Syllabus for
CSC 231—Computers and Programming
3 Credit Hours
Fall 2006

I. COURSE DESCRIPTION

A study of computer structure, machine language, instruction execution, addressing techniques, digital representation of data, computer systems organization, logic design, microprogramming, interpreters, symbolic coding, assembler language, macros, program segmentation and linkage, systems and utility programs, and programming techniques. Assigns computer projects to illustrate basic machine structure and programming techniques in assembler language throughout the course.
Prerequisites: CSC 111.
Academic technology fee: $45.

II. COURSE GOALS

The goal of this course is to enable the student to do the following:

A. Understand the logical organization of computers in terms of word sizes, addressing modes, registers, and instruction types.
B. Discover the fundamental principles involved in developing computer software.
C. Learn to write directions to the computer using its basic instruction set.

III. STUDENT LEARNING OUTCOMES FOR THIS COURSE

After successfully completing this course, the student will be able to do the following:

A. Write and debug programs written in assembly language.
B. Write subroutines in assembly language which can be utilized within a main program written in a higher level language.
C. Describe the types of instruction formats and addressing modes encountered in typical assembly languages.

IV. TEXTBOOKS AND OTHER LEARNING RESOURCES

Required Materials
Textbooks
Tanenbaum, Andrew S., Structured Computer Organization, 4th Ed. Englewood Cliffs: Prentice-Hall, 1999.
Abel, Peter, IBM PC Assembly Language and Programming, 5th Ed. Englewood Cliffs: Prentice-Hall, 2001.
Hagelbarger, David, and Saul Fingerman, The Information Machine, Bell Telephone Laboratories (distributed in class).

V. POLICIES AND PROCEDURES

A. University Policies and Procedures
   1. Attendance at each class or laboratory is mandatory at Oral Roberts University. Excessive absences can reduce a student's grade or deny credit for the course.
   2. Students taking a late exam because of an unauthorized absence are charged a late exam fee.

3. Students and faculty at Oral Roberts University must adhere to all laws addressing

the ethical use of others' materials, whether it is in the form of print, video, multimedia, or computer software. By submitting an assignment in any form, the student gives permission for the assignment to be checked for plagiarism, either by submitting the work for electronic verification or by other means.

4. Final exams cannot be given before their scheduled times. Students need to check the final exam schedule before planning return flights or other events at the end of the semester.
5. Students are to be in compliance with University, school, and departmental policies regarding ePortfolio requirements. Students should consult the ePortfolio handbooks for requirements regarding general education and the students' majors.
   a. The penalty for not submitting electronically or for incorrectly submitting an ePortfolio artifact is a zero for that assignment.
   b. By submitting an assignment, the student gives permission for the assignment to be assessed electronically.

B. Department Policies and Procedures

1. Each student who uses the computer is given a user-name, password, and access to certain computer resources. These limited resources and privileges are given to allow students to perform course assignments. Abuse of these privileges will result in their curtailment. Students should note that the contents of computer directories are subject to review by instructors and the computer administrative staff.
2. A fee of $15.00 will be assessed for all late exams. This policy applies to all exams taken without notifying the professor prior to the regularly scheduled exam time, and to all exams taken late without an administrative excuse.

C. Course Policies and Procedures

1. Evaluation Procedures
   a. Grade scale:
   A=90-100; B=80-89; C=70-79; D=60-69; F=below 60

   b. Semester grade:

Research paper/e-folio artifact	20%	
Homework	20%	
PDP Homework	0%	
Programs	20%	
Exams/Quizes	20%	
Final exam	20%	
e-Portfolio compliance	0%	(noncompliance: -10%)
Total	100%	

2. Other Policies and Procedures
   a. Research paper/e-folio artifact (30%)
   The student will write . . . A hard copy will be submitted to the professor for grading and a copy will be will be submitted electronically for assessment.
   b. e-Portfolio compliance (0% or minus 10% for noncompliance) To be "compliant" the student will have correctly submitted the research paper electronically as an artifact for assessment. To be "noncompliant" the student has either not submitted or incorrectly submitted the research paper electronically. Noncompliance will result in a 1-% (one letter grade) reduction of the final grade for the course.
   [It is the student's responsibility to ensure that he/she is in compliance. Compliance is verified by checking for the assessment results in one's e-portfolio. If there is a problem you may receive notification by the professor/assessor through one's **ORU email address**.]
   c. This course participates in the CSC/Math Department Participation Development Points Program. The percentage of PDPs completed will be

placed in the grade book as an extra homework assignment and will add points to the homework total.

3. Homework assignments
Homework assignments and programming problems will be given regularly in class. Details of specific requirements will be given at that time.

4. Credit by Examination
Any student enrolled in this course may petition for credit by examination. Credit by examination requires a comprehensive examination which shows sufficient mastery of the content of this course to obtain a grade of C or better (70%). Any student desiring to take a comprehensive examination to obtain credit for this course must file an application with the chair of the Computer Science and Mathematics Department before the end of the sixth week of the term. The comprehensive examination will then be scheduled during the ninth week of the term.

VI. COURSE CALENDAR

Lesson	Week	Topic	
1	1	Introduction	
2-4	1-2	The Information Machine	Quiz
5-23	2-7	IBM PC Assembler	Assembler Program 1
24	8	EXAM I	
25	8	Multilevel Machines	
26-28	8-9	Systems Organization,	Quiz Assembler Program 2
29-33	9-11	Conventional Machines,	Quiz Assembler Program 3
34-36	11-12	Operating Systems,	Quiz Assembler Program 4
37-38	12	Assembly Language	Assembler Program 5
39	13	EXAM II	Assembler Program 6
			Assembler Program 7
40-44	13-14	Advanced Architecture	2 e-Portfolio Assignments
45	15	FINAL EXAM	

Course Inventory for ORU's Student Learning Outcomes

CSC 231—Computers and Programming
Fall 2006

This course contributes to the ORU student learning outcomes as indicated below:
Significant Contribution – Addresses the outcome directly and includes targeted assessment.
Moderate Contribution – Addresses the outcome directly or indirectly and includes some assessment.
Minimal Contribution – Addresses the outcome indirectly and includes little or no assessment.
No Contribution – Does not address the outcome.

The Student Learning Glossary at http://ir.oru.edu/doc/glossary.pdf defines each outcome and each of the proficiencies/capacities.

OUTCOMES & Proficiencies/Capacities		Significant Contribution	Moderate Contribution	Minimal Contribution	No Contribution
1	**Outcome #1 – Spiritually Alive** Proficiencies/Capacities				
1A	Biblical knowledge				X
1B	Sensitivity to the Holy Spirit				X
1C	Evangelistic capability				X
1D	Ethical behavior			X	
2	**Outcome #2 – Intellectually Alert** Proficiencies/Capacities				
2A	Critical thinking		X		
2B	Information literacy	X			
2C	Global & historical perspectives			X	
2D	Aesthetic appreciation			X	
2E	Intellectual creativity			X	
3	**Outcome #3 – Physically Disciplined** Proficiencies/Capacities				
3A	Healthy lifestyle				X
3B	Physically disciplined lifestyle				X
4	**Outcome #4 – Socially Adept** Proficiencies/Capacities				
4A	Communication skills		X		
4B	Interpersonal skills			X	
4C	Appreciation of cultural & linguistic differences		X		
4D	Responsible citizenship			X	
4E	Leadership capacity			X	