SYLLABUS: CEN 6075, SOFTWARE SPECIFICATION
Fall 2016

Description: CEN 6075, Software Specification, is a graduate-level course on the concepts, principles, and techniques related to software and systems requirements engineering (RE). Topics include requirements elicitation, analysis, validation, and documentation techniques, the Volere requirements process framework, and an overview of formal software specification. Students will practice the techniques presented in class via individual and/or group exercises and (possibly) a term project.

Prerequisites:
(1) Successful completion of an upper division undergraduate or graduate-level software engineering survey course (such as CEN 3031/5035), or comparable professional experience. (Students currently or recently employed as software engineering professionals automatically meet this requirement.) If you do NOT meet this requirement, you can instead register for CEN 5035, Software Engineering, which is also being offered this semester.
(2) Familiarity with programming using a high-level language (C, C++, JAVA, etc.); basic knowledge of algorithms, data structures, and discrete math.

Instructor: Steve Thebaut, E330, E-mail: smt AT cise DOT ufl DOT edu, Phone: 352-505-1564.

Course Office Hours: Tuesdays 3:00-4:00 or by appointment (brief matters: whenever present in office).

On-Campus Class Meeting Times and Location: Tuesday 7th (1:55-2:45), Thursday 7th-8th (1:55-3:50) in CSE 107. All in-class lectures will be recorded by UF EDGE and posted on Canvas (https://lss.at.ufl.edu) shortly thereafter for viewing by registered students.

Course Website: www.cise.ufl.edu/class/cen6075/fa16.html

Textbooks: (1) EXPLORING REQUIREMENTS: QUALITY BEFORE DESIGN, by David Gause and Gerald Weinberg, Dorset House; (2) MASTERING THE REQUIREMENTS PROCESS: GETTING REQUIREMENTS RIGHT (3RD ED.), by Suzanne and James Robertson., Pearson. I suggest that you obtain copies of the texts. Other readings are available on-line or elsewhere. See the course website for reading assignments.

Outline of Course Topics: The following topics will be covered in the order given.

(1) Course introduction and review of SE realities and RE basics
(2) Volere overview: some fundamental truths and a requirements process framework outline
(3) Human aspects of RE – working with people to explore requirements (Gause & Weinberg)
(4) More Volere process nuts and bolts
(4) An overview of formal specification (algebraic, model-based, functional)

Class Format: Students are expected to complete assigned readings/exercises before they are discussed in class, and should expect in-class discussions/activities to complement (as opposed to replace) those readings/exercises. Impromptu in-class role-playing and/or illustrative exercises, will be the norm for some topics (e.g., parts of the Gause & Weinberg text), while a more traditional lecture format will be used for others (e.g., formal specification techniques). Local students will be asked to provide occasional status reports on their term project activities. Lecture notes, where appropriate, will be posted on the course web site in a JIT (Just-In-Time) fashion.

Possible Term Project (depending on availability of TA resources): Assuming adequate TA support, local students will be divided into teams of 3 or 4 and will undertake a significant RE project spanning a multi-week period with an actual customer of their choosing. Off-campus EDGE students will have the option of participating in a similarly structured RE project if circumstances permit, or of undertaking a relevant independent study project and producing a detailed written report. Additional information will be provided in class.

Examinations and Grades: Course grades will be based SOLELY on the term project (if applicable) and two in-class tests, all weighted equally – no exceptions. (Please do NOT ask if there are additional things you can do to improve your grade.) A histogram of numeric scores will be provided with solution notes for each test. Course letter grades will be determined at the end of the semester, based, in part, on the difficulty of the exams. The typical course grade distribution is A: 10-20%, A-: 25-35%, B+: 25-35%, B: 10-20%, lower than a B: 5-15%.

Exam schedule: Test 1 – Thursday, October 13 (tentative) (Non-Gainesville area EDGE students: October 13-14); Test 2 – Thursday, December 1 (Non-Gainesville area EDGE students: December 1-2). Note: there is no (comprehensive) “final exam” for this course.

Exam Procedures for Non-Gainesville Area EDGE Students: Students should make arrangements with their EDGE-approved proctors to schedule a SINGLE TEST TIME for all CEN 6075 students at their site or location during each of the two specified test periods. If this is not possible for any reason, students must contact the instructor well in advance to discuss making other arrangements. Please ask proctors to return electronic copies of completed exams via e-mail directly to the instructor.
Grading Errors: General test re-grade requests (AKA “fishing expeditions”) are NOT accepted. Suspected grading errors (you’re your explanation) should be brought to the instructor’s attention ASAP, but no later than two weeks after graded tests are made available for review, for appropriate consideration. Your original, UNALTERED test (on-campus students only) must be returned together with a correction request form (to be made available) to the instructor. Note that partial credit policies are not subject to debate.

Make-Up Exam Policy: Students are expected to be available at scheduled test times. Do not schedule elective activities (family gatherings, interview trips, weddings, divorces, vacations, etc.) that conflict with scheduled tests. If missing a test is unavoidable (e.g., due to sickness, accident, or other reasons beyond your control), contact the instructor as far in advance as possible. Make-up tests may be administered orally. Note that depending on the circumstances, it may NOT be possible to administer a make-up test before the end of the term. In such cases, a course grade of “I” (incomplete) may be assigned.

Homework: Optional, self-check problem sets will be recommended and discussed in class as appropriate.

Class Attendance Policy: Students are expected to view all recorded lectures and are responsible for any recorded announcements made in class or posted on the course website, but are NOT required to attend live lectures unless their project team has been asked in advance to provide an in-class status reports on their activities.

Exercises: Optional, self-check exercises (together with solution notes) will be made available on the course website.

Computer Facilities: Access to e-mail and the WWW is required.

Academic Integrity: 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 acknowledging 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. You will be asked to sign the following statement on all exams in this course: On my honor, I have neither given nor received unauthorized aid on this exam and I pledge not to divulge information regarding its contents to those who have not yet taken it. Note that graded exams are routinely copied before being returned to students for security reasons.

Grade requirements for graduation: Graduate students must have an overall GPA of 3.0 (B average) or better. (Note: a B- average is equivalent to a GPA of 2.67, and therefore does NOT satisfy this requirement.) Undergraduate students must have an overall GPA and an upper-division GPA of 2.0 (C average) or better. (Note: a C- average is equivalent to a GPA of 1.67, and therefore does NOT satisfy this requirement.)

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.

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 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.

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.

Instructor Biography: Steve Thebaut received the BA in Mathematics from Duke University in 1977, and the MS and PhD in Computer Science from Purdue University in 1979 and 1983, respectively. His research interests have included software requirements engineering, testing and verification, and software engineering technology transfer. He has received funding from the National Science Foundation, IBM, the Florida Department of Education, the Florida High Technology and Industry Council, the Sino-Software Research Center at HKUST, the Software Engineering Research Center, and the Software Engineering Institute (SEI) at Carnegie Mellon University, where he was an invited lecturer in the SEI production of “Software Project Management,” a nationally distributed video-based continuing education course. He has been a course developer and consultant for IBM’s IS&P Technical Education program, and has served on the program committee of the Conference on Software Engineering Education. He was Associate Editor of the International Journal of Computer and Software Engineering from 1990-1996.