

CSC 137: COMPUTER ORGANIZATION

In Workflow

1. CSC Committee Chair (shaverdian@csus.edu;%20jouyang@csus.edu)
2. CSC Chair (faroughi@csus.edu)
3. ECS College Committee Chair (figgess@csus.edu)
4. ECS Dean (kevan@csus.edu)
5. Academic Services (torsetj@csus.edu;%20cnewsome@skymail.csus.edu)
6. Senate Curriculum Subcommittee Chair (curriculum@csus.edu)
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8. Dean of Graduate (cnewsome@skymail.csus.edu)
9. Catalog Editor (torsetj@csus.edu)
10. Registrar's Office (w lindsey@csus.edu)
11. PeopleSoft (PeopleSoft@csus.edu)

Approval Path

1. Fri, 25 Sep 2020 07:04:07 GMT
Anna Baynes (shaverdian): Approved for CSC Committee Chair
2. Mon, 28 Sep 2020 17:57:24 GMT
Nikrouz Faroughi (faroughi): Rollback to CSC Committee Chair for CSC Chair
3. Mon, 28 Sep 2020 18:22:47 GMT
Anna Baynes (shaverdian): Rollback to Initiator
4. Tue, 29 Sep 2020 06:59:43 GMT
Anna Baynes (shaverdian): Approved for CSC Committee Chair
5. Wed, 30 Sep 2020 00:39:34 GMT
Nikrouz Faroughi (faroughi): Approved for CSC Chair
6. Mon, 12 Oct 2020 21:52:35 GMT
Gareth Figgess (figgess): Rollback to CSC Committee Chair for ECS College Committee Chair
7. Mon, 12 Oct 2020 22:34:37 GMT
Anna Baynes (shaverdian): Approved for CSC Committee Chair
8. Mon, 12 Oct 2020 23:26:30 GMT
Nikrouz Faroughi (faroughi): Rollback to CSC Committee Chair for CSC Chair
9. Tue, 13 Oct 2020 05:00:18 GMT
Anna Baynes (shaverdian): Approved for CSC Committee Chair
10. Tue, 13 Oct 2020 15:31:48 GMT
Nikrouz Faroughi (faroughi): Approved for CSC Chair
11. Fri, 16 Oct 2020 17:20:24 GMT
Gareth Figgess (figgess): Approved for ECS College Committee Chair
12. Fri, 16 Oct 2020 17:30:51 GMT
Kevan Shafizadeh (kevan): Approved for ECS Dean

Date Submitted: Mon, 28 Sep 2020 19:44:38 GMT

Viewing: CSC 137 : Computer Organization

Last edit: Fri, 16 Oct 2020 17:28:51 GMT

Changes proposed by: Nikrouz Faroughi (101019668)

Contact(s):

Name (First Last)	Email	Phone 999-999-9999
Nik Faroughi	faroughi@csus.edu	916-278-5843

Catalog Title:

Computer Organization

Class Schedule Title:

Computer Organization

Academic Group: (College)

ECS - Engineering & Computer Science

Academic Organization: (Department)

Computer Science

Will this course be offered through the College of Continuing Education (CCE)?

No

Catalog Year Effective:

Fall 2021 (2021/2022 Catalog)

Subject Area: (prefix)

CSC - Computer Science

Catalog Number: (course number)

137

Course ID: (For administrative use only.)

202416

Units:

3

In what term(s) will this course typically be offered?

Fall, Spring

Does this course require a room for its final exam?

Yes, final exam requires a room

Does this course replace an existing experimental course?

No

This course complies with the credit hour policy:

Yes

Justification for course proposal:

1. The prerequisite change is to avoid students worried about failing their current course from occupying enrollment. Our current course waitlists are filled.
2. The Computer Science department reviewed our courses based on current teaching practice and professional organization recommendations. This update is required for Computer Science program external accreditation.

Course Description: (Not to exceed 80 words and language should conform to catalog copy.)

Introduction to computer organization and architecture. Combinational devices, sequential and synchronized circuits, memory organization, CPU architecture and organization, bus structures, input/output, interrupts, DMA, memory hierarchy, introduction to instruction level parallelism, multithreading, and multiprocessing.

Are one or more field trips required with this course?

No

Fee Course?

No

Is this course designated as Service Learning?

No

Does this course require safety training?

No

Does this course require personal protective equipment (PPE)?

No

Course Note: (Note must be a single sentence; do not include field trip or fee course notations.)

none

Does this course have prerequisites?

Yes

Prerequisite:

CSC 28, CSC 60, CSC 130, not currently enrolled in CSC 137.

Prerequisites Enforced at Registration?

Yes

Does this course have corequisites?

No

Graded:

Letter

Approval required for enrollment?

No Approval Required

Course Component(s) and Classification(s):

Lecture

Lecture Classification

CS#01 - Large Lecture (K-factor=1 WTU per unit)

Lecture Units

3

Is this a paired course?

No

Is this course crosslisted?

No

Can this course be repeated for credit?

No

Can the course be taken for credit more than once during the same term?

No

Description of the Expected Learning Outcomes: Describe outcomes using the following format: 'Students will be able to: 1), 2), etc.'

1. Demonstrate the ability to use logic minimization techniques to design combinational and sequential circuits;
2. Calculate performance parameters such as signal propagation delay and maximum clock frequency to run a digital circuit;
3. Demonstrate the ability to design and analyze complex digital circuits including CPUs;
4. Distinguish basic and modern CPU architectures and processor organizations;
5. Distinguish basic memory organizations, memory interface, memory access, and be able to design simple memory units;
6. Analyze modern synchronous memory organizations, read/write access, and be able to determine performance parameters such as peak bandwidth.
7. Compare and contrast the evolution of modern personal computers from processor, memory, and I/O devices interconnections points of views;
8. Analyze input/output device interface mechanisms and access protocols including programmed and interrupt driven access, DMA, and USB host controller;
9. Analyze spatial and temporal access localities to design a more efficient and cost effective memory systems and be able to estimate average memory latency;
10. Analyze cache memory design and write policies as they impact performance;
11. Analyze virtual memory from hardware points of view;
12. Use HDL and simulation;

Assessment Strategies: A description of the assessment strategies (e.g., portfolios, examinations, performances, pre-and post-tests, conferences with students, student papers) which will be used by the instructor to determine the extent to which students have achieved the learning outcomes noted above.

Assignments and/or exams for LO 1-11

Projects for LO 12

Is this course required in a degree program (major, minor, graduate degree, certificate?)

Yes

Has a corresponding Program Change been submitted to Workflow?

No

Identify the program(s) in which this course is required:

Programs:

BS in Computer Science

Does the proposed change or addition cause a significant increase in the use of College or University resources (lab room, computer)?

No

Will there be any departments affected by this proposed course?

No

I/we as the author(s) of this course proposal agree to provide a new or updated accessibility checklist to the Dean's office prior to the semester when this course is taught utilizing the changes proposed here.

I/we agree

University Learning Goals

Undergraduate Learning Goals:

Competence in the disciplines
Integrative learning

Is this course required as part of a teaching credential program, a single subject, or multiple subject waiver program (e.g., Liberal Studies, Biology) or other school personnel preparation program (e.g., School of Nursing)?

No

GE Course and GE Goal(s)

Is this a General Education (GE) course or is it being considered for GE?

No

Please attach any additional files not requested above:

CSC137.docx

Reviewer Comments:

Nikrouz Faroughi (faroughi) (Mon, 28 Sep 2020 17:57:24 GMT): Rollback: incorrect file was attached.

Anna Baynes (shaverdian) (Mon, 28 Sep 2020 18:22:47 GMT): Rollback: File change

Gareth Figgess (figgess) (Mon, 12 Oct 2020 21:52:35 GMT): Rollback: As requested

Nikrouz Faroughi (faroughi) (Mon, 12 Oct 2020 23:26:30 GMT): Rollback: update

Key: 1040