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| **ELEMENT** | **CONTENT** |
| DEPARTMENT | CIS |
| AUTHOR (S) | Craig Damon, C.J. Wang |
| COURSE NUMBER | **CIS 2010** |
| COURSE TITLE | **Computer Organization** |
| SHORT TITLE | Computer Org |
| COURSE LEVEL | 2000 |
| DATE CREATED | 2/4/2014 |
| CHECKED/CHANGED | 2/9/2017 |
| PREREQUISITES | C- or better in CIS 2025 or 2262 or 2271 |
| COREQUISITES | CIS 1120 or MAT 2120 |
| RESTRICTIONS |  |
| SPECIAL FEES | No |
| CREDITS | 4 |
| HOURS | 3 hours of lecture, 2 hours of lab per week |
| SEMESTER | Spring |
| COURSE DESCRIPTION | In this course, the student gains a basic understanding of computer hardware through introduction to binary data representation, pointers, and memory through the C programming language. This understanding expands to include the functioning of the CPU including registers, ALU, and simple I/O and culminates in an introduction to assembly language. |
| SUGGESTED TEXTS |  |
| OPTIONAL TEXTS |  |
| COURSE OUTCOMES | The successful student will be able to:   1. Write simple programs in C language 2. Write simple functions in assembly language 3. Describe the functioning of and work effectively with pointers and modern memory layout 4. Identify and describe the components of the CPU |
| COURSE CONTENT | 1. Binary representation of data 2. Pointers and memory layout 3. C programming language 4. Memory hierarchy 5. CPU 6. Data instructions 7. Branch instructions 8. Assembly language programming 9. Busses 10. I/O 11. Additional topics as time permits |
| LAB/STUDIO OUTCOMES | The successful student will be able to:   1. Use standard programming tools to compile and link C programs 2. Use standard programming tools to examine and understand the assembly language generated by C programs 3. Use standard programming tools to compile assembly language functions and link them with C programs 4. Identify basic hardware components and perform basic maintenance operations such as installing or upgrading memory DIMMs, disk drives, or PCI cards |
| LAB/STUDIO CONTENT | 1. C or assembly language programming 2. Hands-on hardware work |
| LECTURE CAPACITY | 32 |
| LAB CAPACITY | 16 |
| GRADED OR P/NP | Graded |
| EVALUATION | Attendance, participation, exams, quizzes, homework, lab reports |
| DELIVERY METHOD | LEC, LAB |
| ROOM REQUIREMENTS | CIS lab for lab |
| AUTHOR’S NOTES |  |