

COURSE SYLLABUS

ECE0832: Digital World 20/20

Electrical and Computer Engineering Department
College of Engineering
Temple University

Course Description: This course covers the fundamental principles of digital information capture, compression, storage, transmission, and management. The course intends to provide an overall view of the information infrastructure both at the implementation hardware and application software level suitable for non-engineering majors.

Instructor: Shianling Wu, swu@temple.edu

Textbook(s): Course Slides

Prerequisites: Algebra

Class Schedule: 10:00-10:50 MWF (ENGR-309) for ECE0832-004
02:00-02:50 MWF (ENGR-309) for ECE0832-006

Office Hours: 12:00-01:00 MWF (ENGR-709, 1st office on left, in front of the elevator): Tell instructor @ class before the visit.

Resources:

Reference book: Information Technology Inside and Outside, by David Cyganski and John A. Orr, Prentice Hall, 2001, ISBN 0-13-011496-0

Course Webpage: <http://blackboard.temple.edu>

Russell Conwell Educational Services Center: <http://www.temple.edu/rcc>

Tuttleman Counseling Services: <http://www.temple.edu/counseling/>

Contribution of course to meeting the requirement of Criterion 5 (how course fits into the curriculum): The primary goal of this course is for students to learn how to understand and plan for the effects of new technologies in the work place. This course has been especially designed to target students from multiple disciplines. Students will gain literacy in the underlying principles and vocabulary of Digital Technology. They will acquire a solid background on the applications of Digital Technology and discover its impact on numerous areas through several fundamental examples.

Course Learning Objectives (CLO):

1. Understanding of the impact of engineering solutions in a global economic, environmental, and societal context (SO – H)
2. Ability to communicate effectively (SO – G)
3. Knowledge of contemporary issues (SO – J)

Student Outcome: G, H, J

Course Topics:

1. Information revolution: information, signal and message (CLO – 1, 3)
2. Representing information in binary: different number systems (CLO – 1)
3. Communicating with ones and zeros: protocols and error detection(CLO – 1, 3)
4. Internet (CLO – 1, 3)
5. Transmission systems (CLO – 1)
6. World Wide Web: evolution, structure, page formation, overall impact (CLO – 1, 2, 3)
7. Communication systems: Wired and Wireless (CLO – 1, 3)
8. Cyber and cyber physical security: preventative and corrective technologies and case studies (CLO – 1, 2, 3)
9. Data & image compression: analog & digital information representation, lossy and lossless compression (CLO – 3)
10. Internet of Things (CLO – 1, 2, 3)
11. Java programming language & software development (CLO – 3)
12. Applications (Apps) for iPhone (CLO – 3)

1 Grading Policies:

Attendance – 10%

Quizzes – 40%

Assignments – 20%

Presentation – 10%

Final Project – 20%

- Slides are shown during the class and posted on the Blackboard after the end of a chapter. Students should always take good notes during the class.
- There will be in-class quizzes & exams to test students' knowledge of the classroom material. The lowest quiz score will not be counted.
- Assignments are to be submitted at the beginning of the class. No late submission is accepted. .
- During the quizzes or exams, sit apart from each other, nothing should be on the desk, no calculators.

- An unexcused absence will result in a zero for quiz or exam.
- There will be NO make-ups for quizzes or exams except for legitimate excuses with written validation such as due to a serious medical condition.

2 Incomplete

There will be no incomplete granted except for serious medical problems. No incomplete will be given on the basis of missed exams.

3 Academic Rights and Responsibilities:

Freedom to teach and freedom to learn are inseparable facets of academic freedom. The freedom to learn depends upon appropriate opportunities and conditions in the classroom, on the campus, and in the larger community. The university and the faculty have a responsibility to provide students with opportunities and protections that promote the learning process in all its aspects. Students similarly should exercise their freedom with responsibility. <http://policies.temple.edu/PDF/99.pdf>

4 Disability Inclusion and Accessibility:

Temple University is committed to the inclusion of students with disabilities and provides accessible instruction, including accessible technology and instructional materials.

The process of requesting access and accommodations for this course is: (1) Advise me of the need for access or accommodations; (2) Contact Disability Resources and Services to request accommodations; (3) DRS will consult with me as needed about essential components of the program; (4) Present me with a DRS accommodation letter.

5 Academic Integrity

- Sharing of thoughts and ideas is encouraged; but NOT sharing of work, computer code, etc. Students are encouraged to discuss assignments and course material with classmates. However, discussion does NOT mean copying. Students may not use the codes found on the internet. All work turned in must be student's own work.
- Any copying, using unauthorized notes or other forms of cheating will result in a zero for that occurrence. For any incident of copying, the person who copied as well as the person who was copied from will receive zero. A second offense will result in an F for the course for all parties involved.

www.temple.edu/bulletin/Responsibilities_rights/responsibilities/responsibilities.shtm

6 Cell Phones

During classes, set your cell phone to silence mode. If you absolutely need to answer your cell phone, you should leave the classroom. During quizzes or exams, cell phones are to be placed in the backpack, on the floor.

7 Withdraw & Repeat Course policies

Starting in Fall 2013, you may withdraw from a course within the first two weeks and no record of that course will appear on your transcript. However from week three through nine week you may withdraw and will receive a “W” on your transcript. It should be noted that you are not allowed to withdraw from a course after week nine. You may not withdraw from the same course more than once. Also you may withdraw from no more than five courses during the duration of your undergraduate career. Students thinking about withdrawing from a course should consult with their instructor and must receive approval from their academic adviser. (policy #02.10.14)

The Repeat Course Policy - now, instead of only the highest grade occurrence of a class counting, only the lowest will be removed. Which means if you take a course three times, the two highest grades will be averaged together. (policy #02.10.12)

8 Student Inputs

Your input is considered very important not only to this semester's class but to those who will take this course in the future. If you have any comments concerning the book, the quizzes or tests, or the material presentation, please let me know, either by stopping by my office to talk, sharing your thoughts or ideas with your class representative or dropping off an anonymous note.

9 Student Outcome

At the end of the course, you shall have the/a

SO “G”	Ability to communicate effectively in writing, speaking and making presentations
SO “H”	Broad education necessary to understand the impact of technical and engineering solutions in a global, economic, environmental and societal context
SO “J”	Knowledge of contemporary issues including diversity