INNOVATION FOR CHEMISTRY ONLINE PROJECT MANAGEMENT PLAN (PMP)

761: Strategies in Educational Project Management

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Executive Summary:

This report contains the project management plan the team has created for your organization's goal to convert your existing curriculum and convert the three Chemistry course series into an online course. The three online courses will be broken up into three different packages. One will be semi-online with some face-to-face, hybrid, and compete for the online course. This plan will allow for a smooth transition to online learning with the added benefit of allowing additional time within the curriculum to train in the laboratory.

This project management plan can help facilitate the chemistry departments' need to improve students' improvement with the laboratory area. The need to have more hands-on training can be accomplished by providing the learners the ability to navigate the course material via a digital platform and have more time to participate in laboratory practice.

March 08, 2021, begins the project with the acceptance and signing of the proposal. They will be a structured cross-functional team that will work the visual design and an expert instructional design team that will take the existing material and covers it seamlessly into the three desired courses. This will be done by putting the highest priority on the key elements of communication throughout this project to ensure all objectives are met to the highest, with the final project complete by May 15, 2021.

The below sections will provide a more detailed outline of how the project will be executed. The Define section will provide a uniform understanding of the chemistry online education project. In the Plan section, a list of necessary project tasks, work breakdown structures (WBS) used to organize the tasks, a critical path diagram that demonstrates the expected milestones, and a synopsis of the project proposal. The Organize section will detail the responsibilities assigned to each team using work packages. A chart will demonstrate the recruitment criteria to ensure we select the best individuals for the tasks. The control section ensures that we have the management tools to stay within time and cost. The project close will provide a structured process for project acceptance and closure.

The managers request to deliver this project ahead of the forecasted schedule. We have assessed our critical path and other areas that we can find efficiencies in to meet the request. We were able to leverage the tasks within the educational technology/programmers' jobs. For the functions, the videographers have editing of existing material within task 1.4 and some of the time allocated for 2.1 & 2.2. We can begin loading the material into the existing LMS upon completion and merging updated products within tasks 2.4 & 2.5, which would create a 20% saving in time. For the project to be completed ahead of the previously forecasted schedule we will have to affect the critical path tasks to find savings without creating an increase of funding or additional personnel. Instructional Job Aids that will help reduce the time of train the trainer sessions and create savings to the overall time of the project. We would have to advise that we will have limited availability for any unforeseen challenges especially having to do with compatibility. We will conduct an additional risk mitigation strategy to consider the tighter timeline to reduce or eliminate potential concerns and provide you with the highest quality product.

DEFINE PHASE

Project Overview/Charter

The define phase provides an overview of why this project is needed. Milestones, success criteria, objectives, and solutions are among other topics addressed in this portion of the project management plan.

Problem/Opportunity

Students in the chemistry department are not performing well in learning instructional content. The students claim that they do not have enough laboratory time to practice the application of chemistry concepts. Some of the students also regularly miss lecture sessions and perform poorly on written examinations. Interviews with the faculty and additional analysis show that the student's poor performance is impacted by a lack of skills and knowledge, and attitudes concerning the current curriculum.

There is an opportunity to address faculty and students' concerns with three foundational courses that will be delivered in an online flipped model format. The first course will be instructor-led. The second course will be a hybrid of instructor and self-led. The third course will be student independent with an introductory and closing lesson given by the instructor. The online courses will allow students more time with the course material and will free up their schedule for more laboratory time.

Project Goals

This project's primary goal is to take three foundational chemistry courses and have them entirely online in 16 weeks. The 16 weeks include three training sessions for the faculty to ensure they will be ready for implementation. Everything must be completed and prepared for execution by the start of the next semester.

Project Objectives

1. Conduct Initial Meeting with the Stakeholders to discuss scope, objectives and goals, plan of action concerns - March 08, 2021
    a. Project Plan Finalization Complete - March 09, 2021
2. Deconflict copyright issues/ Prepare and Develop 15 Live Videos on chemical reactions. *(Video, Audio, graphics/* Make enhanced digital improvements to course of instructions material as necessary after initial development. - March 10, 2021
    a. Transition of all digital course instructional material from analog format. – March. 30, 2021
    b. Make enhanced digital improvements to course of instructions material as necessary after initial development. – March 27, 2021
    c. Prepare and Develop 15 Live Videos on chemical reactions. – April. 2, 2021
    d. Sort digital course of instruction materials into designated three established modules. – April 08, 2021
3. Organize and Structure LMS to house three modules for course content. – April 08, 2021

    a. Complete the human user interface navigation for digital transition of all course instructional materials and resources. – April 21, 2021
4. Deliver three separate training sessions on newly designed digital course modules "Train the Trainer." – April 17, 2021
5. Final verification of all course content structure, deliverables, and navigation. – April 28, 2021
6. Complete module verifications on both student and instructor platforms as designed, developed, and implemented. – May 03, 2021
7. Review and execute termination checklist and termination reports with termination manager. - May 13, 2021
8. Complete closing briefing and issue final reports. – May 15, 2021

Success Criteria

Success will be determined in several ways.

1. When the online courseware is put into place, the entire faculty (excluding Dean & Department Chair) will be trained and certified on how to use the courseware for implementation into the next semester.
2. The chemistry department faculty (excluding Dean & Department Chair) will know how to change all information within the online courses so that they can make future adjustments, as necessary.
3. Meeting all milestones on time.
4. Staying within the allotted budget.
5. Maintaining project quality and integrity without changes to the scope.

Assumptions and Risks

This project is dependent on many moving pieces, and there are assumptions and risks listed below.

1. Resource or time constraints.
2. The faculty are our subject matter experts. They may/will have scheduling conflicts and varying amounts of knowledge and expertise with technology.
3. To assist in scheduling conflicts, other methods of gathering information may be implemented, such as the meetings and/or conference calls when possible.
4. The courses must be ready at the start of the next semester.
5. Due to the winter timeframe, there may be issues that impact progress, such as power outages and transportation issues due to heavy snow accumulation.
6. The faculty will be certified to use the new courseware and fully trained so that they can make future alterations to the course content.
7. Some faculty may be resistant to the changes that are outlined in this document.
8. With a properly managed project management plan, we will be successful.

PLAN PHASE

Purpose

The planning phase is not always the most enjoyable phase within the project. After all, proper planning is meticulous and requires a great deal of critical and creative thinking. However, the planning phase is one of the most vital components of the entire project. The ability to carefully plan will help guide the stakeholders of this project, *"Innovation of Chemistry Online*." In addition to guiding stakeholders, this phase will help identify the project goals, project activities (by task) and help the client estimate the proper time and cost associated with the project. The ability to estimate both time and cost will be accomplished by determining the critical tasks within the project and the best method to sequence the tasks effectively and in a timely manner. The following section within the project report will aim to depict the planning phase by means of a detailed work breakdown structure, estimated activities and time sequencing chart, and a critical path diagram.

Work Breakdown Structure

The work breakdown structure can be confusing for many people within the organization. The work breakdown structure is a method used to establish a common language for understanding this project scope for *"Innovation of Chemistry Online."* Each task within the work breakdown structure will depict a hierarchical description of the individual tasks (work) that will be accomplished to produce the necessary deliverables of this project. These tasks are broken down to provide a detailed chart of the task number, task description, key players for each task, and the characteristics associated with each task. The following Table 1.1 is a snapshot example of some tasks that will have been identified for this project, and the entire work breakdown structure for "Innovation of Chemistry Online" can be found in Appendix B of this report.

2.1	Prepare a total of 15 live video presentations for courses of instruction that illustrate and showcase chemical reactions. The 15 videos will be broken down into 3 separate training sessions. *(Instructional Designers, Chemistry Department Curriculum Committee, Technology Support, Chemistry Faculty, Videographers).*	Y	Y	Y	Y
2.2	Make improvements to enhance any video presentations, visual aids, graphic materials assigned to courses of instruction. *(Instructional Designers, Educational technology programmers, Educational Project Managers, Chemistry Department Curriculum Committee, Technology support Videographers).*	Y	Y	Y	Y
2.3	Sort instructional material into 3 groups for the 1st (Teacher/online), 2nd (Hybrid Teacher/Student/Online), and 3rd (Student/Online) courses within the established Learning Management System (LMS) that provides effective and efficient user human interface. *(Videographers, Graphic artists, Instructional Designers, Educational Programmers, Technology Support).*	Y	Y	Y	Y

Table 1.1. Innovation of Chemistry Online WBS Snapshot

As you can see from the above table, the task numbers, task description, and characteristics within the work breakdown structure all support the deliverables for this project. The assumption is that certain tasks within the work breakdown structure will have sub-tasks that need to be further broken down. We will use task 2.1 as an example. For task 2.1, the team will need to prepare a total of 15 live video presentations that illustrate and showcase chemical reactions. This task, according to the activity time sequencing, will require a total of 10 days, taking 18 hours to produce each video. The creation of this video will require a detailed sub-task structure to meet the overall deliverables of the live video presentations. The following table 1.2 is a breakdown of how each sub-tasks will be required to produce the right live video deliverables for task 2.1:

Task 2.1 Live Video Presentations Sub Tasks		
Sub Task	**Task Description**	**Time Est.**
Storyboards	The creation of 15 separate video storyboards on chemical reactions.	3 Hours/per
Scripts	Creation of scripts that fit the live videos and audio recordings of each script to the 15 live videos for chemical reactions.	5 Hour/per
Production/Filming	Complete video production for all 15 live videos for chemical reaction.	5 Hours/per
Editing	Edit and finalize video, script/audio merging for all 15 live videos for chemical reaction.	3 Hour/per
Review	Complete final review of 15 live videos on chemical reaction.	2 Hour/per
	Each Video Total Time Cost	**18 Hours/per**

Table 1.2. Task 2.1 Live Videos of Chemical Reactions Sub Tasks Example

Estimated Time Activity and Sequencing

The ability to sequence tasks correctly within the project is critical to ensuring smooth workflow and transition of tasks. According to Project Management Knowledge (2021), Activity sequencing helps identify the dependencies among all the tasks for this project. It is important to ensure that the activity sequencing is documented within a chart to easily identify and understand the chronicling of the task dependencies and placing them in a logical order. The ability to examine the relationships between the scheduled activities and their precedence will greatly enhance the ability to develop a realistic and accurate schedule. The estimated time activity and sequencing chart include task number, task description, the sequence of relationships (before and after) and estimated hours and days for each task. The following table 1.3 will provide a snapshot of an example of the estimated time and activity sequencing for "Innovation of Chemistry Online." The detailed estimated time and activity sequencing for this project can be found in Appendix C of this report.

2.2	Make enhanced digital improvements to the course of instructions material as necessary after initial development. *(Video, Audio, graphics).*	1.4	1.2	12	32 Hours/per module x3
2.3	***Sort*** digital course of instruction materials into designated three established modules. *(Video, Audio, Graphics, Instruction, Technology).*	3.1 3.2 2.5	1.4	6	16 Hours/per module x3
2.4	***Organize*** and ***Structure*** LMS to house three modules for course content. *(Video, Audio, Graphics, Technology).*	1.4	2.5	6	16 Hours/per module x3

Table 1.3. Innovation of Chemistry Online Est. Activity Time and Activity Sequencing Snapshot

Critical Path

The critical path section of this project serves as a visual representation of ensuring that this project, *"Innovations of Chemistry Online,"* will be completed on time. The purpose of the critical path is to focus on those key tasks that will produce a path that will lead to the fastest road to complete this project. The ability to focus and isolate key tasks that make up the critical path will ensure the timely completion of this project. The following visual diagram in figure 1 below will outline the critical path for this project.

Critical Path Diagram

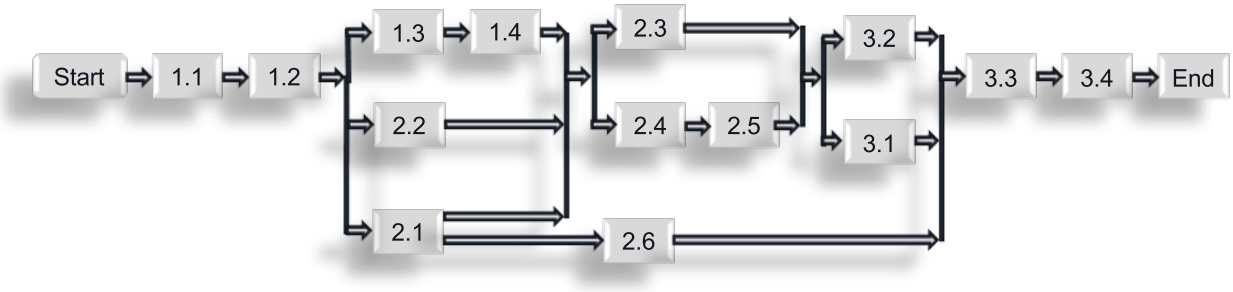


Figure 1. This shows the Online Chemistry Project Critical Path

Project Proposal Statement

The above proposal sections define the project charter, goals, objectives, success criteria, assumptions, and risks. The project plan contains a listing of deliverables depicted in the Work Breakdown Structure (WBS). The estimated time sequence for those items is demonstrated in the Critical Path and the Gantt Chart. We would like you to sign-off on the project if it meets all your requirements as agreed upon.

Proposal Agreement

Singing below, the (Client) agrees to accept this proposal and enter into a contractual agreement with our company beginning on the date of signing.

Project Manager: ✕ _____ Date: _____

Client: ✕ _____ Date: _____

ORGANIZE PHASE

The organization phase will identify the personnel and their duties according to the project task requirements. The team structure is a required and critical area to complete the requirements. This phase will also cover the personnel's Recruiting criteria to ensure that the correct individual meets the project tasks. This includes a work package breakdown to assign each individual assigned a job.

Work Packages Descriptions / Assignments:

The work packages below will create an agreement between the individuals and their tasks. They assign responsibility to tasks and provide the completion time. The work package manager will monitor the work being done and ensure that timelines are being met. A scheduling chart will also allow the PM to manage the work packages with the work package manager.

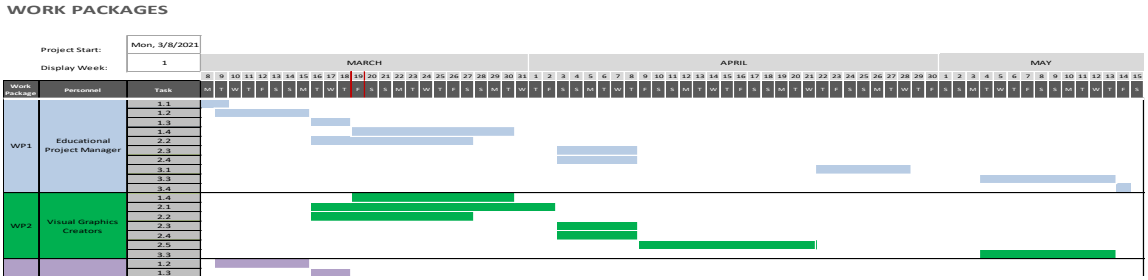


Figure 2. This shows the Online Chemistry Project Work Package breakdown

Team Organizational Structure

Teams are an essential factor for the performance of all organizations. Using the team organization structure, we will be better postured to provide a higher degree of specialized service and help eliminate layers of management. This will allow the teams to work towards a common purpose within their tasks and skillsets.

Team Organization Structure:

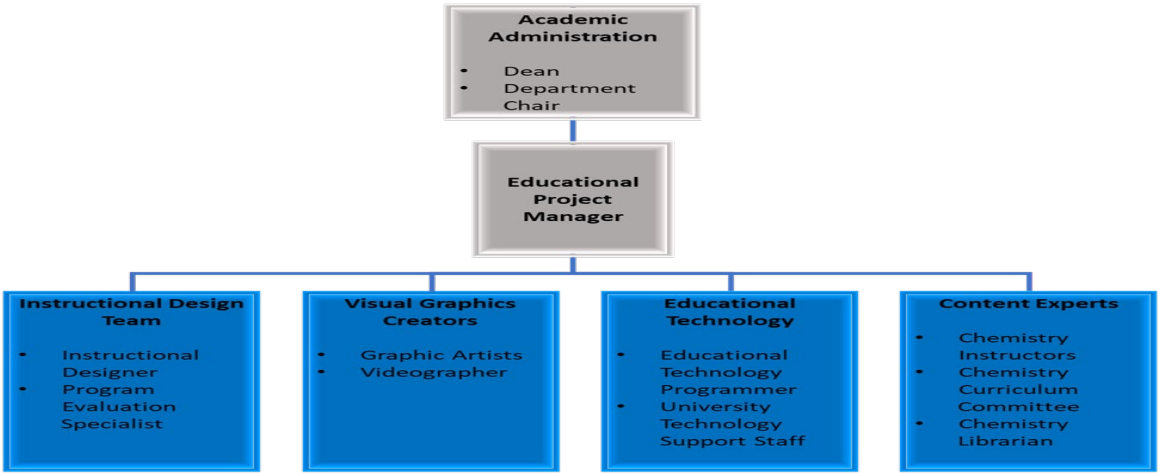


Figure3. This shows the Online Chemistry Project Team Structure

Personnel and Recruiting Criteria

The human resource management of a job or project is a crucial element to its success. Building a team with the required knowledge and skills will ensure that timelines are made because establishing the experience upfront will mitigate the learning during the project approach. Due to the restrictive timeline for this project, it is challenging to have inexperienced individuals in critical positions. For this reason, we have established this table of skills and experience required to conduct this project.

Recruiting Criteria for each position:

Job Title	Recruitment Criteria
Educational Project Manager	• B.S. or B.A. in business administration, education, educational technology, or related field and at least four related experience required. M.S. or M.A. with two years of experiences accepted • Demonstrated experience in design, development, organization, and delivery of change management strategy • Project management certification preferred • Extraordinary leadership, management, and communication skills • Brilliant organizational skills and attention to detail • Experience working with multimedia on online projects

Table 1.4. Innovation of Chemistry Online Recruiting Criteria Snapshot

Control Phase

Purpose

Within the control phase purpose of this project titled *"Innovation of Chemistry Online,"* the project team will look to focus on defining the style of management applied to the project. In the control phase, the team will utilize and establish control tools that we will use to ensure the project is staying within time and cost. During this phase, the team will use visual representations such as Gantt Charts and Status Reports to provide an effective and efficient foundation of the operational environment for all parties involved. This common language will allow all parties involved with the project to communicate and understand the current and future progress of the project. Lastly, within the control phase, any change orders needed will be provided to the project. The change will enable progress to continue within the established timelines and cost associated with the project approval.

Project Management Style

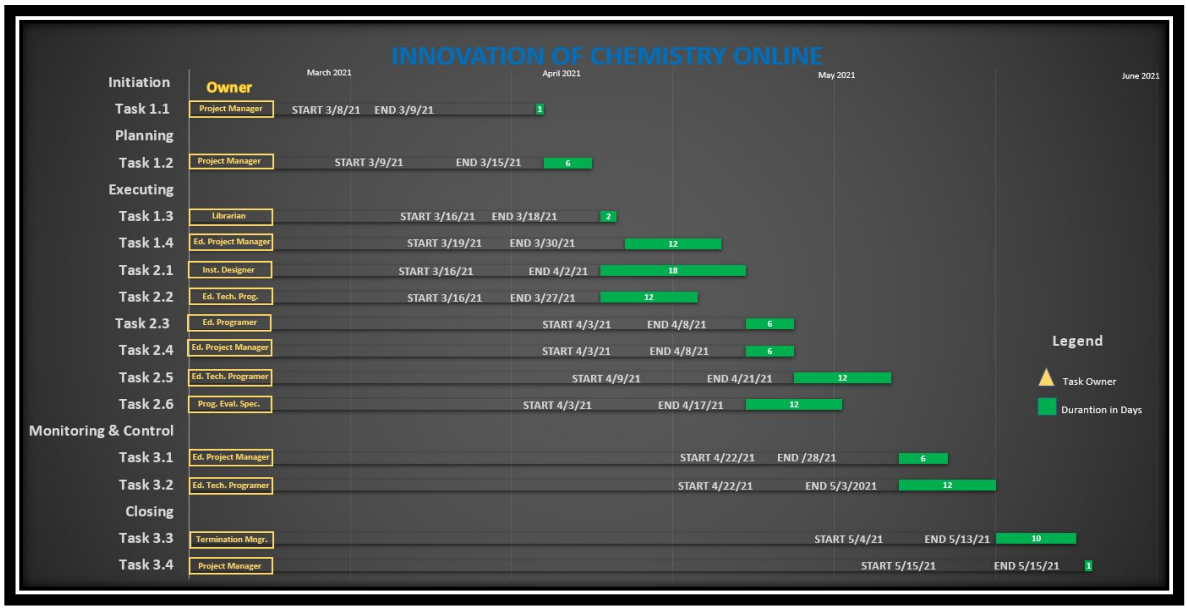
During this project, the team will inevitably go through the five stages of team development. As we evolve as a cohesive team, we will look to use effective communication, management of relationships and cohesiveness, and effective conflict management. To manage this project effectively with all these variables, we will use an agile project management style. This style of management helps provide an interactive, collaborative approach to software management. Samuels (2021) describes agile software development where "teams continually revisit, inspect, and adapt their development techniques to deliver applications." This type of management style applies to this project as we are going to leverage the team to provide valuable feedback about the development of the Learning Management System

(LMS), content, tools, and resources for all the created modules. The flexibility incorporated within this management style will establish a workflow that enables the team able to meet the goals and objectives of the project faster. In addition, agile project management will exemplify our team culture and provide timely evaluation and feedback to improve the deliverables in the project as it progresses. Lastly, using agile project management will enable simplicity in the workflow of the project by assigning task owners that will see each task through with integrity and continuity.

Management Tools

During the execution of this project, *"Innovation of Chemistry Online,"* the team will use a variety of tools during its implementation. The tools used within the project can enhance the team's ability to track the current progress and future checkpoints, provide status reports, and visualize any variance from the established tasks, timelines, and critical path. Within this project, we will use Gantt Charts to communicate with the team and client the projected plan and expected outcomes. Overall, the Gantt chart will visually breakdown the individual tasks by duration and sequence. The Gantt chart will display for the team and clients an up-to-date overall project schedule and assign an owner for each specific task. In addition to Gantt charts, the team will leverage status reports to ensure tasks are clearly articulated on their status. The regular updates within these status reports will enable the team and client with the project transparency needed to efficiently operate as a cohesive team.

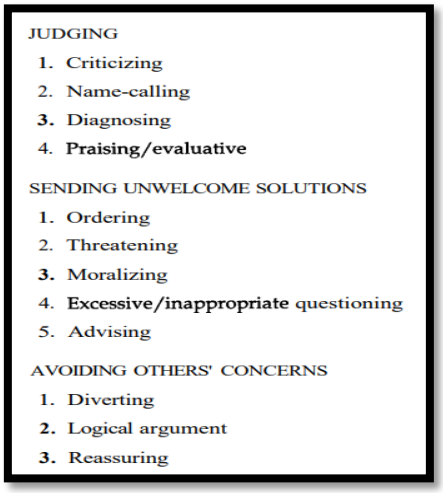
Current Approved Project Gannt Chart as of March 10, 2021



Example of Status/Variance Report During Project Scope

	PM Phase: Executing															Date: 10 March 2021	
Task Status/Variance Report				Task Description	Periods											Schedule/Variance	Task Owner:
	Task #	Start	Stop		1	2	3	4	5	6	7	8	9	11	12	13	14	15		
	1.3	1	1	*Deconflict Copyright Issues©*															*on schedule*	Librarian
	2.2	2	3	*Enhance Digital Products*															*on schedule*	Educational Technology Programmer
	2.1	2	4	*Prepare Dev. 15 Live Video Sessions*															*Late/videographer contract issues*	Instructional Designer
	2.6	6	9	*Deliver training sessions*															*Late/task 2.1/can move to on time*	Program Evaluation Specialist
	1.4	3	5	*Transition Digital Materials*															*on schedule*	Educational Project Manger

Project Communication



Robert Bolton's 12 Barriers (1979)

All project teams communicate within a project, but the key to success in communication within those teams is communicating effectively. Effective communication is difficult with teams because team members come from all different cultures. Communication within this project and its success will be critical to the foundation of the project. There are many barriers to communication that need to be observed by all members during the project. The team must focus on understanding, observing, and remembering Robert Bolton's (1979) 12 barriers to communication. As Bolton Weiss & Wysocki explain (1992), "if observed and remembered, the barriers can be prevented. The table on the left depicts the 12 barriers we will use for this project.

Conflict Resolution

During the scope of this project, there will be conflict. There will be various sources that cause this conflict with as ill-structured as this project scope is. The ability to manage this conflict effectively and efficiently will depend on the ability of the team and project manager to create a healthy culture, help identify the conflict early, have well-established rules for conflict, and the project manager must remain neutral in the conflict. The foundation for conflict resolution will reside in a unique management technique that can be found in Appendix A of this report. Kenneth Thomas (1977) provides an excellent tool for approaching conflict. These approaches and methods will help to enable successful conflict management during the scope of this project for *"Innovation of Chemistry Online."*

Getting the Project Back on Track

1. Access the Situation
2. Talk to the Project Stakeholders
3. Prepare Your Team for Recovery
4. Identify Subject Matter Experts
5. Develop a new Project Plan
6. Obtain Stakeholder Validation and Support for the New Project Plan
7. Execute the New Project Plan
8. Closely Monitor & Control Performance for the Remainder of the Project
9. Collect Lessons Learned and Adjust your Progress

Engineer Management Institute (2015) 9-Line Project Rescue Method

The planning for a project requires critical thinking and attention to detail to be successful. As many will agree, a plan is never perfect and will hit bumps along the way. The ability to have methods for getting the project back on track will be critical. The method used for this project to get back on track will involve a 9-line project rescue method. The Engineering Management Institute (EMI) (2016) recommends the following 9-line project rescue method to getting a project on track and will be used as a foundation for this project "Innovation of Chemistry Online."

CLOSE

The close phase documents the summary of the project performance. Scope, goals, risk management, and criteria that have been used to validate the training products are included. During this phase, the client signs off on and accepts the project.

This document, in its entirety, was emailed out to all stakeholders on May 10, 2021. The project's primary goal was to take three foundational chemistry courses and have them entirely online in 16 weeks. Several other objectives support the plan, and they are listed in the final deliverable checklist. The initial meeting was conducted on March 08. All agreed that proper documentation would occur after every deliverable is delivered. The project manager will ensure that all stakeholders are informed weekly regarding the budget and any time or scheduling constraints that impede the project progress. During that meeting, we also discussed;

1. Scope of work
2. Project goals
3. Project objectives
4. Success criteria
5. Plan for the work breakdown structure

We had an additional request to integrate a new multimedia deliverable that can serve as a virtual laboratory. The requested multimedia integration is already built, so we worked with several professors from the department to insert the multimedia into the courseware where they would be beneficial. This request was the only deviation from the original plan. Throughout the project, we used the 9-line project rescue method in the unlikely event that an aspect of the project was somehow off track.

The project did not exceed the budget. We attribute the cost savings to the additional request we initially received. The multimedia integrated labs saved us money because they were already made and relevant to the existing instruction. The Quality Assurance Manager has evaluated the courses, and all three are currently in the pilot phase of implementation.

Our team has prepared a deliverable checklist. The checklist needs to be accepted no later than May 13, 2021. (the list is below)

Final Deliverable Checklist

1. Develop and integrate 15 Live videos on chemical reactions into instruction
2. Incorporate new multimedia deliverable as requested by the client
3. Transition all written documents/ curriculum/ textbook to an online format
4. Organize and Structure the Learning Management System to house three separate courses
5. Deliver three separate training sessions on newly designed digital course modules
6. Complete module verifications on both student and instructor platforms
7. Conduct a final verification of all course content structure, deliverables, and navigation

All termination reports and checklists need to be signed during this closing meeting, including the deliverable list included in this document. The termination manager is the point of contact for the termination process. The termination process will consist of;

1. Logistics termination
2. Project documentation
3. Post-implementation audit
4. Obtain client approval
5. Close operations

A final audit will occur after the termination meeting. Before the meeting, all managers will meet with their respective teams. During the audit meeting, the team managers will address the success and challenges encountered during the project. Team members will have the opportunity to complete feedback questionnaires if they do not wish to speak their minds at the respective meetings.

Determining what went right and what could be improved is imperative to bring those lessons learned to other projects. The project manager will retain all questionnaires and audit checklists.
The project manager will give closing statements and have audit checklists to keep as records. Those lists have been sent by email to team managers on May 10, 2021. At that time, evaluations of performance need to be complete.

The final project report will include;

1. Techniques used to accomplish project deliverables
2. Overall performance of the project
3. Strengths and weaknesses
4. Organization of the project
5. Administration of the project
6. Closing remarks/ recommendations from the Project Manager/ team

At this time, we would like to solicit your approval and acceptance of the project. If you have no further concerns, please sign below. When the final project report is complete, we will ensure you receive that as well.

I acknowledge that I have delivered all the stated deliverables at the agreed quality levels by signing this document.

Project Manager: ✕ _____ Date: _____

I acknowledge that I have received all the stated deliverables at the agreed quality levels by signing this document.

Client: ✕ _____ Date: _____

Appendix A
Conflict Management Techniques

COMPETING APPROACHES

1. When quick, decisive action is vital.
2. On important issues where unpopular actions need implementing.
3. On issues vital to the organization's welfare, and when you know you are right.
4. Against people who take advantage of noncompetitive behavior.

COLLABORATING APPROACHES

1. To find an integrative solution when both sets of concerns are too important to be compromised.
2. When your objective is to learn.
3. To merge insights from people with different perspectives.
4. To gain commitment by incorporating concerns into a consensus.
5. To work through feelings which have interfered with a relationship.

COMPROMISING APPROACHES

1. When goals are important, but not worth the effort or potential disruption of more assertive modes.
2. When opponents with equal power are committed to mutually exclusive goals.
3. To achieve temporary settlements to complex issues.
4. To arrive at expedient solutions under time pressure.
5. As a backup when collaboration or competition is unsuccessful.

AVOIDING APPROACHES

1. When an issue is trivial or more important issues are pressing.
2. When you perceive no chance of satisfying your concerns.
3. When potential disruption outweighs the benefits of resolution.
4. To let people cool down and regain perspective.
5. When gathering information supersedes immediate decision.
6. When others can resolve the conflict more effectively.
7. When issues seem tangential or symptomatic of other issues.

ACCOMMODATING APPROACHES

1. When you find you are wrong—to allow a better position to be heard, to learn, and to show your reasonableness.
2. When issues are more important to others than to you—to satisfy others and maintain cooperation.
3. To build social credits for later issues.
4. To minimize loss when you are outrnatched and losing.
5. When harmony and stability are especially important.
6. To allow subordinates to develop by learning from mistakes.

Kenneth Thomas Conflict Management Strategies (1977)

Appendix B
Work Breakdown Structure

Activity Characteristics Legend:
1-Status/completion measurable; 2-Clear start/end date event; 3-Time/cost easily estimated; 4-Manageable/measurable/integrable/independent

Activity No.	Activity Description	Characteristics			
		1	2	3	4
1.1	Conduct an ***initial meeting*** and have a project discussion. The discussion should include the scope of the project, goals and objectives for the project, and plan of action for the project, and address any additional concerns within the project.*(Dean, Department Chair, Chemistry Department Curriculum Committee).*	Y	Y	Y	Y
1.2	Project plan finalization complete. Approval of the project plan includes *(Instructional Designers, Program Educational Project Manager, Dean).*	Y	Y	Y	Y
1.3	Establish, verify and deconflict any copyright issues within the courses of instruction. This deconfliction should include *(Chemistry Librarians, ChemistryDepartment of Curriculum, Instructional Designers, Educational Project Manager)*	Y	Y	Y	Y
1.4	Prepare digital course syllabus, textbook, articles, applicable assessments & exams, content presentations, key concept graphics, booklets, journals, instructions prepared and completed. *(Instructional Designers, Program Evaluation Specialists, Videographers, Graphic Artists, Educational technologyprogrammers, Educational Project Manager, Chemistry Department Curriculum Committee, Technology support, Chemistry Faculty).*	Y	Y	Y	Y
2.1	Prepare a total of 15 live video presentations for courses of instruction that illustrate and showcase chemical reactions. The 15 videos will be broken downinto 3 separate training sessions. *(Instructional Designers, Chemistry Department Curriculum Committee, Technology Support, Chemistry Faculty, Videographers).*	Y	Y	Y	Y
2.2	Make improvements to enhance any video presentations, visual aids, graphicmaterials assigned to courses of instruction. *(Instructional Designers, Educational technology programmers, Educational Project Managers, Chemistry Department Curriculum Committee, Technology support Videographers).*	Y	Y	Y	Y
2.3	Sort instructional material into 3 groups for the 1st (Teacher/online), 2nd (HybridTeacher/Student/Online), and 3rd (Student/Online) courses within the established Learning Management System (LMS) that provides effective and efficient user human interface. *(Videographers, Graphic artists, Instructional Designers, Educational Programmers, Technology Support).*	Y	Y	Y	Y
2.4	Organize and structure all instructional materials into three separated 1st (Teacher/online), 2nd (Hybrid Teacher/Student/Online) and 3rd (Student/Online)modules and arrange them to fit the course of instructions goals and objectives. Structure should include easy navigation and an effective user human interface. (*(Instructional Designers, Educational technology programmers, Educational Project Managers, Department Chair, Chemistry Department Curriculum Committee, Technology support Videographers).*	Y	Y	Y	Y
2.5	Complete the human user interface navigation for digital transition of all courseinstructional materials and resources into the established Learning ManagementSystem (LMS) *(Videographers, Graphic artists, Instructional Designers, Educational Programmers, Technology Support).*	Y	Y	Y	Y
2.6	Deliver three separate training sessions on newly designed modules, curriculum,instruction, resources, and any other applicable deliverables. This will serve as the "train the trainer" Chemistry Department Training session. *(Program Evaluation Specialists, Educational technology programmers, Chemistry Faculty).*	Y	Y	Y	Y
3.1	Final verification of newly created course interface and instruction within the Learning Management System (LMS). All three modules 1st (Teacher/online),2nd (Hybrid Teacher/Student/Online), and 3rd (Student/Online) checked and certified. The verification should include accuracy, navigation, and user humaninterface functionality. (*Instructional Designers, Chemistry Department Curriculum Committee, Educational technology programmers, Educational Project Managers, Technology Support, Program Evaluation Specialists).*	Y	Y	Y	Y
3.2	Verify holistic chemistry student user interface and accessibility of course modules on students' platforms within the entire applicable chemistry department. This should include verification of modules as it was intended in itsdesign, development, and implementation. *Chemistry Department Curriculum Committee, Department Chair, Chemistry Faculty, Educational Technology Programmers, Technology Support).*	Y	Y	Y	Y
3.3	Review and execute termination reports (assignment manager), terminate allassignments and resources, work orders, contracts, etc. Close out all assignments. *(Instructional Designers, Program Evaluation Specialists, Videographers, Graphic Artists, Education Technology/Programmers, Educational Project Manager, Technology Support).*	Y	Y	Y	Y
3.4	Conduct a project ***closing brief*** with the project manager. Receive final approval from Superintendent and Dean. Issue final report and post-implementation audit to applicable stakeholders. *(Superintendent, Dean, Department Chair, Chemistry Department Curriculum Committee, ApplicableStakeholders).*	Y	Y	Y	Y

Appendix C
Estimated Activity Times and Sequencing

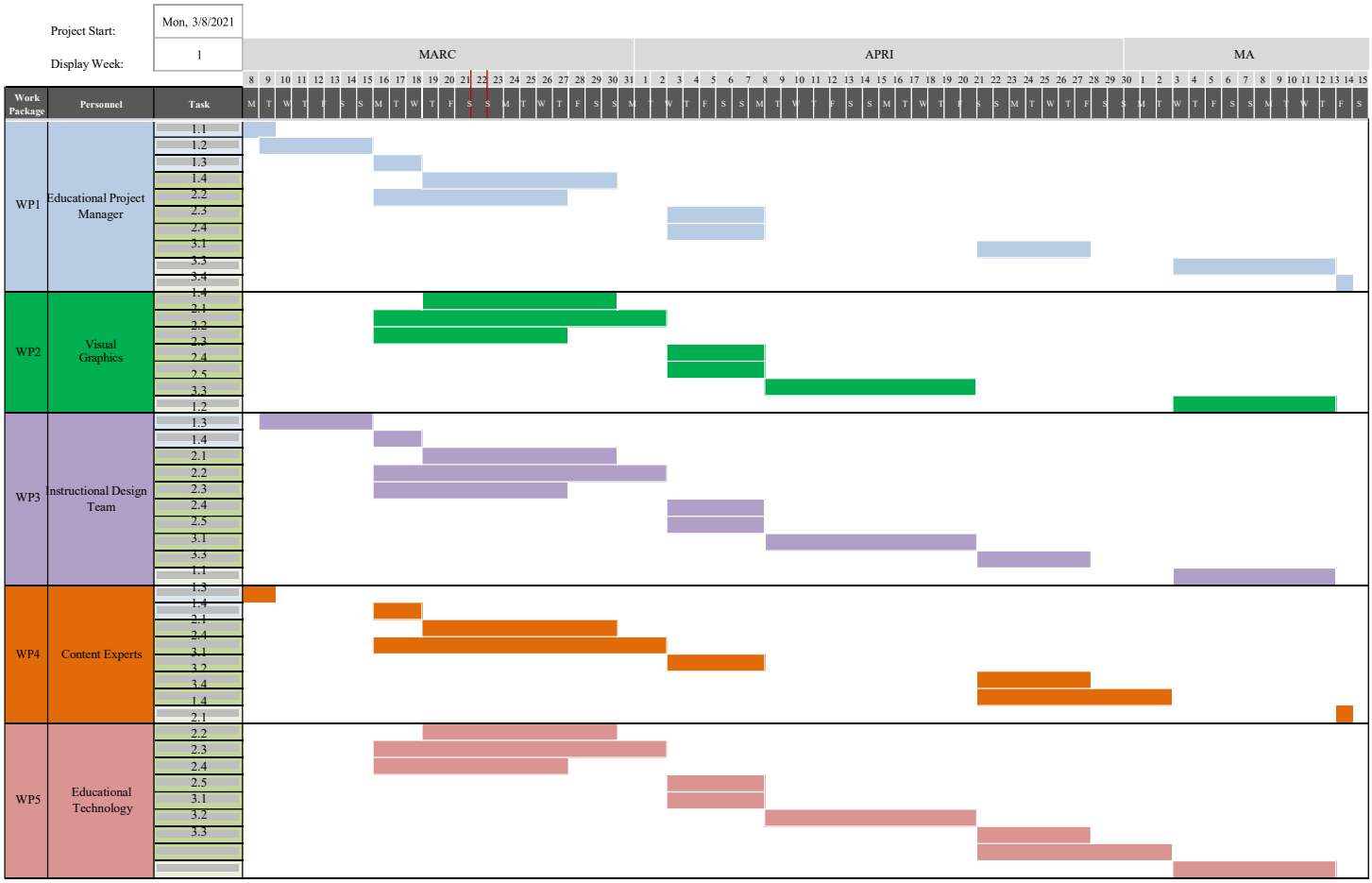
Task Estimates:

Time – **116 Days;** Start schedule – **5 Periods x 23.2 days**

Task No.	Task Description	Sequence relationships		Estimated Time / Start	
		before	after	***days***	***Time***
1.1	Conduct Initial Meeting with the Stakeholders to discuss scope, objectives, and goals, plan of action concerns.	N/A	Start	1	8 Hours
1.2	Project Plan Finalization Complete.	1.3 2.2 2.1	1.1	6	48 Hours
1.3	Deconflict Copyright Issues.	1.4	1.2	2	16 Hours
1.4	Transition of all digital course instructional material from analog format. (Video, Technology, Audio, Graphics).	2.3 2.4	1.3 2.2 2.1	12	32 Hours/per module x3
2.1	Prepare and Develop 15 Live Videos on chemical reactions. *(Video, Audio, graphics).*	2.3 2.4 2.6	1.2	18	10 Hours/per video
2.2	Make enhanced digital improvements to the course of instructions material as necessary after initial development. *(Video, Audio, graphics).*	1.4	1.2	12	32 Hours/per module x3
2.3	***Sort*** digital course of instruction materials into designated three established modules. *(Video, Audio, Graphics, Instruction, Technology).*	3.1 3.2 2.5	1.4	6	16 Hours/per module x3
2.4	***Organize*** and ***Structure*** LMS to house three modules for course content. *(Video, Audio, Graphics, Technology).*	1.4	2.5	6	16 Hours/per module x3
2.5	Complete the human user interface navigation for digital transition of all course instructional materials and resources. *(Video, Audio, Graphics, Technology).*	3.1 3.2	2.4	12	32 Hours/per module x3
2.6	Deliver three separate training sessions on newly designed digital course modules "Train the Trainer" *(Video, Audio, Graphics, Instruction, Technology).*	3.3	2.1	12	32 Hours/per module x3
3.1	Final verification of all course content structure, deliverables, and navigation. *(Video, Audio, Graphics, Instruction, Technology).*	3.3	2.5 2.3	6	15 Hours/per module x3
3.2	Complete module verifications on both student and instructor platforms as designed, developed, and implemented. *(Video, Audio, Graphics, Instruction, Technology).*	3.3	2.3 2.5	12	96 hours
3.3	Review and execute termination checklist and termination reports with termination manager. *(Termination Manager)*	3.4	3.1 3.2	10	80 hours
3.4	Complete closing briefing and issue final reports.	End	3.3	1	8 hours

Appendix D

Work Packages



Appendix E
Personnel and Recruiting Criteria

Job Title	Recruitment Criteria
Educational Project Manager	● B.S. or B.A. in business administration, education, educational technology, or related field and at least 4 related experience required. M.S. or M.A. with two years of experiences accepted ● Demonstrated experience in design, development, organization, and delivery of change management strategy ● Project management certification preferred ● Extraordinary leadership, management, and communication skills ● Brilliant organizational skills and attention to detail ● Experience working with multimedia on online projects
Instructional Designer	● B.S. or B.A. in instructional design or related field required, M.S. or M.A. preferred ● 3-5 years of work experience in instructional design, preferably at a college or university ● 1-2 years of work experience in designing online coursework at a college or university ● Demonstrated ability to implement a training program or curriculum in eLearning and various other instructional techniques ● Knowledge of synchronous/asynchronous learning and best practices in online teaching ● Experience designing interactive multimedia for online platforms required ● Experience using video/audio and content authoring tools (e.g., Adobe Captivate, Articulate Rise/Storyline 360, Camtasia, Audiate)
Program Evaluation Specialist	● B.S. or B.A. in program evaluation or related field required, M.S. or M.A. preferred ● 3-5 years of work experience at a college or university preferred ● 1-2 years of work experience in evaluating programs (online, blended, and onsite, preferred) at a college or university ● Experience evaluating chemistry or related STEM curriculum preferred ● Experience developing interactive multimedia for online platforms required
Graphic Artist	● B.S. or B.A. required in Graphic Design or equivalent experience ● 2-5 years experiences in technology (preferable consumer electronics) ● Thorough knowledge of the Adobe Creative Suite (Photoshop, Illustrator, Indesign) ● Able to export assets in the appropriate format for the intended channel ● Excellent ability to learn and understand the technical aspect of the product ● Strong troubleshooting and diagnosis skills ● Strong technical skills, time management skills, and business skills
Videographer	● Minimum 3 years of experience as a videographer/editor (including demonstrated achievements) ● Working knowledge of technologies used in field and post-production - with particular emphasis on Adobe Premiere and After Effects ● Technical proficiency necessary to address issues when they develop ● Bachelor's Degree preferred, Advanced Degree a plus
Librarian	● American Library Association (ALA) accredited Master's Degree in library and information science ● Knowledgeable in intellectual property laws and policies
Chemistry instructors	● Master's Degree or higher in Chemistry ● Experience in teaching Introductory Chemistry, General Chemistry and labs ● Experience and interest in program and course assessment ● Online instruction experience ● Interest in curriculum development ● Experience in laboratory development ● Curriculum development experience

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