Syllabus and Lessons Learned for Experimental Course – Introduction to Project Management
At Drake University, Des Moines, Iowa

Purpose: This document provides the syllabus for the experimental course, Introduction to Project Management, taught during the Spring 2016 semester at Drake University in Des Moines, Iowa. The goal of this document is to provide the content of what was taught, share lessons learned, and request feedback from professors who teach project management to undergraduate students.

Introduction:
In the summer of 2015, Drake University's College of Business & Public Administration undertook the development of an experimental, introductory course in project management. Factors that contributed to pursuing this course include:

- The recent release of the Project Management Institute's (PMI) *Guidelines for Undergraduate Project Management Curricula and Resources*
- Positive 3-year relationship with local PMI chapter
- Drake Enactus projects stressed the need for a formal project management approach
- Sabbatical leave within the College of Business and Public Administration provided a schedule opportunity for the course

Drake University selected Norm Veen to develop and teach the course. His background includes:

- 30 years of project management experience in manufacturing, agriculture and financial services
- MBA degree from Minnesota (Mankato) State University in 1986
- PMI Project Management Professional (PMP) since 2001 and Certified Associate in Project Management (CAPM) since 2014
- PMI – Central Iowa Chapter Board Member from 2004 through 2014; taught various *PMBOK®* knowledge areas for certification preparatory courses offered by the chapter
- Business Advisory Board member for Drake University Enactus since 2013
- First-time Adjunct College Instructor in 2016

The three credit hour course was open to seniors and juniors who had previously taken Management (MGMT) 120 – Management of Operations: a study of the operations functions of organization, focusing on providing services and producing goods efficiently and effectively. Introduction to Project Management was taught as a weekly, three-hour night class running from January 27, 2016 through May 11, 2016. The class was comprised of 21 students: 18 seniors and 3 juniors, whose majors were mainly in Management and Marketing.

The author expresses his thanks to Drake University Professors, Dr. Bradley C. Meyer, Chair for the Department of Management and International Business, and Dr. Debra S. Bishop, Associate Professor of Practice in Management and International Business and Enactus Faculty Advisor for their assistance in the development of the Introduction to Project Management course at Drake University.

It is suggested that the reader review the content of the course syllabus beginning on the next page before the lessons learned discussion that follows.

Comments and feedback on this material can be emailed to Norm Veen.

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Syllabus:

1. *Course Purpose, Objectives, and Teaching Methodology*: The role of projects in organizations is becoming increasingly important. Projects are the major mechanism for implementing and achieving strategic goals of the organization. The purpose of this course is to provide students an understanding of project management and the skills, tools, and techniques to work on a project successfully. This course covers fundamental concepts and skills to propose, initiate, plan, execute, monitor and control, and close projects. This course will:

    - Provide students experience in using fundamental concepts, techniques, and tools available to project managers regardless of industry domain.
    - Teach critical-thinking and problem-solving skills that are important for success in project management.
    - Cover key project management components including organizational influences, the project life cycle, and the management of project integration, scope, time, cost, quality, human resources, communications, risk, procurement, and stakeholders.
    - Emphasize the importance of ethics and professional responsibility throughout a project.
    - Expose students to Microsoft Project and demonstrate its usefulness for planning and scheduling projects.
    - Qualify for the education requirement to apply for the Project Management Institute's (PMI) Certified Associate in Project Management (CAPM) certification exam. The CAPM is a certification designed to reflect an individual's knowledge of project management processes and terminology.

    In pursuing these objectives, the course will:

    - Use lecture, classroom exercises, homework assignments, and exams to help the student learn the terminology and fundamental concepts of project management. Textbook resources for the course are:
        - *Project Management: The Managerial Process – Sixth Edition*
        - *A Guide to the Project Management Body of Knowledge (PMBOK® Guide) – Fifth Edition*
    - Assign students to work on a project team to apply the concepts, tools, and techniques in practice throughout the course.
    - Offer an optional one credit hour lab that focuses solely on preparing the student to apply and take the CAPM certification exam. The additional required resource for the lab is *CAPM Simplified - 5th Edition*.

    After successfully completing the course, the student will be:

    - Fully acquainted with the project manager's role within an organization and how the project management processes and the project life cycle interact.
    - Able to comprehend and use basic tools and techniques to plan, organize and manage a project.
    - Familiar with working in teams, leading team members, and interacting with project stakeholders through effective communication.
    - Cognizant of the importance of ethical considerations and professionalism in all aspects of project activities.
    - Equipped to apply, prepare, and take the CAPM certification exam.

2. *Session Topic Outline*:

Week	Session Topic	Sub-Topics	Activities
1 1/27	Project Manager and project environment	Definitions Project manager's role Internal & external environment Project structures PM processes Project management office Organization strategy Program & portfolio management Project Selection - Business case / Financial Analysis	• Identify projects in the students' experience vs. ongoing operations • Define project management processes and product and project lifecycles • Give examples of mismatches between projects and company missions. • Perform net present value (NPV) analysis for a project
2 2/3	Initiate a project	Project charter Stakeholder identification & assessment	• Introduce: o PMI Code of Ethics & Professional Conduct o Stages of team development o RACI charts • Write a project charter • Create a stakeholder register • Assign student class project
3 2/10	Develop project plan (part 1 of 4)	Scope management Assumptions and constraints Requirements management Work Breakdown Structure (WBS)	• Write a scope statement • Create a WBS • Control scope on a project • Introduce risk management • Draft communication plan • Introduce MS Project
4 2/17	Develop project plan (part 2 of 4)	Critical Path Network Estimate resources Scheduling tools & techniques	• Define Milestones & Activities • Sequence Activities • Develop Schedule
5 2/24	Develop project plan (part 3 of 4)	Cost estimation techniques Earned value	• Develop a cost estimate • Control schedule & cost on a project
6 3/2	Develop project plan (part 4 of 4)	Quality management Human Resource management Risk management Procurement management	• Discuss use of quality tools • Discuss mitigation strategies • Discuss contract types
7 3/9	Mid-term exam Mid-term class project presentation		
8	**Spring Break**	**** March 14 – 18 ****	
9 3/23	Review project plan processes	Project plan adjustments Scheduling resources	• Review / catch-up planning topics • Make class project adjustments
10 3/30	Execute a project plan	Executing processes Ethics & Professionalism	• Emphasize integrator role of project manager

Week	Session Topic	Sub-Topics	Activities
			• Discuss project accountability
11 4/6	Monitor and control project work	Performance Reporting Forecasting techniques Change Management	• Create project status report • Write a change request
12 4/13	Close a project	Update project artifacts Lessons learned	• Write project lessons learned
13 4/20	Special PM topics	International Projects Virtual Teams Agile techniques	• Discuss: cross-culture considerations; virtual communication methods; Agile Methods
14 4/27	CAPM Exam	Project Management Institute Value of PM certification CAPM certification application	• Review CAPM Handbook
15 5/4	Final class project presentation		
16	Final exam	**** May 11 ****	

3. *Course Grading*: (Note that other requirements, policies, and standards for the class are omitted here for brevity. The complete syllabus can be obtained by emailing **Norm Veen**).

Component	***Points***
Assignments (25%)	125
Class Participation (10%)	50
Class Project (20%)	100
Mid-Term Exam (20%)	100
Final Exam (25%)	125
Total Course Points:	500
Total Points Earned	***Course Grade***
450 - 500	A
400 - 449	B
350 - 399	C
300 - 349	D
<300	F

Lessons Learned:

1. Amount of the project management material covered in the course was too much for students to effectively comprehend without previous project exposure in a 'real-world' organization. Student suggestions in this area included:

    - Create a simple and meaningful 'roadmap' to the processes within the project management life cycle.

    - Do not use multiple textbooks for the course. If the primary content is coming from the *PMBOK® Guide*, use it as the text for the class. This will reduce confusion and cost to students.

    - Focus only on key project management concepts during class. Don't try to cover every process and each input, tools and technique, and output in class--this just makes the content more confusing and class time less engaging.

    Based on the above suggestions, the following actions are under consideration:

    - Create a Management Roadmap to the Project Management Life Cycle (as defined in the *PMBOK® Guide Fifth Edition*). The roadmap presents twelve major management questions that the project manager must answer during the project and which Process Group, Knowledge Area, Process, and Key Outputs address each question. These questions are germane to projects, regardless of industry domain or project life cycle (e.g. predictive, iterative, or agile). A draft roadmap (ManagementRoadmap_PM_LifeCycle.xlsx) is attached with this PDF document.

    - Use the *PMBOK® Guide* as the course textbook to 'teach to a globally recognized standard for project management'. Supplement with free available materials as needed for course topics (e.g. articles). Utilize more outside speakers to talk on specific projects to better relate concepts to practice.

    - Use more classroom exercises to reinforce learning of key project management concepts (e.g. how would you handle this actual project situation based on what was just covered in class?).

2. PMI's *Guidelines for Undergraduate Project Management Curricula and Resources* were instrumental in establishing the basic framework for the Introduction to Project Management course by:

    - Supplying key input to learning outcomes, content, and class project.

    - Providing the course's "movie plot and trailer". The instructor, however, needs to build out the course (i.e. select course materials, create assignments, exercises, and tests). This is not a criticism of PMI's materials, but it is mentioned only to set expectations as faculty review and use the materials.

    The development of the course materials began in July, 2015 and completed in January, 2016. On average, 25-40 hours were spent by the instructor to prepare each of the 15 class sessions.

3. The concept of a "running problem case" was thoroughly developed within Volume II: The Foundations of Project Management Course PM-1 of the *Guidelines for Undergraduate Project Management Curricula and Resources*. This is an excellent resource for the course and its use was well-received by the students. The problem case deals with Wilmont, a hypothetical, top-ranked U.S. retail pharmacy, that is secretly considering delivering prescriptions by flying drone. The problem case materials included syllabus information, student deliverables, and suggested grading criteria. The problem case is adaptable for Engineering, IT, and Management domains. What follows explains how the problem case was used and insights gained as a result.

    How the Problem Case was Used: The class was divided into two project teams: The IT Team (10 students) and the Management Team (11 students). Each student signed up to be the project manager of the week for his or her respective team. The project manager was responsible to get the weekly deliverable completed by the team and submitted to the instructor. No points were given for the weekly submittal, but points were deducted if the deliverable was not submitted on time. The instructor provided feedback on each team's deliverable. This feedback was incorporated at the discretion of the project teams for their class presentations. One presentation was given at mid-term and another the week before finals. Each presentation covered the deliverables completed to that point, lessons learned by the students, and verbal answers provided to questions from the instructor and the other team during the presentation. Use of the problem case focused on key planning deliverables. Graded final deliverables were:

Project Charter	Milestone List
Stakeholder Register	Sequenced Activity List
Communication Plan	Project Schedule
Scope Statement	Risk Register
Work Breakdown Structure (WBS)	Impact Assessment for a Change Request

Insights Gained: Because of the number of students on each team, it was difficult to schedule time outside of class for each entire team to complete the weekly deliverable. Adjustments were made to class time so each team could meet during a portion of the last hour of class to work on project deliverables. Students were accustomed to working in smaller teams of 3-4 people for other classes so working in a group of 10-11 provided communication challenges. This aspect and how they met these challenges were mentioned in each team's lessons learned.

The instructor gave no direction or guidance as to how each team was to complete project deliverables. Consequently, each team developed their own process on how to draft, elicit feedback, and present project deliverables. Students seemed to handle this aspect fairly easily even though many of them had not worked together before on a group assignment. This demonstration of teamwork by the students was the key positive of the course.

4. Microsoft (MS) Project 2013 was used for only two assignments. Videos provided by one of the textbook authors were used by the students outside of class to learn the basics of MS Project. The assignments consisted of building an established project schedule, creating a project calendar, assigning resources, and leveling over-allocated resources using MS Project.

   Student access to MS Project 2013 was available through: 1) DreamSpark, a Microsoft program to provide students with software at no charge, 2) Virtual Device Interface (VDI), also known as Citrix, used to execute the software on a server from a laptop, and 3) Lab area where MS Project 2013 was loaded on a number of Windows desktop computers.

   Limited class time was given on how to use MS Project for fear of overemphasizing the role of a software tool for project management. Some students experienced technical difficulties loading the software (MS Project or Citrix) on their laptops or were unable to use the lab area for the MS Project assignments. Feedback from professors who use MS Project in their classes on how to best utilize this resource would be greatly appreciated.

5. The optional one credit hour lab focused solely on preparing students to apply and take the CAPM certification exam. The lab was utilized by three of the Introduction to Project Management course's students. At the time of this writing, one of the students has taken and passed the CAPM exam. The lab is designed to be taken independently of the course so increased focus could be given in preparing for the CAPM exam. This arrangement accommodates students who want to take the Introduction to Project Management course but are not interested in CAPM certification and those who are motivated to obtain CAPM certification. This concept was developed by Dr. Debra S. Bishop, Associate Professor and Enactus Faculty Advisor with Drake University.

   The lab was conducted as eight weekly 2-hour sessions that began two weeks after the start of the semester to allow time for promotion of the value of CAPM certification to Drake students. The lab proved to be a good complement to the Introduction to Project Management course and seemed to meet the objectives stated above. The syllabus and other materials for the lab can be obtained by emailing **Norm Veen**.

Comments and feedback on this material can be emailed to Norm Veen.