CDA 3101: Introduction to Computer Organization
Class Periods: Monday, Wednesday and Friday, 8:30 am – 9:20 am
Location: CAR 100
Academic Term: Fall 2019

Instructor:
Name: Prabhat Mishra
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Office Phone Number: 352 505 1880
Office Hours: Wednesday, 12:00 – 2:00 pm in CSE 568

Teaching Assistants: *TBD*

Course Description
Organization of computing systems. Logical basis of computer structure. Machine representation of instructions and data, flow of control, and basic machine instructions. Assembly language programming.
3 credits.

Course Pre-Requisites / Co-Requisites
(COP 3504 or COP 3503) and MAC 2233 and (MAC 2311 or MAC 3472) and COT 3100

Course Objectives
The goal of this course is to develop a clear understanding of the basic organization of computing systems. It covers logical basis of computer structure, machine representation of instructions and data, flow of control and basic machine instructions. It also includes description of assembly language instructions and programming using ARM, processor pipeline designs and memory hierarchy systems.

Materials and Supply Fees: *None*

Professional Component (ABET):
This course is crucial to meet the professional components of the ABET-accredited Computer Engineering (CpE) program. It allows us to evaluate the ability of the students to apply their knowledge in mathematics, science and engineering to design processor-based systems as well as identify, formulate and solve engineering problems.

Relation to Program Outcomes (ABET):

Outcome	Coverage*
a. an ability to apply knowledge of mathematics, science, and engineering	High
b. an ability to design and conduct experiments, as well as to analyze and interpret data	
c. an ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability	Medium
d. an ability to function on multidisciplinary teams	
e. an ability to identify, formulate, and solve engineering problems	High
f. an understanding of professional and ethical responsibility	
g. an ability to communicate effectively	
h. t he broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context	

i. a recognition of the need for, and an ability to engage in life-long learning	
j. a knowledge of contemporary issues	
k. an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.	

*Coverage is given as high, medium or low. An empty box indicates that this outcome is not covered or assessed in the course.

Required Textbooks and Software
- Computer Organization and Design - The Hardware / Software Interface
- David Patterson, John L. Hennessy, Morgan Kaufmann Publishers
- ARM Edition, 2017
- ISBN: 9780128017333

Recommended Materials: *None*

Course Schedule

- Digital Logic and Number Representation

- Assembly Language

- Arithmetic for Computers

- The Processor

- Memory Hierarchy

- Parallel Processors from Client to Cloud

- Storage Systems

- Verification of Processor Architectures

Attendance Policy, Class Expectations, and Make-Up Policy
Students are expected to attend the lectures and actively participate in class discussions.
Excused absences must be consistent with university policies in the Graduate Catalog
(http://gradcatalog.ufl.edu/content.php?catoid=10&navoid=2020#attendance) and require appropriate
documentation. Additional information can be found here:
https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx

Evaluation of Grades

Assignment	Total Points	Percentage of Final Grade
Homeworks (5)	20 each	25%
Projects (2)	10 each	10%
Attendance and Quizzes	50	5%
Midterm Exam	100	25%
Final Exam	120	35%
		100%

Grading Policy

Percent	Grade	Grade Points
90.0 - 100.0	A	4.00
86.0 - 89.9	A-	3.67
82.0 - 85.9	B+	3.33

78.0 – 81.9	B	3.00
74.0 - 77.9	B-	2.67
70.0 - 73.9	C+	2.33
66.0 – 69.9	C	2.00
62.0 - 65.9	C-	1.67
58.0 - 61.9	D+	1.33
54.0 - 57.9	D	1.00
50.0 - 53.9	D-	0.67
0 - 49.9	E	0.00

More information on UF grading policy may be found at:
http://gradcatalog.ufl.edu/content.php?catoid=10&navoid=2020#grades
https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx

Students Requiring Accommodations
Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565, https://www.dso.ufl.edu/drc) by providing appropriate documentation. Once registered, students will receive an accommodation letter which must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester.

Course Evaluation
Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations at https://evaluations.ufl.edu/evals. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at https://evaluations.ufl.edu/results/.

University Honesty Policy
UF students are bound by The Honor Pledge which states, "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment." The Honor Code (https://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor or TAs in this class.

Commitment to a Safe and Inclusive Learning Environment
The Herbert Wertheim College of Engineering values broad diversity within our community and is committed to individual and group empowerment, inclusion, and the elimination of discrimination. It is expected that every person in this class will treat one another with dignity and respect regardless of gender, sexuality, disability, age, socioeconomic status, ethnicity, race, and culture.

If you feel like your performance in class is being impacted by discrimination or harassment of any kind, please contact your instructor or any of the following:
• Your academic advisor or Graduate Program Coordinator
• Robin Bielling, Director of Human Resources, 352-392-0903, rbielling@eng.ufl.edu
• Curtis Taylor, Associate Dean of Student Affairs, 352-392-2177, taylor@eng.ufl.edu
• Toshikazu Nishida, Associate Dean of Academic Affairs, 352-392-0943, nishida@eng.ufl.edu

Software Use
All faculty, staff, and students of the University are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the

individual violator. Because such violations are also against University policies and rules, disciplinary action will be taken as appropriate. We, the members of the University of Florida community, pledge to uphold ourselves and our peers to the highest standards of honesty and integrity.

Student Privacy
There are federal laws protecting your privacy with regards to grades earned in courses and on individual assignments. For more information, please see: https://registrar.ufl.edu/ferpa.html

Campus Resources:

Health and Wellness

> **U Matter, We Care:**
> Your well-being is important to the University of Florida. The U Matter, We Care initiative is committed to creating a culture of care on our campus by encouraging members of our community to look out for one another and to reach out for help if a member of our community is in need. If you or a friend is in distress, please contact umatter@ufl.edu so that the U Matter, We Care Team can reach out to the student in distress. A nighttime and weekend crisis counselor is available by phone at 352-392-1575. The U Matter, We Care Team can help connect students to the many other helping resources available including, but not limited to, Victim Advocates, Housing staff, and the Counseling and Wellness Center. Please remember that asking for help is a sign of strength. In case of emergency, call 9-1-1.
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> **Counseling and Wellness Center:** http://www.counseling.ufl.edu/cwc, and 392-1575; and the University Police Department: 392-1111 or 9-1-1 for emergencies.
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> **Sexual Discrimination, Harassment, Assault, or Violence**
> If you or a friend has been subjected to sexual discrimination, sexual harassment, sexual assault, or violence contact the **Office of Title IX Compliance**, located at Yon Hall Room 427, 1908 Stadium Road, (352) 273-1094, title-ix@ufl.edu
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> **Sexual Assault Recovery Services (SARS)**
> Student Health Care Center, 392-1161.
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> **University Police Department** at 392-1111 (or 9-1-1 for emergencies), or http://www.police.ufl.edu/.

Academic Resources

> **E-learning technical suppor**t, 352-392-4357 (select option 2) or e-mail to Learning-support@ufl.edu. https://lss.at.ufl.edu/help.shtml.
>
> **Career Resource Center**, Reitz Union, 392-1601. Career assistance and counseling. https://www.crc.ufl.edu/.
>
> **Library Support**, http://cms.uflib.ufl.edu/ask. Various ways to receive assistance with respect to using the libraries or finding resources.
>
> **Teaching Center**, Broward Hall, 392-2010 or 392-6420. General study skills and tutoring. https://teachingcenter.ufl.edu/.
>
> **Writing Studio, 302 Tigert Hall**, 846-1138. Help brainstorming, formatting, and writing papers. https://writing.ufl.edu/writing-studio/.
>
> **Student Complaints Campus**: https://www.dso.ufl.edu/documents/UF_Complaints_policy.pdf.
>
> **On-Line Students Complaints**: http://www.distance.ufl.edu/student-complaint-process.