EE 647  
Description of Project Work Items

Extreme programming (www.extremeprogramming.org) shall be applied with two week iterations. Any artifact submitted to the customer/instructor shall be thoroughly reviewed by team members before submission. In every document, the author and reviewers shall be explicitly indicated.

At the end of the first week of every iteration, the following documents shall be presented by each team in class and will be extensively reviewed by the customer, team members and members of other teams. These documents shall be submitted in electronic format to the instructor AFTER being revised according to the reviews, within two days after class. These are NOT formal documents, but plans that will be followed for SW development. Formal documents shall be submitted, again electronically, at the end of the second week of every iteration. Quality of work reflected in all this work will effect the overall project grades in the course.

**First week items: RP, IP, TP, PSD.**

**RELEASE PLAN (RP):** In EE 647, the whole project will constitute only a single release and in each iteration the release shall be re-planned, with the re-factoring reflected whenever necessary.

RP contents:

1. One paragraph descriptions (concept description) of each user story (US) as derived from the project description.
2. With each US, a rough estimate of Function Point (FP) and Source Lines of Code (SLOC) size of software to be developed to implement it, and an estimate of total person-hour effort necessary to implement the US shall be included. In the first iteration this will only be a COCOMO estimation; in later iterations, COCOMO estimations shall be presented together with estimations based on the productivity achieved in previous iterations, and the two estimates shall be compared.
3. Distribution of the US’s to iterations, according to importance, precedence relations (those US’s that will be necessary to implement and test others, etc.) and effort estimations.
4. The realized productivity and its change over the iterations, i.e. FP and SLOC developed and delivered per person-hour in the previous iterations and the whole project so far.
5. In all iterations after the first, the Earned Value Analysis (EVA) report as of the end of the previous iteration.
6. In all iterations after the first, hours spent by each individual team member in the previous iteration and cumulative in the project so far, on each of the seven main project activity categories: (A) planning, (B) test design, (C) SW design, (D) SW implementation, (E) testing, (F) document writing, (G) artifact reviewing.
ITERATION PLAN (IP):

IP contents:

1. Detailed [Use Case format] description of the US’s to be implemented in this iteration.
2. For the iteration, the daily plan of team activities, for each individual team member, at the detail level of hours, indicating the project activity among the seven main categories. As this will be reviewed at the end of the first week of each iteration, the plan shall have been realized (i.e. actual activity dates and times spent) for the first week and planned for the second week.

TEST PLAN (TP):

TP contents: As software shall be produced according to the “test-based-development” approach, each iteration shall proceed based on this test plan, describing unit-, integration- and regression-tests that correspond to the US's described in the IP. The format of the TP shall “roughly” correspond to the IEEE 829 standard, and constitute the basis for the Acceptance Test Report (ATR) to be submitted at the end of the iterations.

PRELIMINARY SW DESIGN (PSD):

Description of data structures, algorithms, open source components and integration patterns to be used for SW development during the iteration. The format of the PSD shall “roughly” correspond to the IEEE 1016 standard, and constitute the basis for the Software Design Description (SDD) to be submitted at the end of the iterations.

**Second week items: Code, ATR, SRS, SDD.**

All documents submitted at the end of the second week of every iteration shall be FORMAL documents, conforming to the relevant IEEE standards. All three formal documents shall be cumulative, i.e. will reflect any and all work performed so far in the project; and as such, at the end of the last iteration they will become the final documents for the whole project.

**CODE:** The running code developed during the iteration and integrated with the previous system shall be demonstrated in class, in the form of a review of the ATR.

**ACCEPTANCE TEST REPORT (ATR):** This is the only document that will be submitted in printed form, before class, and shall constitute the basis for code demonstration. It will conform to the IEEE 829 standard. Its final copy will be submitted, together with the SRS and SDD, in electronic format.

**SOFTWARE REQUIREMENTS SPECIFICATION (SRS):** Will be submitted within two days after code demo. This will contain a detailed FP calculation for the portion of the system described in it.

**SOFTWARE DESIGN DESCRIPTION (SDD):** Will be submitted within two days after code demo.

All three formal documents will contain extensive traceability tables and indices of terms used in the document. For contents of these, see the course web site.