Honor Code [the "Honor Code"] is a commitment by students of Northern Kentucky University, through their matriculation or continued enrollment at the University, to adhere to the highest degree of ethical integrity in academic conduct. It is a commitment individually and collectively that the students of Northern Kentucky University will not lie, cheat, or plagiarize to gain an academic advantage over fellow students or avoid academic requirements.

The purpose of the Honor Code is to establish standards of academic conduct for students at Northern Kentucky University and to provide a procedure that offers basic assurances of fundamental fairness to any person accused of violations of these rules. Each Northern Kentucky University student is bound by the provisions of the Honor Code and is presumed to be familiar with all of its provisions. Students also should aspire to conduct themselves in a manner that is consistent with the highest degree of ethical integrity in all matters, whether covered in the Honor Code or not. The success of this commitment begins in the diligence with which students uphold the letter and the spirit of the Honor Code. Students may view the complete honor code at [http://scra.nku.edu/Infostudents/Infostudents.html](http://scra.nku.edu/Infostudents/Infostudents.html).

**Classroom Expectations:**

Cellphones must be on vibrate (PLEASE!!) You may leave the classroom at any time other than during exams as long as you do so quietly. If you come in late, please be quiet. During an exam, you may leave to answer your phone, use the facilities, etc, but please inform the instructor before leaving. While the instructor is lecturing, please be quiet. Do not engage other students in conversation. You may ask questions at any time during a lecture. Please do ask questions and please ask for more example problems if you feel you need them. You are encouraged to bring a laptop to class if you feel it will help you.

**Student Retention and Accommodations Due to Disability:**

Students experiencing roadblocks to academic success may seek assistance from the Learning Assistance Programs (LAP). Financial, personal, and social concerns sometimes interfere with the dedicated focus needed to be successful in college. LAP helps students connect to academic and support services, create individual learning plans, and advance successfully towards graduation. Services including Norse Advising, student support services, testing and disability services, the math center, the writing center and tutoring. More information is available at [http://lap.nku.edu](http://lap.nku.edu). Call 859 572-5475 for an appointment or stop by University Center 170. You can apply for a tutoring session through TutorTrac at [https://tutortrac.nku.edu/tracweb40/default.html](https://tutortrac.nku.edu/tracweb40/default.html).

The University is committed to making reasonable efforts to assist individuals with disabilities in their efforts to avail themselves of services and programs offered by the University. To this end, Northern Kentucky University will provide reasonable accommodations for persons with documented qualifying disabilities. If you have a disability and feel you need accommodations in this course, you must present a letter to me from the Disability Programs and Services Office (SU 303), indicating the existence of a disability and the suggested accommodations. More information can be found at [http://disability.nku.edu](http://disability.nku.edu).

Any questions? Please ask!

The instructor reserves the right to alter the syllabus if circumstances dictate.