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| Activity 17-1 | Team Project Design Reviews / Consultations |
| Textbook Reference: |  |
| Purpose / Goal: | Team projects are reviewed for several criteria to help direct students toward successful implementation of their designs. |
| Materials / Resources Required: | Laptop, paper, pencil, “Statement of Work” Word template, design documentation, analysis / calculations for the system and subsystems. |
| Time Allocated: | 1:50 |

# Team Project Design Reviews

## Resources

During these class sessions the teams will have access to the shop and classroom for the purpose of working on their projects. During these class times the students have access to:

* Their IED Instructor
* IED Shop TA’s
* Design Lab Technician as available
* Archer Center Staff as available
* IED shop equipment resources, e.g. benches, machinery, electrical tool kits, mechanical tool kits, electronic work benches, etc.

## Expectations

Although this is unstructured time, it is important that the students understand that there are still ground rules and expectations. These include:

* Attendance at each class session
* Focus on their team’s project

Students should not be playing computer or other games, surfing the web except for conducting project research, or performing work / assignments for other classes. These are inappropriate and detrimental to their team’s top performance.

## Consultations by Instructors

Instructors are to talk to and work with all of the teams to understand their project status and offer suggestions, corrections and other guidance as needed. As instructors we are essentially serving as Project Managers to coach the student teams toward success.

Things to look at when reviewing the team’s efforts:

1. A meaningful Statement of Work
   1. Is the problem statement clear?
   2. Is the problem statement manageable?
   3. Can it actually be accomplished in a single semester by sophomores?
   4. Have they broken it down into useful deliverables?
   5. Have a different student (each class) present their Statement of Work and a status update with respect to it.
2. Meaningful breakdown into subsystems
   1. Can / does a single person own each subsystem
      1. This is recommended as this builds individual accountability and allows each person to design/build/test their subsystem somewhat independently of their team mates
      2. Do they know how they will test / validate / verify / demonstrate their subsystem
         1. Before the project’s end date?
         2. As part of their final demo?
   2. Does each person have a clear assignment
      1. People tend to make little progress in the absence of clear assignments!
3. Meaningful Gantt chart
   1. Ask a different student each class to tell the team’s progress by reading their Gantt Chart
   2. Does each entry have a deliverable or measurable outcome?
      1. How do you know when each task is complete?
   3. Is every entry’s duration no longer than one week
      1. Break into multiple sub tasks with unique deliverables / measurable outcome
   4. Does every item have a single owner (others may help, but good project management dictates a single responsible person).
   5. Is the chart current?
      1. Draw line representing “today”.
      2. Is everything to the “left of today” already complete or in process?
         1. If not already complete then it’s behind schedule.
            1. What is the plan to correct this?
         2. If in process, is it as far along as expected?
   6. Is everyone busy?
      1. Ask each student to name one thing they just completed
      2. If they are waiting for another task to complete (e.g. materials to be delivered or fabricated) is there something else they can be working on?
      3. If they have nothing to work on
         1. Can they assist a team mate?
         2. Have they told their team of their availability?
         3. Otherwise - something’s probably wrong!
   7. Is anyone overloaded?
      1. Ask team mates for assistance now, **before** something becomes late!
   8. Is anyone “stuck”
      1. Is it a resource constraint?
      2. Is it a knowledge constraint?
         1. They are not expected to know everything within their own major nor any other! Encourage them to seek assistance by pointing them in the right direction.
4. Are there sketches (that become CAD drawings) for major elements
   1. Early on, pencil sketches are encouraged
   2. As the project progresses and design details are solidified, CAD or other electronic drawings should be produced by the team (do not wait until the end!)
5. Do they have a cost budget?
   1. Where do the current expenses stand vs. the budget?
   2. What are the planned expenses and are they in the budget?
6. What are the “unanswered questions”
   1. Is there a documented list of things the team does not yet, but needs to, know?
   2. Ask each student to identify one thing they have a question about and their plan for getting it resolved (email, phone call, meeting with faculty/staff, etc.).
   3. Students with NO questions may need to dig deeper into their design!

The goal is to ask enough questions to develop your confidence and their confidence that they can succeed!