Project Management
For UConn Engineering
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Pratt & Whitney
UCONN PROJECT MANAGEMENT

Background

25+ yrs at P&W as Project, Design, Structures, Logistics
BSME – Clarkson University (upstate NY)
Hometown – Buffalo, NY via W. Palm Beach, FL

My Job
- Lead the Project discipline
- Set the standards for project execution
- Train/mentor less experienced people

Biggest surprise –
UCONN PROJECT MANAGEMENT

Expectations for this Class Are Different

May be uncertain over how to proceed
Must learn new skills - *independently*
May have exposure to Project management techniques
Must work in a small team
May be unclear about the deliverables
Will feel pressure on work/life balance
Will experience working for a customer
Q: What is a Project?
A: A temporary endeavor undertaken to create a unique product, service, or result \(^{(1)}\)

Other typical elements
- Constraints – Time, $$, resources
- Outcome is uncertain
- Requires multiple skill sets – Team

Q: What is Project Management?
A: The application of knowledge, skills, tools, and techniques to project activities to meet the project requirements \(^{(1)}\)

\(^{(1)}\) A Guide to the Project Management Body of Knowledge, by Project Management Institute, Fifth Ed, 2013
UCONN PROJECT MANAGEMENT

Agenda – Follow the 5 Steps

1. INITIATE
   - Charter

2. PLAN
   - Work & Responsibilities
   - Schedule

3. EXECUTE
   - (Design, Build & Test)

4. STATUS
   - Status & Communicate

5. CLOSE
   - Close-Out
In Industry:
- Leader is named right away
- Clear accountability (decisions)
- Teams are large
- Recruits other team members
- Project scope may be unclear
- Roles/Responsibilities clear

At UConn:
- Leadership is uncomfortable
- Accountable to each other
- Teams are small
- All team members are peers
- Project is defined
- Roles/Responsibilities must be worked out

Talk about each person’s background and skills

Figure out who will be the lead for various roles – rotate if needed

No matter what, work out escalation process (conflict resolution)
A Project Statement documents what the team will do (and not do)

- Strategic objective
- Level 1 schedule
- Requirements vs. Goals
- Deliverables

Why have a Project Statement?

- Sets expectations – for you and the customer
- Prevents “scope creep” – endless customer requests

Ask sponsor if there is a Project Statement format available
If not, create one using MS Office; search for templates online
Fill it out, and get signatures (team, sponsor, other stakeholders)
PLAN – Define Work

Define what work needs to be done

- Segment the Project using a Work Breakdown Structure (WBS)
- A time-phased approach is common – refer to Level 1 schedule

Continue to break the work down into activities

- List all activities to be completed within each phase, in sequential order
- Work includes communication, status, and presentations

Use the Level 1 milestones to help define the WBS

Define the activities within each phase

This is input to building a good schedule
Assign responsibility for activity completion (RACI chart)

- Owner assigned to each activity
- Owner also estimates time / other resources
- Ownership can rotate over time

<table>
<thead>
<tr>
<th>Activity</th>
<th>Team member #1</th>
<th>Team member #2</th>
<th>Team member #3</th>
<th>Team member #4</th>
<th>Professor</th>
<th>Faculty Advisor</th>
<th>Sponsor</th>
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<tbody>
<tr>
<td>Publish Project Statement</td>
<td>R</td>
<td>C</td>
<td>C</td>
<td>C</td>
<td>A</td>
<td>C</td>
<td>I</td>
</tr>
<tr>
<td>Meet with Sponsor</td>
<td>C</td>
<td>C</td>
<td>C</td>
<td>R</td>
<td>C</td>
<td>C</td>
<td>A</td>
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<td>C</td>
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<td>I</td>
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<td>C</td>
<td>C</td>
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<td>Create schedule</td>
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<td>C</td>
<td>C</td>
<td>A</td>
<td>I</td>
<td>A</td>
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<tr>
<td>Present oral report #1</td>
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<td>C</td>
<td>R</td>
<td>A</td>
<td>C</td>
<td>I</td>
</tr>
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</table>

R Responsible: The person responsible for getting the work done
A Approver: The person who must approve the completed work
C Consulted: Anyone who will participate in the work
I Informed: Anyone who needs to know about work status or completion

Create a RACI chart
Owner defines time estimates
This is input to building a good schedule
PLAN – Build a Schedule

Use MS Project to make a detailed schedule by phase

- Enter all activities with time/resource estimates
- Include no-work time (Holiday/Spring break, finals, family events, etc.)
- Add deliverables/required completion dates and adjust
- Include “buffer time” for unexpected delays

Build the plan into the scheduling software

Iterate until the schedule is achievable – this will likely take multiple meetings to successfully complete
Identify risks by answering these questions:

- What are the technical obstacles to be overcome?
- Are there sufficient resources available?
- Are there time constraints that can interfere?

Complete a risk cube

- Assign each risk a likelihood and severity rating
- Keep this simple – relative ratings are sufficient
- For all “Red” rated risks, develop plans to mitigate

Hold a dedicated team meeting to ID and mitigate high risks

Ensure Sponsor is aligned with Red risks

Review and update Project risks regularly
EXECUTE – (Design, Build) & Test

Testing time is usually compressed

Best practices to be efficient:

- Create a Bill-of-Material (parts list). Include Source, Quantity, and Spares
- Reserve access to test site, equipment, personnel, etc. well ahead of time. Plan for lots of iterations
- Understand / control measurement error. Ensure results repeatability.
- Is rapid prototyping an option?
- Order long-lead material early

Make a detailed parts list (BoM)

During design/analysis, find ways to run confirmation tests

Make a detailed test schedule if there’s any constraints on availability

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<th>#</th>
<th>Name</th>
<th>Part #</th>
<th>Description</th>
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<th>Source</th>
<th>Cost</th>
<th>Time to R&amp;R</th>
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<td>120 min</td>
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</table>
STATUS – Internal Communication

Regular team meetings are a must
• Pick a time/location/frequency convenient to all
• Leverages skills from full team
• Prevents issues from festering
• Allows for discussion before escalation
• Create/maintain a standing agenda
• Re-allocate responsibilities as required

Set up frequent, recurring team meetings (weekly)

Decide who will publish agenda, minutes

Review the schedule, risks, and near term plan at every meeting

Team Guidelines
✓ Goal alignment
✓ Open communication
✓ No secrets
✓ Dedicated, active participation
Sponsor meetings are a must

- Pick a time/location/frequency convenient to all
- Start by saying “What we’re thinking is…”
- Ensure alignment – find out early if off-track
- Allows for discussion of re-plan

Without a meeting, sponsor will assume:
1) Either everything is on-plan, or
2) Nothing is being accomplished

Set up regular sponsor meetings, in person if possible, at least monthly

Work to build a rapport, while being sensitive of their valuable time

Have a consistent format showing plan, progress, near term actions

Sponsor Meetings
✓ Clear, crisp, concise agenda
✓ Written material, w/recommendations
✓ In-person, then Video, then Phone
✓ Be positive!
A solid closing report is critical

- Schedule time to do this well – do not procrastinate!
- Document process and results – even if negative
- Write just enough detail so results could be duplicated
- Include suggestions for follow-on investigation
- Write report ahead of time, except for final answers

Preparing for Presentations

- Have a clear message
- Outline crisply and concisely
- Practice, practice, practice!

Outline and begin writing report well in advance of due date

Preparation and rehearsal are key to delivering effective presentations
Project Management Tools Used

Take advantage of the tools discussed:

1. Project Statement
2. Work Breakdown Structure (WBS)
3. RACI chart
4. Scheduling software (MS Project)
5. Risk cube
6. Design notebook
7. Bill of Material
8. Closing report

They will greatly improve your success rate!!
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Wrap-up – Follow the 5 Steps

#1 INITIATE
- Leadership
- Charter

#2 PLAN
- Work & Responsibilities
- Schedule
- Risk
- (Design, Build & Test)

#3 EXECUTE

#4 STATUS
- Status & Communicate

#5 CLOSE
- Close-Out
Questions?