CPSC-362 Class ProjectV3.0.docx

6-21-2020

Grading: Counts 40% of grade (100 points plus bonus points)

Small team can be used, no more than 4 members. Project grade will be determined

as each team member will cast a blind vote on other team member grade, instructor

will also have a vote and reserves the right to overrule team members vote)

* Acceptable Video/Audio formats: mp4, wmv, asf, qt, mov, mpg, mpeg, avi, m4v
* Acceptable Picture Formats: jpg, jpeg, gif, png, pdf, tiff, bmp
* Acceptable Data Formats: doc, docx, ppt, pptx, xls, xslx, pdf, rtf, txt

Requirement: Must be completed, can not be dropped

# Required Homework Documents

Homework 1 : Pick Subject Material - Due

Student can pick subject but requires instructors approval.

Can be, for example

1) Autocoups Robot

2) New Manned Hypersonic Aircraft

3) Taking control of a WiFi enabled vehicle

4) Automated Warehouse

5) Anti-ship Missile

6) Mars Rover

7. Autonomous Vehicle

Homework 2: Write a Requirements Document

Part 1: General Requirements - One needs to ask “What the objectives for the system or product are, what is to be accomplished, how the system or product fits into the needs of the business, and finally, how the system or product is to be used on a day-to-day basis.” But who do you ask? The customer?

Par 2: Completed Requirements

**Basic Requirements –** Cost, Interface, Customer, Performance, Derived, Schedule, Environmenta, Time, Functional

**Performance Requirements -** Quantity – How Many, How Much; Quality – How Well; Coverage – How Much Area, How Far; Timeliness – How Responsive, How Frequent; Readiness – Availability, MTBF

**Any detailed requirements -** Processor speed, req’d memory, throughput, programming language, etc)

**Sources of Requirements -** User Goals / Desires; Standards / Specifications; Laws and Regulations; Systems Analysis – Derived Requirements; Solution Dependent (e.g., Technology, Interface Definition, Engineering Specialties, Risk Management)

Homework 2: Software Development Plan or Design Concept from Chpt 9 – Due

The **Software Development Plan** (SDP) describes a developer's **plans** for conducting a **software development** effort. The SDP provides the acquirer insight and a tool for monitoring the processes to be followed for **software development**. This plan contains these six steps include planning, **analysis**, design, development & **implementation**, **testing** & **deployment** and **maintenance**. Refer to class Sample Dev Plan.

Design Concepts must include: Architectural Design (What are you building, Purpose, For what application) Project Organization (also any subcontractors), SW Lifecycle details ( ,

Development Process details Development team construction and potential issues

Cost Estimate (To include cost, people power requirements, time allocation,

management reserve, etc)

Risk Analysis to include addressing Technical Readiness

Development Use Classes (Minimum of class diagram and activity diagram)

Suggest using browser based free tool Draw.IO (<https://app.diagrams.net/>), can

output PNG and works with Windows and Macs

Schedules and Milestones

Critical Path Analysis (PERT Chart or equivalent)

Gantt Chart or equivalent illustrating your completing schedule (Activities

versus calendar time)

Coding Standard (If appropriate)

Test Plan

Deployment Plan (as appropriate)

Maintenance or Support Plan

Final Report summarizing all of above (Word Format) - Due

Project Presentation - Due

(PowerPoint, AVI, MPEG, MOV or other instructor approved format). Each member of the team is to participate in the final presentation. Time limit: 20 min. If presentatioin includes a demo, 15 potential bonus points)