1. Catalog Description – (3 credits) Advanced modular logic design, design languages, "finite" state machines and binary logic. Laboratory.

2. Pre-requisites - EEL 3701C

3. Course Objectives - To study the fundamentals, methodologies, and techniques for the structured design of digital systems, using the state of the art technologies and design environments and tools.

4. Contribution of course to meeting the professional component (ABET only – undergraduate courses) - 4 credits of Engineering Design

5. Relationship of course to program outcomes: Skills student will develop in this course (ABET only undergraduate courses) - EE2, a, c, e, k

6. Instructor – Dr. Greg Stitt
   a. Office location: 323 Benton
   b. Telephone: 392-5348
   c. E-mail address: gstitt@ece.ufl.edu
   d. Class Web site: www.gstitt.ece.ufl.edu
   e. Office hours: M W 10 a.m. – 11 a.m.

7. Teaching Assistant - TBD
   a. Office location:
   b. Telephone:
   c. E-mail address:
   d. Office hours:

8. Meeting Times – M W F 2\textsuperscript{nd}

9. Class/laboratory schedule, i.e., number of sessions each week and duration of each session - 3 class periods consisting of 50 minutes each

10. Meeting Location – 280 FLG

11. Material and Supply Fees - $119.61

12. Textbooks and Software Required -
   a. Title: Fundamentals of Digital Logic with VHDL Design
   b. Author: Brown, S. D. and Vranesic, Z. G.
   d. ISBN number:
   e. Hardware: Byte Blaster, available at UF bookstore for $50
13. Recommended Reading - None
   a. Title:
   b. Author:
   c. Publication date and edition:
   d. ISBN number:

14. Course Outline (provide topics covered by week or by class period) –
   I. Digital design building blocks and technologies
      • Review of commonly-used digital components: MUXes, deMUXes, decoders,
      • encoders, adders, flip-flops, counters, registers, etc. In addition, we will
        learn to
      • specify these components in VHDL.
      • Carry-look-ahead adders, ALUs, multipliers
      • Programmable logic devices: PAL's, PLA's, PROM's, CPLD's, and FPGA's
      • Memories - RAM, dRAM, and ROM
   II. Digital design methodology and techniques for finite state machines (FSM)
      and FPGA’s
      • op-down, modular design
      • Controller/controlled-component architecture
      • ASM fundamentals and design methods
      • Implementation methods - traditional, MUX, ROM, "one-hot"
      • Design and Implementation techniques using FPGA's
      • Testing and design for testing
      • Digital design Examples (labs)
   III. Design environments and tools (lab-intensive)
      • Design life cycle using model digital development environments
      • Design specification: graphical, VHDL
      • Logic synthesis
      • Simulation: functional and timing
      • Timing analysis
      • Device program
      • Testing

15. Attendance and Expectations - Attendance is highly recommended. Cell phones are to be silenced. No text messaging during class or exams.

Requirements for class attendance and make-up exams, assignments, and other work are consistent with university policies that can be found at:
https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx
Grading – Midterm1: 20%, Midterm2: 20%, Midterm3: 20%, Labs/Homework: 40%

16. Grading Scale – Final grade to be determined by curved average of exams and labs

“A C- will not be a qualifying grade for critical tracking courses. In order to graduate, students must have an overall GPA and an upper-division GPA of 2.0 or better (C or better). Note: a C- average is equivalent to a GPA of 1.67, and therefore, it does not satisfy this graduation requirement. For more information on grades and grading policies, please visit: https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx

17. Make-Up Exam Policy - If you have a University-approved excuse and arrange for it in advance, or in case of documented emergency, a make-up exam will be allowed and arrangements can be made for making up missed work. University attendance policies can be found at: https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx

Otherwise, make-up exams will be considered only in extraordinary cases, and must be taken before the scheduled exam. The student must submit a written petition to the instructor two weeks prior to the scheduled exam and the instructor must approve the petition.

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.

“…failure to comply with this commitment will result in disciplinary action compliant with the UF Student Honor Code Procedures (http://www.dso.ufl.edu/sccr/procedures/honorcode.php)

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:
   · UF Counseling & Wellness Center, 3190 Radio Rd, 392-1575, psychological and psychiatric services.
   · Career Resource Center, Reitz Union, 392-1601, career and job search services.

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.