Colorado State University
GLOBAL CAMPUS

PJM480: Capstone – Project Management

Credit Hours: 3

Contact Hours: This is a 3-credit course, offered in accelerated format. This means that 16 weeks of material is covered in 8 weeks. The exact number of hours per week that you can expect to spend on each course will vary based upon the weekly coursework, as well as your study style and preferences. You should plan to spend 14-20 hours per week in each course reading material, interacting on the discussion boards, writing papers, completing projects, and doing research.

Course Description and Outcomes

Course Description:
In this capstone course, students demonstrate what they learned throughout the project management program by applying leadership, critical thinking, problem solving, and creativity skills to real-world situations. Students also make use of the CSU-Global Career Center and develop a resume and career plan.

Course Overview:
In this capstone course, students will complete the capstone assignments that address the program outcomes for the Bachelor of Science in Project Management. The course begins with an exploration of resume building and career planning. In Modules 2 through 7, students will have the opportunity to demonstrate what they learned throughout the Project Management Program by applying leadership, critical thinking, problem-solving, and creativity skills to real-world situations. Subjects include earned value management (EVM), work breakdown structure (WBS), risk management, project selection, critical paths, and conflict resolution. This course explores methods and strategies for asset procurement, risk, responsibility assignment matrices, organizational structure, project control, monitoring, project costs, and project benefits. Students will also learn to apply the soft skills associated with leadership, communication, and team building. In the final module of the course, students will make use of the CSU-Global Career Center to develop a resume and a career plan.

Course Learning Outcomes:

1. Develop a resume and career plan.
2. Navigate the CSU-Global Career Center.
3. Analyze the metrics of earned value management.
4. Identify project risks and develop risk-mitigating techniques.
5. Analyze project selection methods and criteria.
6. Determine the critical path for a project.
7. Develop a work breakdown structure for a project.
8. Analyze conflict resolution techniques in project management.

Participation & Attendance

Prompt and consistent attendance in your online courses is essential for your success at CSU-Global Campus. Failure to verify your attendance within the first 7 days of this course may result in your withdrawal. If for some reason you would like to drop a course, please contact your advisor.

Online classes have deadlines, assignments, and participation requirements just like on-campus classes. Budget your time carefully and keep an open line of communication with your instructor. If you are having technical problems, problems with your assignments, or other problems that are impeding your progress, let your instructor know as soon as possible.

Course Materials

Textbook Information is located in the CSU-Global Booklist on the Student Portal.

Course Schedule

Due Dates
The Academic Week at CSU-Global begins on Monday and ends the following Sunday.

- Discussion Boards: The original post must be completed by Thursday at 11:59 p.m. MT and Peer Responses posted by Sunday 11:59 p.m. MT. Late posts may not be awarded points.
- Critical Thinking: Assignments are due Sunday at 11:59 p.m. MT.
- Program Completer Survey: Be sure to complete this survey before the end of Week 7. The link to the survey can be found in Module 7 folder.
- ETS Proficiency Profile Assessment**:** Be sure to complete the assessment before the end of Week 7. The link to the Proficiency Profile Assessment can be found in Module 7 folder.

Week #	Readings	Assignments
1	**Required**: - Module 1 content	- Discussion (25 points)
2	**Required**: - Chapter 10 in *A Guide to the Project Management Body of Knowledge* - Cleland, D. I. (1986). Project Stakeholder Management. Retrieved from http://www.pmi.org/learning/library/project-stakeholder-management-5216 - Eskerod, P., Huemann, M., & Savage, G. (2015). Project stakeholder management—past and present. *Project Management Journal*, *46*(6), 6-14. (Abstract only available until 2/2017.) **Recommended**:	- Discussion (25 points) - Capstone Assignment (75 points)

	• Morsing, M., & Schultz, M. (2006). Corporate social responsibility communication: stakeholder information, response and involvement strategies. *Business Ethics: A European Review*, *15*(4), 323-338. • Thomas, S. R., Tucker, R. L., & Kelly, W. R. (1998). Critical communications variables. Journal of *Construction Engineering and Management, 124*(1), 58-66.	
3	**Required**: • Heerkens, G. R. (2013). Next top projects. *PM Network*, *27*(7), 67. • Kihm, S., & Hackel, S. (2012). Economic analysis in individual project selection. *Consulting-Specifying Engineer*, *49*(5), 40-44. • Project Management Academy. (2016). Selection methods: A primer for the project manager. Retrieved from http://projectmanagementacademy.net/articles/project-selection-methods/ • Saaty, J. (2015). R&D planning and selection: The "silver bullet" fallacy and the use of scenarios. *R&D Magazine*, *57*(4), 24.	• Discussion (25 points) • Capstone Assignment (100 points)
4	**Required:** • Chapter 5 in *A Guide to the Project Management Body of Knowledge* • He, W. (2014). A framework of combining case-based reasoning with a work breakdown structure for estimating the cost of online course production projects. *British Journal of Educational Technology*, *45*(4), 595-605. doi:10.1111/bjet.12043 **Recommended**: • Malone, B. A. (2012). Work breakdown structure. *Sound & Video Contractor*, *30*(7), 82.	• Discussion (25 points) • Capstone Assignment (100 points)
5	**Required**: • Chapter 6 in *A Guide to the Project Management Body of Knowledge* • Joyce, E. (2013). How to make CPM schedule tools more friendly, truthful. *ENR: Engineering News-Record*, *270*(3), 16.	• Discussion (25 points) • Capstone Assignment (100 points)
6	**Required:** • Chapter 11 in *A Guide to the Project Management Body of Knowledge* • Hoimlin, R. M. (2015). Zombie risks. PM Network, 29(7), 25. • Malooley, J. (2015). If only I'd known. PM Network, 29(1), 48-53. • Rentschler, C., & Shahani, G. (2015). Better risk-management methods ensure project success.	• Discussion (25 points) • Capstone Assignment (100 points)

	Hydrocarbon Processing, 94(7), 69-72. **Recommended:** • Hillson, D., & Simon, P. (2012). *Practical project risk management: The ATOM methodology*. Tysons Corner, VA: Management Concepts Press.	
7	**Required**: • Chapter 6 in *A Guide to the Project Management Body of Knowledge* • Bergerud, C. (2015). Selling executives on the predictive powers of EVM. *PM Network*, *29*(2), 59. • Bier, L. (2015). Securing team buy-in for EVM. *PM Network*, *29*(2), 56-57. • Hatfield, M. (2015). Three EVM mistakes you don't want to make. *PM Network*, *29*(2), 60-61. **Recommended**: • Project Management Institute [PMI]. (2011). *Practice standard for earned value management* (2nd ed.). Newtown Square, PA: Author.	• Discussion (25 points) • Capstone Assignment (100 points) • Program Survey (25 points) • Proficiency Profile (50 points)
8	**Required**: • Module 8 content	• Discussion (25 points) • Capstone Project – Resume (75 points) • Capstone Project – Career Plan (75 points)

Assignment Details

This course includes the following assignments/projects:

Module 1

CAPSTONE PROJECT: RESUME AND CAREER PLAN REMINDER (0 points)
Now is the time to start planning your final project. The description and requirements for the Resume and Career Plan are in Module 8 folder. Review and begin planning this week.

Module 2

CAPSTONE ASSIGNMENT (75 points)
Choose one of the following two assignments to complete this week. Do not do both assignments. Identify your assignment choice in the title of your submission.

Option #1: Communications Plan
Download the .PDF available at: http://www.pmi.org/-/media/pmi/documents/public/pdf/white-papers/communications.pdf. Read the case study on page 4. Create a communications plan based on your interpretation of the project.

Your communications plan should include the elements of a communications management plan as found in Section 10.1.3.1 of Chapter 10 in *A Guide to the Project Management Body of Knowledge*.

Your paper should meet the following requirements:
- Be at least 3 pages in length.
- Be formatted according to the *CSU-Global Guide to Writing and APA*.
- Include two scholarly sources. The CSU-Global Library is a good place to find these sources.

Option #2: Stakeholder Analysis

Download the .PDF available at: http://www.pmi.org/-/media/pmi/documents/public/pdf/white-papers/communications.pdf. Read the case study on page 8. Analyze the case in light of Cleland's project stakeholder management cycle. Write an analysis of the case that would:
- Identify stakeholder groups.
- Profile information on the stakeholder groups.
- Identify stakeholders' mission.
- Determine stakeholder strengths and weaknesses.
- Identify stakeholder strategy.
- Predict stakeholder behavior.

Your paper should meet the following requirements:
- Be at least 3 pages in length.
- Be formatted according to the *CSU-Global Guide to Writing and APA*.
- Include two scholarly sources. The CSU-Global Library is a good place to find these sources.

Module 3

CAPSTONE ASSIGNMENT (100 points)

Choose one of the following two assignments to complete this week. Do not do both assignments. Identify your assignment choice in the title of your submission.

Option #1: Project Selection

Examine the following scenario:

> Program X has planned about $1 billion worth of projects every year. One of the key challenges is to identify which projects to fund at the beginning of each year. Projects are piling up on the CIO's desk for the upcoming year. The list includes a range of upgrades, support, automation, new product development, and so forth. You have been given the responsibility of selecting projects for the upcoming year.

For your assignment, address the following questions. Your responses should be integrated in a well-written paper.
1. Determine how you will do this.
2. Develop a project selection and screening system with stage-gate review, including project performance criteria.
3. Specifically define all selection criteria and why you chose each.
4. Diagram the elements of your process, include stage gate reviews.
5. Utilize a selection methodology, either numerical or non-numerical, to support the value of the project. Create your own project data for five projects (i.e., project resources, tasks). Show your work and analyze the outcome. Include this in your diagram.

Your paper should meet the following requirements:
- Be 2-3 pages in length, plus graphical elements placed in an appendix.
- Be formatted according to the *CSU-Global Guide to Writing and APA*.
- Include two scholarly sources. The CSU-Global Library is a good place to find these sources.

Option #2: Project Selection Review

Using past course texts, current suggested readings, and other scholarly resources, define the project selection process.

For your assignment, address the following in a well-written paper.
1. Describe the project selection process.
2. Describe the selection criteria that should be considered and why they are important.
3. Describe stage gate reviews and evaluation criteria.
4. Describe the differences you might see between IT projects and manufacturing projects.
5. Describe two methods to support value (NPV, ROI, Payback) and assess the viability of new projects. Include why they are used, how they are calculated, and the value each adds.

Lastly, conclude with a summary for an organization that may be using your review as a guide.

Your paper should meet the following requirements:
- Be at least 3 pages in length.
- Be formatted according to the *CSU-Global Guide to Writing and APA*.
- Include at least two scholarly sources. The CSU-Global Library is a good place to find these sources.

CAPSTONE PROJECT: RESUME AND CAREER PLAN REMINDER (0 points)
Continue to work on your Resume and Career Plan, due at the end of Week 8. Descriptions and requirements can be found in Module 8 folder.

Module 4

CAPSTONE ASSIGNMENT (100 points)
Choose one of the following two assignments to complete this week. Do not do both assignments. Identify your assignment choice in the title of your submission.

Option #1: Develop Work Breakdown Structure (WBS)
Assume the following major tasks and develop a WBS for a software development project.

Include the following:
- Analyze
- Design
- Develop
- Test
- Deploy
- Maintain

Using the information provided above, respond to the following:
1. Construct a detailed WBS table for the project using any graphical tools. The WBS should demonstrate the organization of the project. Be sure to include at least four levels of tasks (i.e., main task, sub-task). You may want to consider using Microsoft Project, WBS Chart Pro, Microsoft Excel, or any other available programs to assist you in developing your WBS.
2. Identify the key attributes of a work package.
3. Develop a responsibility assignment matrix for the whole project with personnel in the columns and deliverables in the rows.
4. Identify what metrics you would track to measure the effectiveness of your WBS plan.

Your responses should be integrated in a well-written paper that meets the following requirements:
- Be 2-4 pages in length, plus graphical elements placed in an appendix.
- Be formatted according to the *CSU-Global Guide to Writing and APA*.
- Include two scholarly sources. The CSU-Global Library is a good place to find these sources.

Option #2: Review of the Work Breakdown Structure (WBS)
Using past course texts, current suggested readings, and other scholarly resources, write a review of the WBS.

Include the following:
- Define a WBS.
- Define work packages.
- Define metrics used in measuring success and how they are identified in the WBS.
- Define a roles and responsibility matrix.

Lastly, conclude with a summary of the importance of the WBS and project management methodologies, and how they are used in project management.

Your paper should meet the following requirements:
- Be at least 3 pages in length.
- Be formatted according to the *CSU-Global Guide to Writing and APA*.
- Include two scholarly sources. The CSU-Global Library is a good place to find these sources.

Module 5

CAPSTONE ASSIGNMENT (100 points)
Choose one of the following two assignments to complete this week. Do not do both assignments. Identify your assignment choice in the title of your submission.

Option #1: Determination of Critical Path of the Project
Use the following table to calculate duration (round to 0 decimal places):

ID	Task Name	Optimistic	Most Likely	Pessimistic	Precedence	Duration
1	First	1	2	4		
2	Second	3	5	10	1	
3	Third	9	11	13	2	
4	Fourth	3	5	6	3, 8, 9	
5	Fifth	6	7	8	4, 11	
6	Sixth	5	6	8	1	
7	Seventh	3	5	8	6	
8	Eighth	1	2	5	7	
9	Ninth	1	3	5	6	
10	Tenth	4	5	6	9, 8	
11	Eleventh	3	4	5	10	
12	Twelfth	4	5	6	11	
13	Done	0	0	0	5, 12	

Use Activity on Node to construct a network activity diagram with the above table.

ES	Task	LS
EF	Dur	LF

Use the forward and backward pass method to calculate project duration. Include slack on the arrows and identify the critical path(s), and burst and merge activities.

Evaluate the finished project and write a review of your analysis and how you completed each step. Include the completed table and your AON diagram in your paper.

Your response should be integrated in a well-written paper that meets the following requirements:
- Be 2-3 pages in length, plus graphical elements placed in an appendix.
- Be formatted according to the *CSU-Global Guide to Writing and APA*.
- Include two scholarly sources. The CSU-Global Library is a good place to find these sources.

Option #2: Review of PERT and Critical Path Analysis
Using past course texts, current suggested readings, and other scholarly resources, write an overview of a PERT analysis and calculate the critical path based on a recent project you have participated in.

The review of the PERT analysis should include the following:
1. Define PERT and why it is used.
2. Differentiate between Activity on Node and Activity on Arrow.
3. Define the forward and backward pass method for calculating critical path.
4. Define burst, merge, and slack.

The PERT analysis of your project should include:
1. An initial WBS of your project that has no less than 4-5 major tasks.
2. Each major task should have several subtasks.
3. The critical path calculation.
4. The identification of any tasks that have slack.

Lastly, conclude with a summary of importance of a PERT and a critical path analysis in project management.

Your paper should meet the following requirements:
- Be at least 3 pages in length.
- Be formatted according to the *CSU-Global Guide to Writing and APA*.
- Include two scholarly sources. The CSU-Global Library is a good place to find these sources.

Module 6

CAPSTONE ASSIGNMENT (100 points)
Choose one of the following two assignments to complete this week. Do not do both assignments. Identify your assignment choice in the title of your submission.

Option #1: Project Risk Factor
Project risk can be simply defined as any possible event that can negatively affect the viability of a project and can be computed using the simple relation:

Project Risk = Probability of event * Consequences of event

Let us investigate the quantitative risk identified for a company, last year.

Probability of Failure Category	Probability of Failure	Consequences of Failure Category
Process Maturity	30%	Performance = 55%
Technical Complexity	25%	Schedule = 75%
Vendor Dependency	30%	Cost = $55
Workforce Availability	10%	Reliability = 20%

Use the table above to answer the following questions:

1. Calculate the total risk factor for this project. Would you assess this level of risk as low, moderate, or high? Why?
(Hint: Total Risk Factor = (Pf + Cf) - (Pf * Cf) Where P = Average probability of failure and C = Average Consequences of Failure. A common rule of thumb assigns any project with a Risk Factor of below 0.30 as low risk, with a Risk Factor of between 0.30 and 0.70 as medium risk, and Risk Factor over 0.7 as high risk.)
2. Identify all the risk mitigation strategies available to this company (in the example above). What specific mitigation options would you recommend to the corporation?
3. In order to reduce the total risk factor by one level (i.e., High to Medium, or Medium to Low), what would be your focus among the four probabilities of failure and four consequences of failure listed?
4. If you were to prioritize your efforts, which risk factors would you address first? Why?
5. Explain the meaning of the following sentence: Reduction of risk factors is not cheap.

Your responses should be integrated in a well-written paper that meets the following requirements:
- Be 2-3 pages in length, plus graphical elements placed in an appendix.
- Be formatted according to the *CSU-Global Guide to Writing and APA*.
- Include two scholarly sources.

Option #2: Project Risk Management Review
Using past course texts, current suggested readings, and other scholarly resources, write a review of risk management.

Define the risk management process. Be sure to cover each phase, inputs, tools and techniques, and outputs.

Be sure to include:
- Phases
- Types of analysis
- Categorization and prioritizations
- Mitigation strategies

Lastly, conclude with a description of the value of risk management to an organization.

Your paper should meet the following requirements:
- Be at least 3 pages in length.
- Be formatted according to the *CSU-Global Guide to Writing and APA*.
- Include two scholarly sources. The CSU-Global Library is a good place to find these sources.

CAPSTONE PROJECT: RESUME AND CAREER PLAN REMINDER (0 points)
A reminder: Your Resume and Career Plan are due the end of Week 8. Continue to work on this final assignment. Details and grading rubrics can be found in the Module 8 folder.

Module 7

CAPSTONE ASSIGNMENT (100 points)
Choose one of the following two assignments to complete this week. Do not do both assignments. Identify your assignment choice in the title of your submission.

Option #1: Earned Value Management and Project Performance
Determine which projects excelled in the previous year scenario below. Here are the metrics:

	Project A	Project B	Project C	Project D	Project E
Planned Value (PV)	$10,987,765	$16,476,998	$14,376,998	$25,447,553	$20,776,345
Earned Value (EV)	$11,338,332	$14,778,994	$16,773,888	$21,550,330	$18,998,337
Actual Cost (AC)	$9,845,000	$20,887,666	$16,887,998	$22,550,330	$18,887,776

Compute the following earned value metrics for the five projects named above:
- Schedule variance (SV)
- Cost variance (CV)
- Schedule performance index (SPI)
- Cost performance index (CPI)

Display the four earned value metrics computed above in a table and rank the five projects in the order of performance from top to bottom. Based on the computation, answer the following questions. Your responses should be integrated in a well-written paper.
- What do SPI and CPI demonstrate? How do you plan to use this information in your recommendation to the CIO?
- How are SV and CV related to one another? Why are these terms important?
- What are the major advantages of using earned value metrics to understand the effectiveness of project performance? What do you perceive are its disadvantages?
- What are the challenges associated with obtaining earned value metrics? What can you do as a project manager to minimize the challenges?
- What are your recommendations, given the information above?

Your paper should meet the following requirements:
- Be 2-3 pages in length, plus graphical elements placed in an appendix.
- Be formatted according to the *CSU-Global Guide to Writing and APA*.
- Include two scholarly sources. The CSU-Global Library is a good place to find these sources.

Option #2: Earned Value Management Review
Using past course texts, current suggested readings, and other scholarly resources, write a review of earned value management.

Define the following:
- Schedule variance (SV)
- Cost variance (CV)
- Schedule performance index (SPI)
- Cost performance index (CPI)

Be sure to address these questions:
- What do SPI and CPI demonstrate? How do you plan to use this information in your recommendation to the CIO?
- How are SV and CV related to one another? Why are these terms important?
- What are the major advantages of using earned value metrics to understand the effectiveness of project performance? What do you perceive are its disadvantages?
- What are the challenges associated with obtaining earned value metrics? What can you do as a project manager to minimize the challenges?
- What are your recommendations given the information above?

Lastly, conclude with a description of the value of earned value management to an organization.

Your paper should meet the following requirements:
- Be at least 3 pages in length.
- Be formatted according to the *CSU-Global Guide to Writing and APA*.
- Include two scholarly sources. The CSU-Global Library is a good place to find these sources.

PROGRAM COMPLETER SURVEY (25 points)
Be sure to complete this survey before the end of Week 7. The link to the survey can be found in Module 7 folder.

ETS PROFICIENCY PROFILE ASSESSMENT (50 points)

Be sure to complete the assessment before the end of Week 7. The link to the Proficiency Profile Assessment can be found in Module 7 folder.

CAPSTONE PROJECT: RESUME AND CAREER PLAN REMINDER (0 points)
A reminder: Your Resume and Career Plan are due the end of Week 8. Details can be found in the Module 8 folder.

Module 8

RESUME AND CAREER PLAN (150 Points)
For this assignment, you will be submitting two separate documents — a resume and a career plan — each worth 75 points. You may base these documents on your own personal information or on fictional information, thereby keeping your personal information private. Either is an acceptable choice and you will not be graded based on whether you choose to submit actual or fictional information. The purpose of this assignment is to give you experience developing both a resume and a career plan. If you choose to use fictional information, you can then use what you've learned in this assignment to help you develop your own personal resume and career plan. If time permits, you can even develop your real resume and career plan and the fictional ones for the assignment simultaneously. If you have any questions or concerns about this assignment, please contact your instructor as early in the course as possible so they can be addressed.

Following are the specific requirements for each component of this assignment:

Resume
Find a posting for a job that currently interests you and for which you are qualified. Using either your own information or fictional information, create a resume tailored to this job description. If you are creating this resume for a fictional person, you can feel free to add skills, experiences, or qualifications that you do not possess, in addition to creating fictional contact information, a fictional educational background, etc.

You may choose whatever type of resume seems most appropriate. Your resume should include the following elements:
- Contact information
- Qualifications
- Education
- Experience/History

You may also choose to include additional elements as appropriate and needed. Before submitting your resume, use the **Capstone Resume Checklist** and have at least one person read through it and check for errors in spelling, grammar and formatting. When you have the final version of your resume, convert it to a PDF format to submit for grading.

Career Plan
Using the **Career Plan Template**, develop a career plan either for yourself or for a fictional person. The information in the career plan should be as specific as possible, even if you are developing it for a fictional person. You should fill out every section of the Career Plan Template. Your final career plan submission should be well written and free of errors.

Course Policies

Course Grading

Grading Scale and Policies

A	95.0 – 100

Discussions	20%	200 Points		A-	90.0 – 94.9
Capstone Assignments	57.5%	575 Points		B+	86.7 – 89.9
Resume	7.5%	75 Points		B	83.3 – 86.6
Career Plan	7.5%	75 Points		B-	80.0 – 83.2
Program Survey	2.5%	25 Points		C+	75.0 – 79.9
Proficiency Profile	5%	50 Points		C	70.0 – 74.9
				D	60.0 – 69.9
				F	59.9 or below

In-Classroom Policies
For information on late work and incomplete grade policies, please refer to our **In-Classroom Student Policies and Guidelines** or the Academic Catalog for comprehensive documentation of CSU-Global institutional policies.

Academic Integrity
Students must assume responsibility for maintaining honesty in all work submitted for credit and in any other work designated by the instructor of the course. Academic dishonesty includes cheating, fabrication, facilitating academic dishonesty, plagiarism, reusing /re-purposing your own work (see *CSU-Global Guide to Writing and APA* for percentage of repurposed work that can be used in an assignment), unauthorized possession of academic materials, and unauthorized collaboration. The CSU-Global Library provides information on how students can avoid plagiarism by understanding what it is and how to use the Library and Internet resources.

Citing Sources with APA Style
All students are expected to follow the *CSU-Global Guide to Writing and APA* when citing in APA (based on the APA Style Manual, 6th edition) for all assignments. For details on CSU-Global APA style, please review the APA resources within the CSU-Global Library under the "APA Guide & Resources" link. A link to this document should also be provided within most assignment descriptions in your course.

Disability Services Statement
CSU–Global is committed to providing reasonable accommodations for all persons with disabilities. Any student with a documented disability requesting academic accommodations should contact the Disability Resource Coordinator at 720-279-0650 and/or email ada@CSUGlobal.edu for additional information to coordinate reasonable accommodations for students with documented disabilities.

Netiquette
Respect the diversity of opinions among the instructor and classmates and engage with them in a courteous, respectful, and professional manner. All posts and classroom communication must be conducted in accordance with the student code of conduct. Think before you push the Send button. Did you say just what you meant? How will the person on the other end read the words?

Maintain an environment free of harassment, stalking, threats, abuse, insults or humiliation toward the instructor and classmates. This includes, but is not limited to, demeaning written or oral comments of an ethnic, religious, age, disability, sexist (or sexual orientation), or racist nature; and the unwanted sexual advances or intimidations by email, or on discussion boards and other postings within or connected to the online classroom.

If you have concerns about something that has been said, please let your instructor know.