Common Grading Guidelines for Jr/Sr Engineering Clinic

The following are general guidelines for establishing grades for the Junior/Senior Engineering Clinic. These guidelines are further detailed in specific departmental grading guidelines and criteria that will be distributed by your Discipline Managers.

Grade	*Guidelines*
A	• **Exceed Expectations** • **Take charge** of the project and **generate** tasks from goals and objectives**.** • **Think** independently, **ask** questions and **make** suggestions. • **Develop original solutions** by **combining** theory and/or analytical techniques that **demonstrate a mastery** of engineering science and/or design principles from one or more supporting engineering courses. • **Demonstrate** the ability to engage in lifelong learning by **applying** engineering science and/or design principles that are not covered in your supporting engineering courses. • **Complete all** project deliverables and objectives. • **Effectively communicate** (via written, oral, engineering drawings, etc.) project deliverables to your project manager and/or external sponsor. • **Exhibit consistently strong** team and individual performance in terms of project deliverables and objectives as well as laboratory safety, team skills, record keeping, punctuality, etc.
B	• **Take charge** of the project and **do** all of the work that you are asked to do. • **Ask** questions and **make** suggestions. • **Develop solutions** by **applying** theory and/or analytical techniques that **demonstrate a mastery** of engineering science and/or design principles from one or more supporting engineering courses. • **Complete all** project deliverables and objectives. • **Effectively communicate** (via written, oral, engineering drawings, etc.) project deliverables to your project manager and/or external sponsor. • **Exhibit strong** team and individual performance in terms of project deliverables and objectives as well as laboratory safety, team skills, record keeping, punctuality, etc.
C	• **Do** all of the work you are asked to do. • **Develop solutions** by **applying** theory and/or analytical techniques. • **Complete all** project deliverables and objectives. • **Communicate** (via written, oral, engineering drawings, etc.) project deliverables to your project manager and/or external sponsor. • **Exhibit average** team and individual performance in terms of project deliverables and objectives as well as laboratory safety, team skills, record keeping, punctuality, etc.
D	• **Do some** of the work what that you are asked to do. • **Complete some** of the project deliverables and objectives. • **Ineffectively communicate** (via written, oral, engineering drawings, etc.) project deliverables to your project manager and/or external sponsor. • **Exhibit poor** team and individual performance in terms of project deliverables and objectives as well as laboratory safety, team skills, record keeping, punctuality, etc.
F	Do very little. Don't show up.

Table of Indicators for Each Area of Importance

Area of Importance	Specific Indicators
Technical	Defined Objectives
	Demonstrated Technical Awareness
	Obtained and Interpreted Appropriate Results
	Formulated Supportable Conclusions
	Properly Considered Error
	Provided Recommendations for Future Work
Dissemination	Write conference and journal papers
Logistical	Organized Project
	Met Deadlines
	Executed Project Plan
	Kept Detailed Records
Laboratory Operation	Maintained Safe Practices
	Developed Hazardous Operations (HAZOP) Report
	Dressed Appropriately
	Proper Use/Maintenance of Equipment
	Performed end-of-semester Shut Down
Teaming	Division of Labor
	Professional Conduct
	Learning Experiences for All Team Members

Junior/Senior Grading Policy

Project Score: 50%

Final Paper : 25%

Final Oral : 20%

Mid-term Oral: 5%

Behaviors Corresponding to Technical Performance

Indicator	An "A" team	A "B" team	A "C" or lower team
Defined Objectives	Is actively involved in defining aggressive and achievable objectives that thoroughly addresses fundamental project needs	Aids in defining objectives. Some may be too simplistic or unrealistic.	Takes little initiative in defining the project
Demonstrated Technical Awareness	Clearly demonstrates an awareness of the works of others and establishes a context for their project. Shows an understanding of information from multiple literature sources.	Shows understanding of the work in the field, but has limited depth and breadth. Knowledge is limited to faculty provided materials	Fails to demonstrate an awareness of the works of others and the significance of their project
Obtained and Interpreted Appropriate Results	Obtained and adequately interpreted meaningful results	Produced some results but struggled with interpretation	Generated few results with little meaningful interpretation
Formulated Supportable Conclusions	Formulated and adequately supported meaningful conclusions	Needed significant help in formulating meaningful conclusions or lacked sufficient support for their conclusions	Conclusions are absent, wrong, trivial, or unsubstantiated
Properly Considered Error	Used appropriate mathematical and technical skills to quantitatively express the limitations of the data	Error analysis is largely qualitative or incomplete	Sources of error and reproducibility issues are ignored or misinterpreted
Provided Recommendations for Future Work	Makes insightful recommendations about future work	Makes broad or obvious suggestions for future work	Makes no plausible suggestions for future work

Behaviors Corresponding to Project Planning and Logistics

Indicator	An "A" team	A "B" team	A "C" or lower team
Organized Project	Effectively organizes project tasks to minimize wasted time and effort	Identifies relevant tasks but may struggle with setting priorities and planning	Has difficulty converting broad objectives to specific tasks
Met Deadlines	Consistently meets deadlines	Misses some deadlines despite reasonable effort	Routinely ignores deadlines
Executed Project Plan	Effectively and safely executes the project plan. Makes significant progress. Modifies the plan as necessary	Executes the project plan but has difficulty overcoming setbacks	Works haphazardly with little chance of achieving project objectives
Kept Detailed Records	Keeps detailed records easily followed by others. These records include a laboratory notebook, computer files, purchase records and others	Keeps a lab notebook but records lack organization or contain omissions	Keeps poor, sketchy or no records

Behaviors Corresponding to Laboratory Operations

Indicator	*An "A" team*	**A "B" team**	A "C" team
Maintained Safe Practices	Develops and follows procedures that account for safety and clean-up. Lab is clean and neat	**Develops and follows procedures consistent with safe practices but sometimes misses minor safety issues or fails to clean-up**	Fails to develop and follow safe procedures and/or clean up.
Dressed Appropriately	Always dresses appropriately (long pants in labs, business attire for industrial meetings and presentations, etc.)	Usually dresses appropriately (long pants in labs, business attire for industrial meetings and presentations, etc.) Does not repeat errors	Frequently fails to dress appropriately (long pants in labs, business attire for industrial meetings and presentations, etc.)
Proper Use/Maintenance of Equipment	**Treats equipment with care and performs necessary maintenance**	Usually handles equipment properly but has an occasional lapse	Uses equipment carelessly or fails to maintain it
Performed end-of-semester Shut Down	Lab area is neat and clean. Lab Notebook and electronic copies of all data and reports are provided to the faculty member. Samples and materials are labeled appropriately and either stored or disposed of properly	**Must be pushed by the faculty member for the behaviors described previously**	**Fails to accomplish some of the listed items**

Behaviors Corresponding to Teaming

Indicator	An "A" team	A "B" team	A "C" or lower team
Division of Labor	Has all members making significant contributions to a project that progresses satisfactorily	Progresses satisfactorily but some members feel that workload distribution was disproportionate	Internal conflicts result in team failing to achieve project goals
Professional Conduct	Consistently behaves in a professional manner (shows up for meetings prepared and on time, treats vendors, technicians, team members and staff with courtesy and respect, external communications are formal and businesslike)	Usually behaves in a professional manner (shows up for meetings prepared and on time, treats vendors, technicians, team members and staff with courtesy and respect, external communications are formal and businesslike). Does not repeat the same error	Frequently fails to behave in a professional manner (shows up for meetings prepared and on time, treats vendors, technicians, team members and staff with courtesy and respect, external communications are formal and businesslike)
Learning Experiences for All Team Members	Has all team members demonstrate a thorough understanding of the technical issues of the project	Has all technical issues understood by someone on the team, but knowledge is segmented. Some members do not have the whole picture	Has team members with significant gaps in their understanding of technical issues

PROJECT OBJECTIVES & OUTCOMES FOR SPRING 2012

<PROJECT NAME>

- **<Objective 1>**

- **Outcome for Objective 1**: By the end of this semester, I expect you to _____

- **<Objective 2>**

- **Outcome for Objective 2**: By the end of this semester, I expect you to _____

- **<Objective 3>**

- **Outcome for Objective 3**: By the end of this semester, I expect you to _____