

ECE463/SysEngr491 - Capstone Design Course - Fall 2016

Critical Design Review - Expectations

1. **Purpose:** The Critical Design Review (CDR) is a formal briefing to your mentor, your customer, your SRO, and your course faculty member. **The purpose of the CDR is to show that you have a complete hardware and software design, you have a working prototype of an agreed critical subsystem, and that you have a logical plan to build, integrate, and test your system.** Based on time constraints, it is usually best to demonstrate your prototypes to any interested faculty before the actual briefing. If your mentor agrees, you may demonstrate the prototype in a simulation. You may also demonstrate the prototype during the CDR presentation if time permits.
2. **Presentation Format:** Plan to brief for up to 90 minutes followed by 20 minutes of Q&A. **Uniform is service dress.** Your team is responsible for notifying the faculty members and your customer regarding the time and location of the CDR.
3. **CDR Deliverables:** Use the templates provided for your design documentation. The CDR design deliverables and their grade weights are listed below. **Post the deliverables listed below on your team website 24 hours prior to the start of your briefing (NLT 0750 hrs).**
 - **Updated Requirements and System Level Design: 5%**
 - o Current Versions of:
 - OV-1, RTM, Functional Flow Block Diagram
 - Technical Report complete through System Design and Analysis, and
 - For each Hardware Subsystem: Concept, I/O, Requirements
 - Software Subsystem: Functions, Structure Charts, Module Specs (or equivalent Object Oriented Design system level products), Flow or Sequence Diagrams (as appropriate)
 - o All updated and consistent with current design and at least one copy available at the brief
 - **Detailed Hardware Design: 20%** (Weight may be altered by your mentor according to your project). For each subsystem:
 - o Schematics, component descriptions, test and analysis for choosing components, subsystem analysis, physical considerations, parts list, and sub-system test plan
 - o Once a subsystem design is approved by your mentor, include the write up in the tech report
 - **Detailed Software Design: 20%** (Weight may be altered by your mentor according to your project). For each module (or object):
 - o Logic Design: Either Logic Flow Charts, Sequence Diagrams, or pseudo-code comments
 - o Data Design: data specification for modules and any global data / database
 - o Software Test Plans for each module
 - o Once design is approved by your mentor, include the write up in the tech report
 - **System Test Plans: 15%**
 - o Overall plan for integration and acceptance testing (Gantt chart)
 - o Individual test plan for system integration tests
 - o Individual test plan for system acceptance
 - o Once overall test approach is approved by your mentor, write up in the tech report

- **Risk Reduction Prototype: 15%** (Weight may be altered by your mentor according to your project)
 - Working hardware or software (Demo)
 - Prototype testing results (MS Power Point)
- **Updated Project Plan: 15%**
 - Project Schedule with actual hours and comparison to PDR baseline through CDR and plan to SVR (entire Spring semester)
 - Subsystem build, test, and debug
 - Integration tests and debug
 - Acceptance tests and debug
 - Updated Risk Analysis and Action Items
 - Final budgets (cost, weight, power)
 - In the financial budget show actual projected expenditures & recurring costs (cost to manufacture) separately
- **Presentation: 10%**
 - Clearly communicate:
 - Detailed hardware and software design
 - Risk reduction prototype results
 - Current status, along with any issues and your plans to resolve them
 - Plans (build, integration, and testing) for the remainder of the project
- **Technical Report:**
 - This Report is not graded with the CDR. It is a standalone document graded IAW syllabus.
 - Post the draft with revisions tracked to your team website
 - Evaluation of Technical Writing
 - Following sections complete (update previously written sections as required):
 - Executive Summary,
 - Requirements Specifications,
 - Implementation considerations,
 - Contemporary Issues,
 - Functional Allocation,
 - System-Level Design Tradeoffs,
 - System Block Diagram,
 - System Analysis,
 - For each Subsystem (including Software), complete:
 - Subsystem Concept
 - Subsystem Performance Requirements
 - Subsystem Inputs and Outputs
 - Schematic
 - Component Descriptions, Tests and Analysis
 - Subsystem Analyses and Simulations
 - Subsystem Physical Considerations
 - Subsystem Parts Lists
 - Subsystem Test Plans
 - System Level Test Plans
 - All Overviews:

- Integration Test Procedures
- System Acceptance

4. FIGHT FOR FEEDBACK!

- **Review, understand, and respond to** the grading criteria **prior to** developing your design documents.
- **Take responsibility** as a team to submit the CDR deliverables incrementally, and then **engage** your mentor(s) and course faculty to get feedback on what you've designed. The submissions don't need to be formal. Get feedback as often as possible using your lab notebooks or other design materials. The earlier you share your designs and plans with the faculty, the earlier you can get feedback. Waiting until the CDR dry run to get feedback is **WAY TOO LATE**.
- Present a dry run of your briefing to your mentor one lesson prior to the CDR.
- **NOTE:** Any final CDR deliverables earning Unsatisfactory (<67%) marks must be resubmitted one lesson after receiving feedback.

5. Each individual will also receive a grade for their individual performance and contributions to the team. The individual grade is combined with the team grades IAW the syllabus. Each team member will be evaluated based on:

- The appropriateness of work accomplished based on their individual skill set
- The amount of work accomplished
- Interpersonal skills

6. **Peer Evaluations.** Submit IAW syllabus.

Updated Requirements and System Level Design:

Includes: Requirements Traceability Matrix, FFBD, System Block Diagram, Software Structure Charts, and Module Specs

Area (weight)	A Work	B Work	C Work	Unsatisfactory
Updates since PDR (50%)	<ul style="list-style-type: none">• All or nearly all faculty comments addressed or logical explanations provided	<ul style="list-style-type: none">• A few comments not addressed or incorrectly addressed	<ul style="list-style-type: none">• Several comments not addressed or incorrectly addressed	<ul style="list-style-type: none">• Majority of PDR comments ignored without justification
Consistency with Final Design (50%)	<ul style="list-style-type: none">• All elements of the requirements and other documents have been updated and are consistent with the final design. Minor if any exceptions (cosmetic)	<ul style="list-style-type: none">• Few minor inconsistencies between requirements, other documents, and the system design	<ul style="list-style-type: none">• Some major inconsistencies or items that have not been updated	<ul style="list-style-type: none">• Updates to previous documents ignored

Hardware: Technical report content. All hardware subsystems that your team designs / modifies will be evaluated on the following dimensions (as applicable)

Area	A Work	B Work	C Work	Unsatisfactory
Subsystem Schematics and Description (30%)	<ul style="list-style-type: none"> • Clear, readable and complete • Each component clearly and specifically labeled • Subsystem performance and I/O requirements clearly and completely described and consistent with System FFBD and Block Diagram • All components and connections labeled • Minor if any issues 	<ul style="list-style-type: none"> • Several minor issues including I/O documentation, component specification • Consistent with system level design 	<ul style="list-style-type: none"> • Several documentation issues • Minor inconsistencies with system level design 	<ul style="list-style-type: none"> • Documentation sloppy • Several inconsistencies with system level design • Several interfaces not adequately described
Component Description and Analysis (15%)	<ul style="list-style-type: none"> • Pin-out/schematic complete and clearly labeled • Clear descriptions and references to spec sheets or tech data • All I/O signals clearly specified • Analysis is appropriate, includes bench test results, simulation results or calculations as required and demonstrates that component selected will meet requirements • Minor if any issues 	<ul style="list-style-type: none"> • Several minor issues 	<ul style="list-style-type: none"> • Several documentation issues • Analysis weakly supports the design • Some I/O connections not specified 	<ul style="list-style-type: none"> • Analysis missing or doesn't demonstrate requirements will be met • Several I/O connections unspecified • Component technical data missing • Several writing issues
Subsystem Analysis and Simulation (25%)	<ul style="list-style-type: none"> • Appropriate analysis (math, computer simulations, bench tests) shows how <u>all</u> subsystem performance and I/O requirements will be achieved • Minor if any issues 	<ul style="list-style-type: none"> • Several minor issues 	<ul style="list-style-type: none"> • A few analysis errors • Analysis only weakly tied to the system specification 	<ul style="list-style-type: none"> • Several analysis errors • Analysis missing for any subsystem requirement or will not satisfy requirements
Physical Considerations (5%)	<ul style="list-style-type: none"> • Clear physical design that <u>includes sketches and dimensions</u>, types of materials, and fabrication source • Minor if any issues 	<ul style="list-style-type: none"> • Several minor issues 	<ul style="list-style-type: none"> • Missing several details • Sketches omit relevant dimensions 	<ul style="list-style-type: none"> • Missing
Parts List (5%)	<ul style="list-style-type: none"> • Covers all components, connections and physical items • Vendor information complete (order quantity, lead times) 	<ul style="list-style-type: none"> • Minor omissions 	<ul style="list-style-type: none"> • Several items missing parts of the data • A few parts missing from list 	<ul style="list-style-type: none"> • Missing • No vendor coordination
Subsystem Test Plan (20%)	<ul style="list-style-type: none"> • Logical order of tests • Tests designed to confirm all subsystem performance and I/O requirements • Clear expectations for test results • Logical and complete resource lists, assembly steps, and step by step test procedures • Minor if any issues 	<ul style="list-style-type: none"> • Several minor issues 	<ul style="list-style-type: none"> • A few major issues such as: • Logic problems in the order of tests • Unclear test result expectations • Logic problems or missing steps in assembly and configuration or test procedures • Ties to system specification analysis unclear 	<ul style="list-style-type: none"> • Any system specification requirements not tested • Missing test result predictions or resource lists • Several major issues

Detailed Software Design: Technical Report Content

- Logic Design for each module (include main) and Data Design for each module and global data
- For Object Oriented Designs, use UML products instead of structure charts, flow diagrams, and module specifications

Area	A Work	B Work	C Work	Unsatisfactory
Logic Design (80%)	<ul style="list-style-type: none">• Module function completely designed and well thought through• Flow charts or Program Description Language contains sufficient detail to go directly to code (lacks only correct syntax)• Clear control structures (for loops, do while, case statements, etc.)• Algorithmically correct• Shows all data manipulation and calculations• Consistent with the system design (system spec, subsystem specifications, module specs, FFBD)• Minor if any issues	<ul style="list-style-type: none">• Several minor issues• A few inconsistencies or sections lacking detail	<ul style="list-style-type: none">• Several significant problems (e.g.):• Logic or algorithmic problems• Parts of the design are unclear or lack detail• Inconsistencies between the software logic design and the rest of the system design	<ul style="list-style-type: none">• Functionality omitted• Major inconsistencies between software design and rest of system design• Several items unclear, lacking detail• Major logic problems
Data Design (20%)	<ul style="list-style-type: none">• Complete design for each module that shows the structure of each data item required for the design• Covers the data types and all associated fields and access methods (e.g. hash functions)• For assembly design, describes memory mapping and data widths• Minor if any issues	<ul style="list-style-type: none">• Several minor issues	<ul style="list-style-type: none">• A few parts of the design not clear• A few parts of the data design do not match the software logic design or the system level design	<ul style="list-style-type: none">• A few data items not defined• Major parts of the data design not clearly defined or do not match the software logic design

System Integration and Test Plan: Content of the Technical Report

Area (weight)	A Work	B Work	C Work	Unsatisfactory
System Integration Test Plan (50%)	<ul style="list-style-type: none">• Logical flow of subsystem integration• Precise statements of expected test results• Complete listing of required equipment, software, personnel, and location• Logical and complete statement of assembly instructions and test procedures• References to requirements from system specification analysis• Minor if any issues	<ul style="list-style-type: none">• Several minor issues	<ul style="list-style-type: none">• A few major issues such as:• Logic problems in the flow of subsystem integration• Unclear test result expectations• Logic problems or missing steps in assembly and configuration or test procedures• Ties to system specification analysis unclear• Spelling and grammar problems	<ul style="list-style-type: none">• Subsystems missing from the plan• Tests missing linkage to system specification analysis requirements• Several major issues
System Acceptance Test Plan (50%)	<ul style="list-style-type: none">• Logical flow of acceptance tests• Precise statements of expected test results• Complete listing of required equipment, software, personnel, and location• Logical and complete statement of assembly instructions and test procedures• References to RTM requirements match the verification column• Minor if any issues	<ul style="list-style-type: none">• Several minor issues	<ul style="list-style-type: none">• A few major issues such as:• Logic problems in the flow acceptance tests• Unclear test result expectations• Logic problems or missing steps in assembly and configuration or test procedures• RTM references unclear or different than RTM verification• Spelling and grammar problems	<ul style="list-style-type: none">• Any RTM requirements missing• Tests missing linkage to RTM• Several major issues

Risk Reduction Prototype:

Demonstrate the prototype's function during the CDR and present the test results in your slides

Area (weight)	A Work	B Work	C Work	Unsatisfactory
Construction/ Demonstration (50%)	<ul style="list-style-type: none">• Prototype is complete and functional• Any deviations from original plan well-justified• Demonstration clearly shows results that reduce the risk originally described	<ul style="list-style-type: none">• Several minor issues	<ul style="list-style-type: none">• Prototype different than originally specified without justification• Construction quality negatively impacts function (intermittent failures)• Prototype weakly related to risk reduction	<ul style="list-style-type: none">• Prototype is poorly constructed and non-functional, or not constructed at all
Results (CDR Slides) (50%)	<ul style="list-style-type: none">• Tested as specified in prototype specification, any deviations well-justified• Results analyzed in a way that reduces project risk	<ul style="list-style-type: none">• Several minor issues	<ul style="list-style-type: none">• Minimal analysis, weakly supports risk reduction• Deviations from the test plan without justification	<ul style="list-style-type: none">• No tests run• No analysis

Project Plan:

Includes: Schedule (MS Project), Risks (MS PowerPoint Slides), Config Mgt (usage)

Area	A Work	B Work	C Work	Unsatisfactory
Updated Schedule: (40%)	<ul style="list-style-type: none"> Detailed and logically linked set of tasks that thoroughly cover the <u>remainder of the project</u> Includes risk management, subsystem integration, and system acceptance test tasks Logical resource allocation Progress to date tracked and compared to PDR baseline (hours and percent complete) Critical path identified, with solid analysis; schedule provides sufficient detail for re-planning Hours and activities reported for each cadet in the briefing 	<ul style="list-style-type: none"> Plan is complete with only a few issues with task descriptions, linkage or resource allocation 	<ul style="list-style-type: none"> Several tasks missing; Several vague task descriptions; some tasks not linked Workload allocated to resources but has some balance issues Documentation of actual hours worked is not clear Critical path identified, but analysis cursory and yields little insight for planning purposes 	<ul style="list-style-type: none"> Several missing, vague or unlinked tasks Some workload not allocated or several balance issues Progress for each task since PDR missing in both schedule and the briefing No changes from template Critical path analysis missing Schedule was not rebaselined at PDR
Updated Risk Management (30%)	<ul style="list-style-type: none"> Risks are assessed against meeting a documented requirement and are logical Solid analysis support for probabilities and consequences Specific achievable management plans Results of risk reduction prototype effort integrated into plan 	<ul style="list-style-type: none"> Few general risks Few probabilities and consequences lack solid analysis support Few management plans vague 	<ul style="list-style-type: none"> Few stated risks are general enough to be considered “concerns” Some analysis support for probability and consequence analysis is supported, some is vague Some management plans are vague Risk reduction prototype impacts vague 	<ul style="list-style-type: none"> Most risks are “concerns” Little or no support for probability and consequence analysis Some key risks are ignored Management plans either do not exist or are vague Risk reduction prototype results ignored
Config Mgt (10%)	<ul style="list-style-type: none"> Evidence of use 	<ul style="list-style-type: none"> Reported use 	<ul style="list-style-type: none"> Little evidence or no reported configuration control 	<ul style="list-style-type: none"> Not being used
Budgets (20%)	See Below			

Budgets: Not all projects will have a weight budget - coordinate with your mentor

Area (weight)	A Work	B Work	C Work	Unsatisfactory
Power (40 or 50%)	<ul style="list-style-type: none">• Traceable to subsystem parts lists• Includes references to component tech or bench test data• Shows different voltages and currents required• Demonstrates adequate power supply• Minor if any issues	<ul style="list-style-type: none">• Several minor issues	<ul style="list-style-type: none">• A few components lack references• A few inconsistencies between subsystem specs and power budget	<ul style="list-style-type: none">• Several items missing• Major inconsistencies• Power budget does not balance
Fiscal (40 or 50%)	<ul style="list-style-type: none">• Traceable to subsystem parts lists• Distinguishes development costs (what will be purchased this year) from recurring costs (what it will cost to reproduce the system)	<ul style="list-style-type: none">• Several minor issues	<ul style="list-style-type: none">• A few parts do not match subsystem parts lists• A few parts missing from recurring costs	<ul style="list-style-type: none">• Major items missing• Major inconsistencies• Development and recurring costs not separately identified
Weight (20 or 0 %)	<ul style="list-style-type: none">• Traceable to subsystem parts lists• References tech data or bench tests	<ul style="list-style-type: none">• Several minor issues	<ul style="list-style-type: none">• A few items missing or inconsistencies with subsystem parts lists	<ul style="list-style-type: none">• Major items missing• Major inconsistencies

CDR Presentation and Briefing Slides:

MS PowerPoint Slides and oral presentation that:

- Clearly communicate the detailed design of the project and demonstrate it will satisfy requirements
- Clearly describe the current status of the project including get-well plans for any issues
- Clearly describe your plan to successfully build, integrate, and test your project by the end of the spring semester

Area	A Work	B Work	C Work	Unsatisfactory
Clarity of oral communication (50%)	<ul style="list-style-type: none">• Excellent communication• Team shows a clear and unified understanding of the system design• Concisely communicates a clear picture of the system design to the audience• Answers to questions raised during the briefing are concise and accurate• Well planned and executed	<ul style="list-style-type: none">• Above average communication• Minor ambiguities or detractions	<ul style="list-style-type: none">• Satisfactory communication• Team shows basic understanding of the system design with a few significant disconnects• Communication of design is unclear in few areas• A few questions not well answered	<ul style="list-style-type: none">• Marginal to poor communication• Design not well understood or major inconsistencies in understanding amongst the team• Several areas unclear to audience• Several questions not answered well• Briefing lacks planning• Briefing more than 10 minutes over time
Briefing slides (50%)	<ul style="list-style-type: none">• Excellent visual communication• Slides and graphics fully support the accurate delivery of information• Professional• Readable• Well organized• Adequately referenced• Minor if any issues	<ul style="list-style-type: none">• Above average visual communication• Several minor issues	<ul style="list-style-type: none">• Satisfactory visual communication• Information on some slides does not support the point of the briefing• Several format inconsistencies and errors• Minor changes after slides submitted for review• Some slides difficult to read	<ul style="list-style-type: none">• Marginal to poor visual communication• Slides misrepresent the information or cause misunderstanding• Major errors, format problems, or readability issues• Several revisions after slides submitted for review• CADET HOURS AND ACTIONS NOT REPORTED

Technical Report (using template):

See description on Page 2 for a list of sections that should be complete.

Area	A Work	B Work	C Work	Unsatisfactory
Content (40%)	<ul style="list-style-type: none">• The writing is clearly focused which leads to achieving a well-defined goal.• The purpose is clearly defined.• The writing supports the purpose with concise, logical details that meet the reader's informational needs.• Sources, if used, are acknowledged.	<ul style="list-style-type: none">• Mostly "A" work, with several minor detractions.• Few if any characteristics of "C" work.	<ul style="list-style-type: none">• The writing addresses an identifiable goal by offering the reader general basic information. The development is limited, sketchy, and/or general.• The purpose can be identified.• The writing sometimes supports the purpose with concise, logical details that meet the reader's informational needs.• Sources, if used, are sometimes acknowledged.	<ul style="list-style-type: none">• The writing has not clarified the selected goal. The text has no clear sense of purpose.• The purpose is not identifiable.• The writer does not support the purpose with concise, logical details that meet the reader's information needs.• Sources, if used, are not acknowledged.
Voice (15%)	<ul style="list-style-type: none">• The writer speaks directly to the reader in a way that is professional and engaging.• The text and/or graphics are appropriate for the audience and purpose.• Writes with authority so the voice is not distracting.	<ul style="list-style-type: none">• Mostly "A" work, with several minor detractions.• Few if any characteristics of "C" work.	<ul style="list-style-type: none">• The writing seems sincere, but not genuinely engaged, committed, or involved. The result is short of compelling.• The text and/or graphics are sometimes appropriate for the audience and purpose.• Writes with authority but sometimes voice is distracting.	<ul style="list-style-type: none">• The writer seems indifferent, uninvolved, or distanced from the topic and/or audience.• The text and/or graphics are not appropriate for the audience and purpose.• Writes without authority and the voice is distracting.
Word Choice (15%)	<ul style="list-style-type: none">• Words convey the intended message in an accurate and concise manner that increases the reader's understanding.• Words are clear, precise, and professional.• The meaning of technical terms or professional jargon is defined or can be determined by the context. Acronyms are always defined when first used.• The vocabulary suits the purpose, subject, and audience.	<ul style="list-style-type: none">• Mostly "A" work, with several minor detractions.• Few if any characteristics of "C" work.	<ul style="list-style-type: none">• The language is functional but sometimes lacks interest. The words do not get the message across.• Sometimes words are clear, precise, and professional.• The meaning of technical terms or professional jargon is sometimes defined or can be determined by the context. Acronyms are sometimes not defined.• The vocabulary sometimes suits the purpose, subject, and audience.	<ul style="list-style-type: none">• The writer struggles with a limited vocabulary and searches for words to convey meaning. The words do not get the message across.• Words are not clear, precise, and professional.• The meaning of technical terms or professional jargon is not defined or cannot be determined by the context. Acronyms are seldom or never defined.• The vocabulary does not suit the purpose, subject, and audience.
Sentence Fluency (15%)	<ul style="list-style-type: none">• The text flows easily with a variety of sentence structures and lengths.• Compact sentences or phrases make the point clear.• The text reflects logic and sense and helps show how ideas relate.	<ul style="list-style-type: none">• Mostly "A" work, with several minor detractions.• Few if any characteristics of "C" work.	<ul style="list-style-type: none">• The text flows efficiently but lacks variety in sentence structure.• Sometimes compact sentences or phrases make the point clear but several sentences are wordy.• The text reflects logic and sense and helps show how some ideas relate.	<ul style="list-style-type: none">• The text uses sentences that tend to be choppy, incomplete, rambling, or awkward. The text is difficult to follow.• Wordy sentences detract from the purpose.• The text tends to obscure meaning,

	<ul style="list-style-type: none"> • The writer uses active voice. 		<ul style="list-style-type: none"> • Fragments, if used, distract from the flow of the text. • Writer uses primarily passive voice. 	<p>rather than showing the reader how ideas relate.</p> <ul style="list-style-type: none"> • Fragments, if used, are ineffective.
Conventions (15%)	<ul style="list-style-type: none"> • The writer demonstrates control of standard writing conventions and uses them effectively to enhance readability. Errors tend to be so few and minor the reader can easily skim right over them. • Paragraph division is sound and reinforces the organizational structure. • Grammar and usage are correct and contribute to clarity and style. • Punctuation is smooth and guides the reader through the text. • Spelling is correct even on more difficult words. • Only light editing would be required to polish the text for publication. • Graphic devices, when used, are clear, helpful, visually appealing, adequately described, and supportive of the text. • The writer may manipulate conventions, particularly grammar, for stylistic effect. 	<ul style="list-style-type: none"> • Mostly “A” work, with several minor detractions. • Few if any characteristics of “C” work. 	<ul style="list-style-type: none"> • The writer shows reasonable control over a limited range of standard writing conventions. Errors are numerous or serious enough to be somewhat distracting, but the writer handles some conventions well. • Paragraph divisions are attempted but paragraphs sometimes run together or begin in the wrong places. • Problems with grammar and usage are not serious enough to distort meaning. • Terminal (end-of-sentence) punctuation is almost always correct; internal punctuation (commas, apostrophes, semicolons) may be incorrect or missing. • Spelling is usually correct on common words. • Moderate editing would be required to polish the text for publication. • Graphic devices, when used, are sometimes clear, helpful, visually appealing, described, and supportive of the text. 	<ul style="list-style-type: none"> • Errors in spelling, punctuation, usage and grammar, capitalization, and/or paragraphing repeatedly distract the reader and make the text difficult to read. The reader must read once to decode, then again for meaning. • Paragraph divisions are missing, irregular, or so frequent (e.g. every sentence) that it does not relate to the organization of the text. • Errors in grammar and usage are very noticeable and may affect meaning. • Punctuation is often missing or incorrect. • Spelling errors are frequent even on common words. • Extensive editing would be required to polish the text for publication. • Graphic devices, when used, are not clear, helpful, visually appealing, described, or supportive of the text.

Individual Performance Rubric

Area (weight)	A Work	B Work	C Work	Unsatisfactory
Appropriateness of Work (33.33%)	<ul style="list-style-type: none"> • Cadet is doing required work in their area of expertise and is learning from cadets with other skills • Where there are problems, the cadet is seeking advice on solutions and implementing the advice 	<ul style="list-style-type: none"> • Cadet is doing required work in their area of expertise and is learning some from cadets with other skills • Cadet seeks advice in solving problems, and uses it some of the time or uses it wrong occasionally 	<ul style="list-style-type: none"> • Cadet is doing most of the work required from his/her area of expertise, but is learning little from others • Cadet has sought little advice in solving problems • Cadet fails to follow advice given or follows it wrongly 	<ul style="list-style-type: none"> • Cadet tends to compartmentalize his/her work • Seeks no advice in solving problems or appears unaware of problems
Work accomplished (33.33%)	<ul style="list-style-type: none"> • Cadet is accomplishing tasks on time per the project plan, or ahead of schedule • Cadet is contributing to helping others get their tasks done • Effective use of time 	<ul style="list-style-type: none"> • Cadet making above average progress, some tasks are on-time or ahead of schedule, others are behind • Cadet is assisting others occasionally 	<ul style="list-style-type: none"> • Cadet is accomplishing some progress toward the project plan; some tasks on schedule, some are behind • Satisfactory use of time • Cadet occasionally wastes time 	<ul style="list-style-type: none"> • Cadet is not working according to the project plan • Poor use of time (too much for results or too little for accomplishments)
Interpersonal Skills (33.33%)	<ul style="list-style-type: none"> • Exemplary positive attitude • Cadet works well with other team members • Cadet shows outstanding leadership and followership traits • Actively communicates with team members and faculty • Takes initiative to solve team issues 	<ul style="list-style-type: none"> • Generally good attitude • Cadet works well with other team members • Cadet shows good leadership and followership traits • Communicates well with team members and faculty • Solving some team issues and working around others 	<ul style="list-style-type: none"> • Some interpersonal problems mostly resolvable • Cadet shows minor if any conflicts with team members • Cadet is working at minor followership and leadership issues • Communicates with team and faculty members when prompted 	<ul style="list-style-type: none"> • Can't work with one or more team members • Unprofessional behavior • Cadet has problems either showing leadership and/or being a good follower • Fails to communicate with either team or faculty