

Syllabus for EEL 6935

Fundamentals of Biometric Identification

1. Catalog Description

Methods and principles for the automatic identification/authentication of individuals. Technologies include fingerprint, face, and iris biometrics. Additional topics include biometric system design, performance evaluation, multi-modal biometric systems, and biometric system security.

Credits: 3

2. Pre-requisites and Co-requisites

Basic Mathematics – Knowledge and ability to use calculus, probability, and statistics are essential.

Programming Skills – Experience in a high level programming language such as C/C++ or MATLAB.

3. Course Objectives

The objectives of this course include to provide scientific foundations needed for the design, implementation, and evaluation of large scale biometric identification systems.

4. Contribution of course to meeting ABET professional component

For undergraduate courses only

5. Relationship of course to ABET program outcomes

For undergraduate courses only

6. Instructor: Dr. Damon L. Woodard

- a. Office location: 453 New Engineering Building
- b. Office hours: Tuesday and Thursday 5th period (11:45am – 12:35pm) or by appointment
- c. Telephone: (352) 273-2130
- d. E-mail address: dwoodard@ufl.edu
- e. Web site: <http://lss.at.ufl.edu>

7. Teaching Assistants

Subit Chakrabarti

Email address: subitc@ufl.edu

8. Meeting Times

- a. Tuesday 6th period (12:50 pm – 1:40 pm)
- b. Thursday 6th – 7th period (12:50 pm – 2:45 pm)

9. Meeting Location

BEN 328

10. Laboratory Schedule

None

11. Material and Supply Fees

None

12. Textbooks and Software Required

- a. No textbook is required. Readings will be assigned research articles.
- b. Mathematical solver software such as MATLAB(available at UF ECE terminal server available by remote login)

13. Course Outline

- a. Course Overview
- b. Biometrics Overview (History of Biometrics, Applications)
- c. Performance Evaluation / Biometric System Design Challenges
- d. Fingerprint Recognition
- e. Face Recognition
- f. Iris Recognition
- g. Multi-modal Biometric Systems
- h. Biometric System Security/Spoofing
- i. Biometric Template Protection

14. Attendance and Expectations

It is understood that all attendees will be focused on the lecture and will take every possible measure to minimize distractions for everyone (i.e. no newspapers, no cell phones, no PDAs, no iPods, no laptops, etc. unless instructed to use them for class, no newspapers, yes on-time attendance, and no early departures (unless noted and approved in advance)).

15. Grading – methods of evaluation

- a. Homework: **25%**
- b. Midterm Exam: **25%**
- c. Quizzes: **25%**
- d. Class Project: **25%**

16. Grading Scale:

Final grades will be computed using a straight scale. This scale assigns letter grades to the grade percentages as follows: [94, 100] is an A; [90, 94) is an A-; [88, 90) is a B+; [82, 88) is a B; [80, 82) is a B-; [78, 80) is a C+; [72, 78) is a C; [70, 72) is C-; [62, 70) is a D; [0, 62) is an E. Grades within 1% of a boundary between letter grades may be adjusted based upon attendance and participation in class.

17. Make-up Exam Policy

Makeup exam is contingent on appropriate justifications and legal documents (UF Dean of Students, certified physician, military active duty, judge for jury duty, etc.) Late assignments will receive a 10% deduction per day late.

18. Honesty Policy

All students admitted to the University of Florida have signed a statement of academic honesty committing themselves to be honest in all academic work and understanding that failure to comply with this commitment will result in disciplinary action. This statement is a reminder to uphold your obligation as a UF student and to be honest in all work submitted and exams taken in this course and all others.

19. Accommodation for Students with Disabilities

Students requesting classroom accommodation must first register with the Dean of Students Office. That office will provide the student with documentation that he/she must provide to the course instructor when requesting accommodation.

20. UF Counseling Services

Resources are available on-campus for students having personal problems or lacking clear career and academic goals. The resources include:

- University Counseling Center, 301 Peabody Hall, 392-1575, Personal and Career Counseling.
- SHCC mental Health, Student Health Care Center, 392-1171, Personal and Counseling.
- Center for Sexual Assault/Abuse Recovery and Education (CARE), Student Health Care Center, 392-1161, sexual assault counseling.
- Career Resource Center, Reitz Union, 392-1601, career development assistance and counseling.

21. Software Use

All faculty, staff and student 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.