

Using Milestones for Student Project Success

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Abstract

Students in Master's Degree programs are often assigned projects that span an entire semester. Some students do not start on the project until near the middle of the semester and some wait until the end. The procrastination causes stress in a student population that is already stressed due to work and family commitments. As the program started developing 8-week online courses, there was concern that students would not complete the projects in the shorter amount of time. Milestones were developed for the semester-long project to assure that students completed the project on time and to the instructor's expectations. This paper provides an example of milestones for a semester-long project that align with module objectives and serve as an example roadmap for project management.

Keywords

Project Management, Milestones, Objectives

In the Engineering Management and Project Management programs at the University of Kansas, most of the students are working professionals. The students must balance their time between homework, work, and family. For course homework, projects are typically assigned to teams of students and the project spans the entire semester. The project required students to research a type of business and create a project plan to develop the business. The students were expected to work together over the semester to complete the project assignment. Students were made aware of the expectations for the project via the syllabus, class lectures, and Blackboard assignment instructions that include rubrics. In the face-to-face course, which is 16 weeks long, some students did not start on the project until near the middle of the semester and some waited until the end. The procrastination causes stress in a student population that is already stressed due to work and family commitments. As the program started developing 8-week online courses, there was concern that students would not complete the projects in the shorter amount of time and that if they did complete the project, it would not meet expectations.

Since the students are in a Project Management program, it is important for them to practice working on various projects. The Project Management Institute defines project management as the application of knowledge, skills, tools, and techniques to project activities to meet the project requirements (Project Management Institute 2017). An important part of creating projects is the breakdown of work and the creation of milestones. According to Andersen (2006), a milestone should describe what we want to achieve and should be formulated should allow us to determine whether the desired state has been achieved or not. Milestones were developed for the semester-long project to assure that students completed the project on time and to the instructor's expectations.

Milestones and Objectives Alignment

While developing the project assignment for an 8-week online course, it became clear that the assignment would need to be developed like a project. As the online course was developed, the objectives for each module needed to be aligned with the homework tasks assigned. For the project, it was difficult to determine if the objectives had been met until the last week of the course, so the project assignment was broken into smaller parts associated with each module. These smaller parts are milestones as they tell the instructor whether the desired state has been achieved. Creating milestones is not new as instructors have been using scaffolding for writing assignments in other courses. Assignment scaffolding is the process of structuring assignments and course material in a systematic way to support your learning objectives and make the goals and process transparent to students (Skene & Fedko n.d.). Scaffolding also helps provide feedback early on, so students can benefit from it and produce better assignments. For the Project Management courses the milestones are graded and feedback is provided so students can improve and learn throughout the course instead of waiting until the end for a final grade on the project. The following are examples of how milestones were used in Project Management Fundamentals II.

In the course syllabus, the overall project is defined and the milestones are listed:

D Group Project Report and Presentations

Students will work in groups for this assignment. For this project, you are to develop a plan to start up a food truck in Overland Park, KS. The final project plan should contain:

- Requirements
- Project scope statement
- Work breakdown structure
- Project scheduling
- Financing and Budget
- Risk analysis

The project contains four milestones prior to the completion of the report and presentations.

- M1: Requirements and scope/Project Charter
- M2: Strategy, assumptions, and constraints
- M3: Work breakdown structure and first presentation
- M4: Financing and budget

You will need to do some library literature research on food trucks. **Your literature research must consist of at least eight references, at least four of which must be from published articles, journals, or books.**

The course schedule shows when each milestone is due as well as when the final project is due. The total points for the project were distributed so each milestone is worth 25 points and the final paper is worth 100 points for a total of 200 points for the project.

PMGT817 Online Class Schedule

Fall 2017	Start:	Oct 24	Oct 27	Nov 03	Nov 10	Nov 17	Nov 24	Dec 01	Dec 08
	Week:	1	2	3	4	5	6	7	8
	Due Date:	Oct 31	Nov 07	Nov 14	Nov 21	Nov 28	Dec 05	Dec 12	Dec 15
		Intro to Class - Project Reqmnts	Project Scope Review - Time Mgmt.	Work Break- down Structure	Project Scheduling	Project Esti- mating & Budgeting	Project Evalua- tion & Control	Project Trade- off Analysis - Risk Mgmt.	Class Wrap- up - Final Exam
Research Project	200		M1	M2	M3		M4	*	

The objectives for each module were created and align with the semester-long project. Below are the objectives and tasks for Module 3:



Objectives & Tasks

The learning objectives for this module are:

- Determine tasks/activities necessary for project deliverables
- Apply skills and terminology to create work breakdown structures (WBS)
- Analyze a current event that is relevant to the field of Project Management

The tasks to be completed are:

- Read PMBOK Section 5.4
 - Think about how you subdivide projects into smaller components.
- Read Nicholas Chapter 5
- Watch lecture videos and YouTube videos
- Complete Quiz #2
- Post Current Event #1 Commentary
- Submit Research Project Milestone #2

The milestones in Blackboard contain information on the project as well as a description of the milestone that is due for this module. The milestones were setup as assignments with a due date and group. The following is an example of a milestone description in Blackboard:



Research Project Milestone #2

Students can work independently or work in groups for this assignment. For this project, you are to develop a plan to start up a food truck in Overland Park, KS. The final project plan should contain:

- Requirements
- Project scope statement
- Work breakdown structure
- Project scheduling
- Financing and Budget
- Risk analysis

The project contains four milestones prior to the completion of the report. For this assignment, Milestone #2 is to be completed which is to define the project strategy as well as document project assumptions and constraints.

Instructions for submitting your Research Project Milestone in Blackboard:

1. Review the Assignment Information, then go to the section Assignment Submission.
2. Click **Browse My Computer**
3. Select the document file you created for this assignment.
4. Click **Submit**

The milestones were originally created for 8-week online courses because face-to-face students do not start on the project until near the middle of the semester and some waited until the end. Because online courses are shorter, procrastination would have been detrimental to the student's grade.

Comments from students before milestones were implemented:

For the food truck assignment, I would have liked to have had some more guidance as to the minimum requirements to be included in the Project Plan. At the end of Week 7 Slide had a list of what should be included in the Project Plan, yet, we still lost some points because we did not included a few components that were not on that list.

I generally loathe group work and not just in this class. I believe that students need to really utilize more of the concepts being presented. Individually create a project plan, a communication plan, risks and issues, etc. Be personally invested and accountable for each of these assignments.

Comments from students in the summer course about milestones:

As I registered for the class I was a bit overwhelm by the fact that I was going to take an online summer class. I tried to get mentally prepare because I had I lot of other things going on personally and at work. I really liked the fact that we had milestones to me that personally helps me a lot I wish other professors would do the same.

Regarding the group project, the milestones were a practical way to solidly structure the work so it was never overwhelming.

Overall, I enjoyed this summer course. I like how the project was split up into 4 milestones. That makes it easier to manage. I also liked how the videos had powerpoints that I could print off and take notes with. The biggest thing for a working professional is time management and I felt the course gave us a good balance to the point that I didn't feel too overwhelmed.

Comments from students in the spring course about milestones:

I enjoyed working in teams and collaborating on the group project, learning different ideas and perspectives on the application of project management knowledge from the other team. I particularly liked that the final project was assigned and not chosen by the individual groups. Hence, I had an opportunity to learn about a business I would not have given a thought to research on. Also, the fact that deliverables for the project was spread out through the semester, made it easy to complete the project without feeling like it was busy work at the end of the semester.

I really appreciated the Milestones for the Project - it helped me and my team stay on task and not procrastinate and scramble at the end of the semester.

Comments from students in the fall course about milestones:

What I did like about this course was the research project and how it was set up. I enjoyed doing the research and coming up with your own business plan. I also enjoyed that fact that you broke the project up into 4 different milestones. It didn't feel overwhelming and you were able to take your time. I would recommend you keep the flow of that process.

I agree that the milestones were helpful to build the research projects. I hope to get to explore more of Microsoft Project in the future as well.

Grades were slightly higher for the most recent projects with milestones. Students made fewer complaints about team members. Now that the online courses have been developed with milestones for projects, the same structure is now being added for several face-to-face courses.

References

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Heather McCain is currently a Professor of the Practice at the University of Kansas. She has more than 30 years of experience in quality engineering and management. She works with companies to implement continuous improvement methodologies. Recently she was the Quality Manager for Consumer Product at Garmin International. Prior to joining Garmin, Heather was with Hallmark Cards and AlliedSignal (now Honeywell) Aerospace and Automotive. She earned a BS in Electrical Engineering from Kansas State University and a MS in Engineering Management from The University of Kansas. She is pursuing her PhD in Technology Management from Indiana State University.