Computer Organization
CS 35101

Spring 2021

Lecture Classroom: 9:15 AM – 10:30 AM (Tue, Thur)
Instructor: Dr. Augustine Samba
Email: asamba@kent.edu, tel: 330-672-9868
Virtual Office: 10:30 AM – 12:30 PM on Tue & Thur
Other times by appointment
Teaching Assistant: Rahul Kashala, rkasthal@kent.edu

Course Description

This course describes functional overview of computer systems, interconnection of basic components, system performance measures, instruction set design, arithmetic logic unit, control unit, memory system, pipelining, interrupts and input-output.

Prerequisites: Minimum C grade or better in CS 13001 or minimum C grade in the following courses CS 13011 and CS 13012.

Course Learning Outcomes

By the end of the course, you will be able to:

▪ Explain the interaction between a program and the hardware of a computer system.
▪ Articulate the basics of logic design.
▪ Convert numbers between various numbering systems and perform arithmetic within these numbering systems.
▪ Code in assembly language
▪ Examine the performance of programs.
▪ Understand basic techniques used by hardware designers to improve performance.
▪ Understand the rationale for switching from sequential processing to parallel processing.

Topics to be Covered

▪ Computer Abstractions and Technology
▪ Arithmetic of Computers
▪ The processor
▪ Large and Fast: Exploiting Memory Hierarchy
▪ Basics of Logic Design
▪ Assemblers, Linkers, and the MARS simulator
▪ Additional Depth and/or Current Topics
Course Materials

The required textbook:

Assessment of Learning Outcomes

▪ Homework
There will be up to 4 written assignments and up to 4 lab programming assignments

▪ Examinations
There will be a midterm and a final examination, each designed to allow students to demonstrate mastery of the course concepts.
The Final Exam is scheduled on Wednesday, May 12, from 7:45 AM – 10 AM

Grading Information

<table>
<thead>
<tr>
<th>Exercises</th>
<th>CS 35101</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homework (Written)</td>
<td>30%</td>
</tr>
<tr>
<td>Homework (Programming)</td>
<td>20%</td>
</tr>
<tr>
<td>Midterm Exam</td>
<td>20%</td>
</tr>
<tr>
<td>Final Exam</td>
<td>30%</td>
</tr>
</tbody>
</table>

Grading Guidelines
Grades will be assigned based on the range of percentages indicated below:

<table>
<thead>
<tr>
<th>Grade Level</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>93% &lt; score &lt;= 100%</td>
</tr>
<tr>
<td>A-</td>
<td>90% &lt;= score &lt;= 93</td>
</tr>
<tr>
<td>B+</td>
<td>86% &lt;= score &lt; 90%</td>
</tr>
<tr>
<td>B</td>
<td>83% &lt;= score &lt; 86%</td>
</tr>
<tr>
<td>B-</td>
<td>80% &lt;= score &lt; 83%</td>
</tr>
<tr>
<td>C+</td>
<td>76% &lt;= score &lt; 80%</td>
</tr>
<tr>
<td>C</td>
<td>73% &lt;= score &lt; 76%</td>
</tr>
<tr>
<td>C-</td>
<td>70% &lt;= score &lt; 73%</td>
</tr>
<tr>
<td>D+</td>
<td>66% &lt;= score &lt; 70%</td>
</tr>
<tr>
<td>D</td>
<td>63% &lt;= score &lt; 66%</td>
</tr>
<tr>
<td>F</td>
<td>score &lt; 63%</td>
</tr>
</tbody>
</table>

Academic Honesty

Cheating means to misrepresent the source, nature, or other conditions of your academic work (e.g., tests, papers, projects, assignments) so as to get underserved credit. The use of the intellectual property of others without giving them appropriate credit is a serious academic offense. The University considers cheating and plagiarism very serious offenses and provides for sanctions up to and including dismissal from the University or revocation of a degree. The University’s administrative policy and procedures regarding student cheating and plagiarism can
be found in the University Policy Register, 3-01.8. By submitting any material in this (or any other class) you are certifying that it is free of plagiarism.

**Withdrawal Deadline**

Withdrawal from any or all courses is permitted through the 10th week of the semester.

**Students with Disabilities**

University policy 3342-3-01.3 requires that students with disabilities be provided reasonable accommodations to ensure their equal access to course content. If you have a documented disability and require accommodations, please contact the instructor at the beginning of the semester to make arrangements for necessary classroom adjustments. Please note, you must first verify your eligibility for these through the Student Accessibility Services (contact 330-672-3391 or visit [www.kent.edu/sas](http://www.kent.edu/sas) for more information on registration procedures).

**Proper Enrollment**

Students have responsibility to ensure they are properly enrolled in classes. You are advised to review your official class schedule (using Student Tools in FlashLine) during the first two weeks of the semester to ensure you are properly enrolled in this class and section. Should you find an error in your class schedule, you have until cut-off date provided by the Graduate Office to correct the error. If registration errors are not corrected by the cut-off date and you continue to attend and participate in classes for which you are not officially enrolled, you are advised now that you will not receive a grade at the conclusion of the semester for any class in which you are not properly registered.

**Additional Information**

All items in this syllabus are subject to change at the discretion of the instructor and/or the office of academic affairs.

- **LIBRARY SUPPORT**

Extensive library resources and services are available online, 24 hours a day; seven days a week at [http://www.library.kent.edu/page/10599](http://www.library.kent.edu/page/10599).

Information and Library Services provides research assistance in creating search strategies, selecting relevant databases, and evaluating and citing resources in a variety of formats via its Ask a Librarian service: [http://www.library.kent.edu/page/13977](http://www.library.kent.edu/page/13977).