

Converting Face-to-Face Chemistry Classes to Online

Submitted by:

Jiaying Tian
Melissa Flint-Morgan
Mirit Hadar
Yuri Pavlov

IDE 761—Strategies in Educational Project Management

April 05, 2016

Submitted to:

Tiffany A. Koszalka, Ph.D.
Course instructor



Executive Summary

Project Name: Converting Face-to-Face Chemistry Courses to Online

Problem

Students at a large University are not performing well in their Chemistry classes for two reasons:

1. Students are not attending lectures, as they find the content to be straight from the textbook, and are therefore missing out on key concepts of chemistry.
2. Students voice that a lack of time spent in the lab is negatively impacting their experience and that they would rather have more time spent in the lab component of the class.

Solution

The Chemistry Department has decided to revise their sequenced three foundational chemistry classes to include content delivery online (using a flipped model) followed by longer laboratory sessions. This will provide additional opportunities for the students to review the content as well as give them more time in the lab. The goal is to reduce content-based time to two credits, and increased lab time to two credits.

Broad Project Goal

By 01 June 2017, convert the current face-to-face chemistry classes into three different online formats, including (a) an instructor-facilitated online course, (b) a partially instructor-facilitated and partially self-directed online course, (c) a fully self-directed online course that has one introductory online session and one final online session with the professor, and launch the converted online chemistry courses on 01 September 2017.

Major Objectives

- Digitize all materials associated with each course
- Record lectures and demonstrations as necessary
- Provide training opportunities for both students and faculty prior to the start of the academic year
- Launch three different course formats on 01 September 2017

Major Risks and Assumptions

- All invested parties and stakeholders have time constraints which the Project Manager must adhere to
- Student access to technology may be limited to the computers at the school, so the course must be compatible with these OS
- Copyright issues must be addressed prior to uploading materials

Resources

A team of staff has been put together to work on videography, graphics, web design, as well as consulting on content and copyright law. Content materials have been provided by the Chemistry department and some will be created for the online format throughout the project. A pre-determined budget that covers all necessary expenses as well as additional, unforeseen expenses has been provided.

Table of Contents

Executive Summary	2
Table of Contents	3
Define Phase	4
Problem/Opportunity.....	4
Project Goals	4
Project Objectives	4
Success Criteria.....	4
Assumptions and Risks	5
Plan Phase	6
Work Breakdown Structure.....	6
Major milestones description for this project	6
Critical Path.....	6
Gantt Chart	7
Project Proposal (Does not include all activities for implementation).....	8
Organize Phase.....	9
Work Packages Descriptions / Assignments	9
Team Organization Structure	10
Recruiting Criteria for Each Position	10
Control Phase	12
Management Style.....	12
Management Tools	12
Communication	13
Conflict Resolution	13
Contingency Planning Strategies	13
Close Phase	14
Project Closing Plan	14
Format for Final Project Report	14
Present Products to Client / Client Sign-off Procedures	15
Post Project Audit/ Debrief	15
Appendix.....	16
Work Breakdown Structure.....	16
Activity Estimates	17
References.....	18

Define Phase

Problem/Opportunity

Students are not performing well with their face-to-face Chemistry classes at a large university. They have difficulty in understanding the concepts of chemistry, since the lecture sections are taken straightly from text. They are complaining that their lab time is too short to master the concepts being taught in their Chemistry class. The Chemistry Department has chosen to transfer three classes to online so as to provide additional opportunities for the students to engage more interactively with the content and free up scheduling issues associated with implementing longer lab periods.

Project Goals

By 01 June 2017, convert the current face-to-face chemistry classes into three different online formats, including

- a. an instructor-facilitated online course,
- b. a partially instructor-facilitated and partially self-directed online course,
- c. a fully self-directed online course that has one introductory online session and one final online session with the professor

and launch the converted online chemistry courses on 01 September 2017.

Project Objectives

1. Approve the schedule of project meetings with the client and key stakeholders during Weeks 2–4 of January 2017.
2. Digitize all instructional materials that will be put online by 01 April 2017
3. Create the necessary video and graphic instructional materials for the online chemistry courses by 01 June 2017.
4. Organize the instructional materials (textual, graphical, and video) into the three types of online chemistry courses in the learning management system by 01 July 2017.
5. Offer 3 training sessions to chemistry teachers on flipped classroom teaching and learning management system operation in June 2017.
6. Validate the converted online courses by 01 August 2017.

Success Criteria

1. The meetings with the client will be scheduled on a regular basis at least twice a month between January and July as well as meetings with the key stakeholders will be scheduled at least 4 times—once every two months (January, March, May, July).
2. All the necessary learning materials will be digitized and confirmed of not violating copyright issues by 01 June 2017.
3. All the necessary graphic and video materials will be finalized by 01 June 2017.
4. All teaching-related materials will be accessed without a glitch in 100% cases on computers, tablets, and mobile phones with different operating systems such as Windows and Mac OS, Android and iOS.
5. At least 90% of the chemistry department personnel will attend the training sessions scheduled in June.
6. The Dean of the Chemistry Department ratifies the converted courses by 01 August 2017.

Assumptions and Risks

1. Weather related issues can cause power outages and transportation issues between January and March
2. The professors may have time conflicts that can interfere with the course during the academic year, such as travel, service activities, presentations, etc.
3. The Dean, Department Chair, and Chemistry Committee have limited time to meet and sign off on project
4. Everyone working on the project such as professors and University personnel have different levels of knowledge, skills, and experiences with technology, so they may take more time to complete the assigned tasks
5. Copyright issues may ensue following the digitization of printed materials for student use
6. Students have different learning styles and may not be completely comfortable with online learning
7. Assessment concern: It is difficult to verify the validity of online test results. Students may find it easier to cheat/plagiarize on exams within this new format
8. Some students' time online is limited by the amount of internet access they can afford.

Plan Phase

Work Breakdown Structure

In this part of the document, we share the major milestones that define this project. The major milestones also lay the foundations of the critical path of the project. A more detailed example of the work breakdown structure (WBS) and activity estimates can be found in the Appendix.

Major milestones description for this project

A	1.1.1	Meet with the client of the project—a chemistry professor—and discuss the project goal, scope, and plan of action on Week 2 of January 2017
B	1.1.3	Finalize the project plan and have it approved with the chemistry department dean and the client on Week 4 of January 2017
C	1.2.2	Discuss with the chemistry librarian the copyright issues before 01 March 2017
D	1.2.3	Prepare the digitized syllabi, assessments, content presentations, and peer-reviewed articles by 01 April 2017 (tests, quizzes, midterm, and final exam)
E	1.3.1	Prepare 45 short video demonstrations showing chemical reactions (15 for each of the three courses) during March and April 2017
F	1.3.2	Enhance the already existing graphic materials by 01 June 2017
G	1.4.1	Sort the instructional materials into the categories on Week 1 of June 2017
H	1.4.2	Create three separate spaces in the LMS for the three chemistry classes with an easily navigated structure on Week 2 of June 2017
I	1.4.3	Transfer all instructional materials to the corresponding spaces of the chemistry online courses in the LMS on Weeks 3–4 of June 2017
J	1.5.3	Conduct 3 training sessions with the chemistry teachers in Weeks 1–3 of June 2017
K	1.6.1	Make a final test of the functionality of the learning management system (LMS) for the three created online chemistry courses in both the teacher and student modes on Week 1 of July 2017
L	1.6.2	Check if all instructional materials can be accessed instantly and easily by the users on Week 1 of July
M	1.6.3	Meet with the client and the key stakeholders during Weeks 2–3 of July to present the project deliverables
N	1.6.4	Make a final report to the client and confirm the successful completion of the project on Week 4 of July 2017

Critical Path

Figure 1 shows a network diagram of the major milestones of the project. Fourteen tasks were arranged in the order they need to follow for the successful completion of the assignment and show which of those activities can be done at the same time as other activities and, hence, relatively independent of each other.

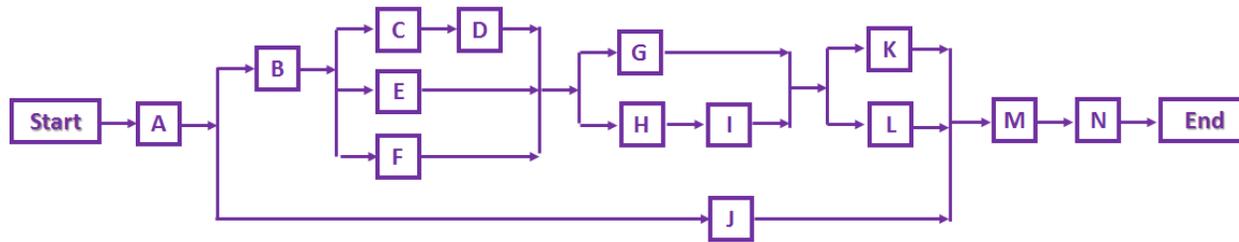
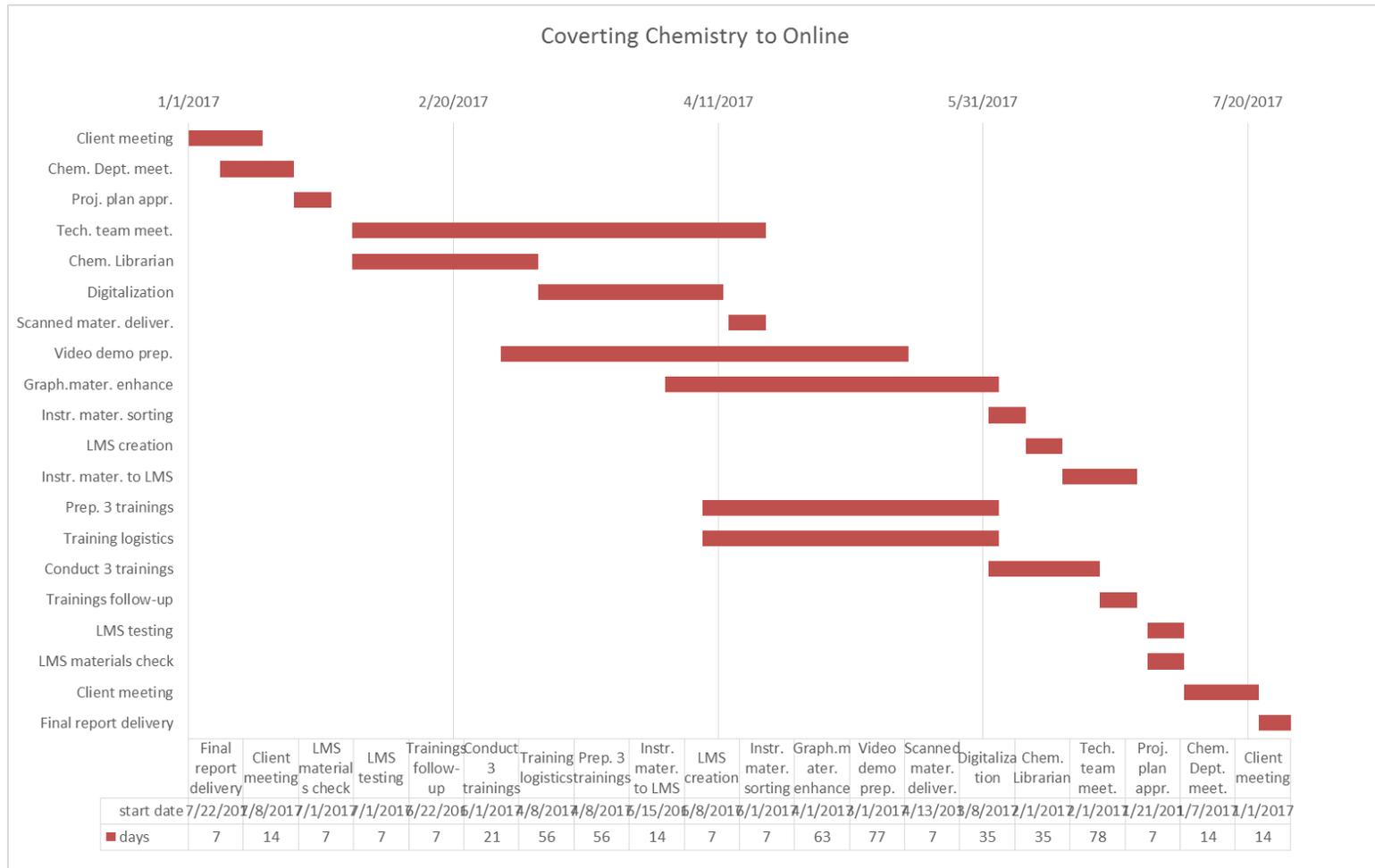


Figure 1. The Critical Path according to the major milestones

Gantt Chart

The Gantt Chart below shows the duration of the major project activities in the time continuum.



Project Proposal (Does not include all activities for implementation)

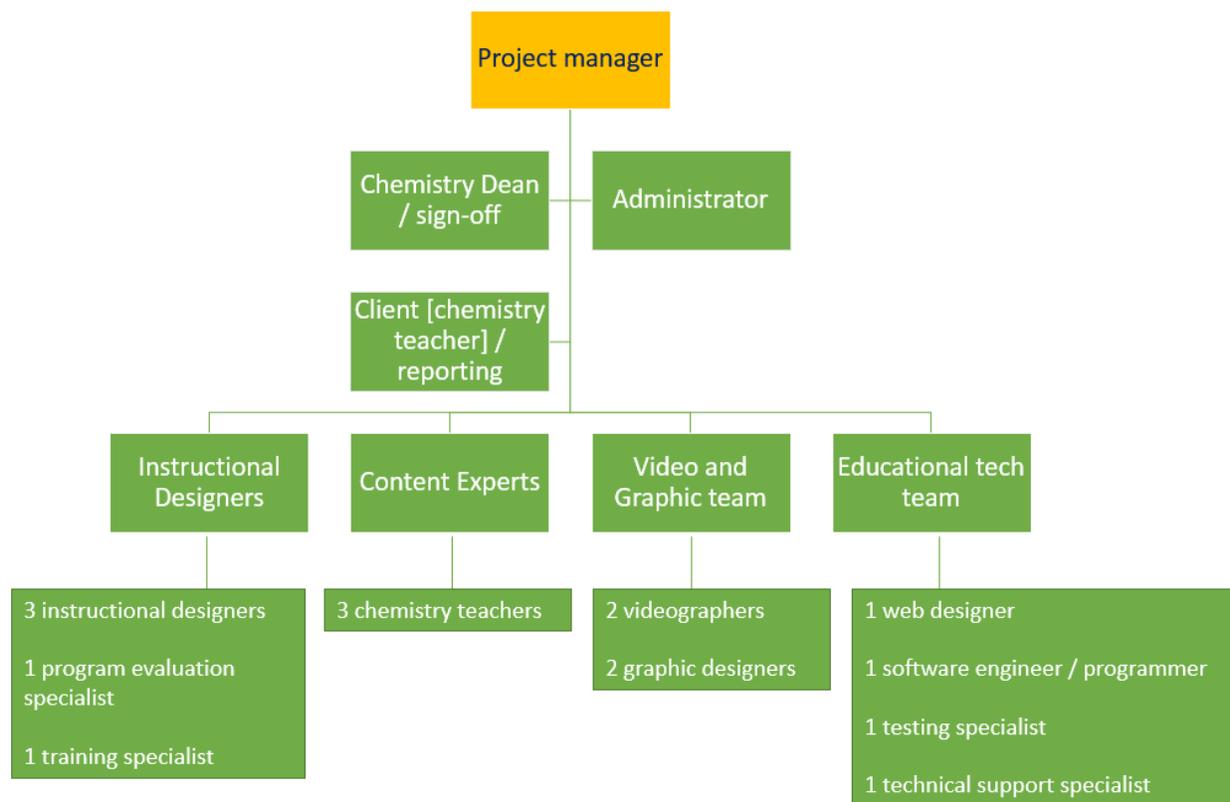
<i>Project Name: Converting Face-To-Face Chemistry Classes to Online</i>							<i>Project Manager: Melissa Date: 03/03/2016</i>	
<i>Activity</i>			<i>Schedule</i>	<i>Budget</i>				
<i>No.</i>	<i>Name</i>	<i>Description:</i>	<i>Start-End</i>	<i>\$</i>	<i>Labor</i>	<i>Materials</i>	<i>Time</i>	<i>Manager</i>
1	Discuss.Scope	Meet w/Client to discuss goal/scope/plan of action	01/09/2017-01/13/2017	100	Salaries Included	Presentation materials and refreshments for participants	3 hours	Melissa
2	Obtain.Approval	Finalize project and receive dean approval	01/23/2017-01/27/2017	20	Salaries Included	Refreshments for meeting participants as well as copies of the plan for participants	2 hours	Yuri
3	Copyright.Issue	Discuss copyright issues with librarian	02/20/2017-02/28/2017	0	Salaries Included	Librarian will need access to these materials for review	2 hours	Jiaying
4	Digitize.material	Digitize all provided paper materials	01/01/2017-04/01/2017	20	Salaries Included	Digitization may require a flashdrive, scanner and computers are available for free use through the University	10 hours	Mirit
5	Video.Demos	Film 15 different lab demonstrations for each of the 3 classes	03/01/2017-04/28/2017	0	Salaries Included	Videography materials supplied by University to videographer. Chemistry department pays for Chemistry related materials (lab equipment, chemicals etc.)	45 hours (3 hours per demo)	Melissa

Organize Phase

Work Packages Descriptions / Assignments

Work package personnel	Tasks	Timeline periods																														Skills						
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30							
1. Educational Project Manager	1.1.1/1.1.3																															project mgt leadership, communication, training mgt, video production mgt, graphic production mgt, conversion mgt, negotiation						
	1.2.1/1.2.2																																					
	1.2.3/1.2.4																																					
	1.3.1/1.3.2																																					
	1.4.1/1.4.3																																					
	1.5.1/1.5.4																																					
	1.6.1/1.6.4																																					
2. Instructional designers team	a) three instructional designers																															F2F/Online instruction, design specialty, assessment design, needs assessment, formative evaluation, time mgt, negotiation, training conduction, summative evaluation						
	1.1.1/1.1.3																																					
	1.2.1/1.2.2																																					
	1.2.4																																					
	1.3.1/1.3.2																																					
	1.5.1/1.5.2																																					
	1.4.1/1.4.3																																					
b) trainer	1.5.3																																					
2. Video and graphic designers	a) two videographers																															video production, editing, graphic design, expertise in leading software & technologies (e.g., Photoshop)						
	1.3.1.2																																					
b) two graphic designers	1.3.2.3																																					
3. Educational tech team:	a) web designer																															web design, programming, technical assistance re: hardware, testing of software, team work, time mgt						
	1.4.1																																					
	b) software engineer / programmer	1.4.2/1.4.3																																				
	c) testing specialist	1.6.1/1.6.2																																				
	d) technical support specialist	1.3.1.2/1.3.2.3																																				
4. Subject matter experts	three chemistry teachers	1.1.2/1.1.3																														counseling to instructional designers, consulting the video and graphic team, approval of the converted materials in chemistry classes to online						
	1.2.3.2/1.2.3.3																																					
	1.3.1.1/1.3.1.2																																					
	1.3.2.2																																					
	1.5.3.3																																					
5. Program evaluation specialist	1.1.1/1.1.2																															formative evaluation assistance, data analysis						
	1.5.4.1																																					
	1.6.3																																					
6. Administrator	1.3.1.1																															correspond. & communic. (e-mails, reminders re: trainings & other updat.), file document. of deliver. & products, room reservations for project purposes, tech team assistance (e.g., scanning), team meetings coordination						
	1.2.1/1.2.4																																					
	1.3.2.1/1.3.2.2																																					
	1.3.2.4																																					
	1.5.2.1/1.5.2.3																																					
	1.5.3.1																																					
1.6.3/1.6.4																																						

Team Organization Structure



Recruiting Criteria for Each Position

<i>Job Title</i>	<i>Criteria</i>
Educational project manager	<ul style="list-style-type: none"> • Must have 5+ years experience managing large, education-based projects within the higher education system • Scope of project experience must include working with multiple departments with time and budget constraints. • Highly effective communication skills a must. This includes the ability to negotiate and communicate “big ideas” to multiple stakeholders • Must have experience in recruiting and/or interviewing • Technical skills in video production, web design, and chemistry preferred but not necessary.
Instructional designer	<ul style="list-style-type: none"> • Master’s in Instructional design, Education, or related field required • 3+ years of experience in curriculum/program development within higher education required • Preference given to someone with a Chemistry background • Must have experience teaching BOTH face to face and online classes

Video production specialist	<ul style="list-style-type: none"> • B.A. in Video Technology Production or related field, Masters preferred • 3+ years Video Production experience necessary, educational video background preferred • Experience must include script writing, shooting video and editing video • Ability to work with many different people from different expertise areas at once • Must submit 3 samples of work upon interview • Must be able to lift heavy equipment weighing over 50lbs
Graphic designer	<ul style="list-style-type: none"> • B.A. in Graphic Design or related field, Masters preferred • 3+ years working within the field of graphic design necessary, background in science preferred • Must submit 3 samples of work upon interview
Software engineer	<ul style="list-style-type: none"> • Bachelor degree in computer science or related fields required • Knowledge of Java/C/C++ • 3+ years previous work experience on LMS required
Web designer	<ul style="list-style-type: none"> • Bachelor degree in computer science or related fields required • Knowledge of HTML, CSS, JavaScript necessary
Administrator	<ul style="list-style-type: none"> • Associate degree • 3+ experience in higher education • MS Office knowledge including Word, Excel, PowerPoint • Ability to write and speak in high level English

Control Phase

Management Style

The style of implementation of this project is defined as democratic (“Exploring Different Management Styles,” n.d.). It means that employees, i.e. team members, have quite an autonomy to participate in the decision-making processes. For example, video specialists decide what format they choose for the final video production, basing their choices on their expertise and field-specific best practices. In return, this style supposes that “workers may have more of a sense of responsibility, since they are playing a more direct role in decision-making” (“Exploring Different Management Styles,” n.d.).

Some of the relevant guidelines for the project manager to assure a cohesive and robust team work, as quoted by Weiss & Wysocki (1992), are as follows:

- “3. Help subordinates see problems as changes.
- 5. Allow more freedom for individuals to guide their own work.
- 8. Provide a safe atmosphere for failures.

12. Make sure that innovative ideas are transmitted to your boss with your support and backing; then insist on a feedback mechanism” (p. 72).

The project management team will also be provided with short job aids as to what barriers in communication should be avoided at all costs. These will include notions such as judgements, non-constructive criticism, unnecessary moralization, name-calling.

Management Tools

Management tools are pivotal to track the project progress, see variances from the plan, and took actions to get back to the time table. In our project “Converting Face-To-Face Chemistry Classes to Online,” we will use both Gantt charts and status (or, variance) reports. Gantt charts will allow to visualize project activities according to the time they require to complete them. Status reports allows to see the completion status major tasks with reference to a specific date and whether the tasks are on time or behind it.

Example of a status/variance report for our project:



Communication

The communication model will be based on Robert Bolton's three-step process (Weiss & Wysocki, 1992):

1. Treat the other person with respect.
 2. Listen until you experience 'the other side'.
 3. State your views, needs, and feelings assertively, not submissively or aggressively" (p. 75)
- Constructive feedback and regular interactions will be encouraged among the team members.

Conflict Resolution

While conflicts may be inevitable in the project among the team members, the project manager as well as team members will be provided with the pamphlets on two frameworks in conflict resolution—by Robert Bolton and by Kenneth Thomas (Weiss & Wysocki, 1992, p. 78-80).

Contingency Planning Strategies

Plan A may not always go as planned, for which purposes Plan B may be important. For instance, some employees in the team may quit, supplies may shrink, funding may get cut, important data may get lost, etc. The way we approach those issues is by thinking about contingency planning strategies.

Johnston proposes four strategies in his article "What is strategic contingency planning?":

- a) creating alternative scenarios for the project from the start
- b) simulating scenarios in real life
- c) determining the probability of each scenario
- d) calculating time for the recovery in each scenario.

Basically, Johnston's idea is to think about the possible risks before the project begins and act them out.

The Mind Tools company suggests a three-step detailed approach in their article "Contingency Planning: Developing a Good 'Plan B'":

1. Assess the risks
2. Develop a plan
3. Maintain the plan

In this model, a huge emphasis is made on communication within the team and a call for everybody's participation in solving of the emerging problems.

For our project, both models are valuable, because they are not too many ways in which things may go awry (hence, Johnston's model with scenarios may be well designed) and because contingency plan requires an orderly and harmonious communication within the team (hence, Mind Tools model works well). In the initial stage of communication in January 2017, we will make a detailed risk assessment and develop a few scenarios of the possible course of events.

Close Phase

Project Closing Plan

The project plan is based on the 10 steps described by Weiss, J.W. & Wysocki, R.K. (1992, p. 100-101).

Steps	Criteria / Process	Deliverables
1. Termination design	The termination process is organized in detail and approved by the team	Termination manager assigned Termination team assigned
2. Termination meeting	Discussion of the process with the team Close-out assignments identified	Termination design complete Key project deliverables listed
3. Personnel termination reports	Time is allocated to create the reports of each team member	Reports submitted Reporting systems closed
4. Finance closing	Financial documents completed, no debts lefts, all expenses covered	Financial closing report prepared
5. Legal closing	Work orders, assignments, contracts, customer obligations stop	Legal relationships terminated
6. Documenting completion	Vendors and contractors document completion and compliance	Completion and compliance documents created
7. Location closing	Project office closed, project sites closed, project equipment returned	Physical presence terminated
8. Post-implementation audit	Final report created	Final report submitted to the client
9. Client's approval	Meeting with a client	Client's approval obtained
10. Project termination	Staff dismissed, locations closed	Project terminated

Format for Final Project Report

The final 20-page project report will include the following sections:

- Execute summary (evidence of on-time, on-budget, quality deliverable)
- Summary of Define Phase (opportunity, project goals, objectives, success criteria, assumptions and risks)
- Summary of Plan Phase (work breakdown structure, critical path, project timeline)
- Summary of Organize Phase (project organization chart and reporting structure, personnel talent acquisition criteria, work packages)

- Summary of Control Phase (Gantt chart, management tools, variance reports, changes from initial plan)
- Summary of Close Phase (project approval/sign-off, disposition of deliverables, dispositions of remaining resources/funds, post-project debrief audit)
- Appendices (details of the project plan, timelines, and work packages)

Present Products to Client / Client Sign-off Procedures

- Prepare the final report and presentation for the meeting with the client
- Schedule a client sign-off meeting for 28 July 2017 to showcase final deliverables. The following stakeholders will need to be present to sign-off on close of project:
 - Dean of Chemistry Department
 - Department Chair
 - Educational Project Manager (will act as termination manager)
 - Three Chemistry Faculty who will be teaching the different classes

Also invited to attend but not mandatory:

- All instructional designers
- All program evaluation specialists
- Videographers
- Graphic Artists
- Educational/Technology Programmers
- Chemistry Department Curriculum Committee members
- Chemistry Librarian

Meeting Agenda:

- Summary of the project including the final report presentation
- Show evidence of the project completion (i.e. sample of work, deliverables checklist)
- Sign-off on signature pages
- Closing: thank you's and team celebration (optional)

Deliverables Checklist to be showcased at client sign-off meeting:

- Project Overview
- Final Report
- Final Audit

Post Project Audit/ Debrief

- Schedule a meeting with the client for feedback (whether the delivery product meets the expectations)
- Schedule a meeting with the project team to assess whether the project goal was achieved on time, within budget, and according to specifications
- Schedule a debrief session to share comments on team work, project strengths, weaknesses, successes, and challenges
- Prepare a protocol for seeking feedback from the client
- Prepare the final report and send its copies to the key stakeholders
- Schedule a final meeting to deliver the major project deliverables to the client
- Arrange for team member final performance evaluations
- Complete the final audit checklist to close project activities

Appendix

Work Breakdown Structure

Activity Characteristics Legend:

1 – Status/completion measurable; 2 – Clear start/end date event; 3 – Time/cost easily estimated; 4 – Manageable/measurable/ integratable/ independent

Activity No.	Activity Description	Characteristics			
		1	2	3	4
1.1	Approve the schedule of project meetings with the client and key stakeholders during Weeks 2–4 of January 2017.	Y	Y	Y	Y
1.1.1	Meet with the client of the project—a chemistry professor—and discuss the project goal, scope, and plan of action on Week 2 of January 2017	Y	N	Y	N
1.1.2	Meet with the chemistry department chair and faculty staff to discuss the project plan during Weeks 2–3 of January 2017	Y	N	Y	N
1.1.3	Finalize the project plan and have it approved with the chemistry department dean and the client on Week 4 of January 2017	Y	N	Y	N
1.2	Digitize all instructional materials that will be put online by 01 April 2017	Y	Y	N	N
1.2.1	Schedule bi-weekly meetings with the educational technology team/programmers starting 01 March 2017 to 01 July 2017 to discuss progress and issues in their office	Y	Y	Y	Y
1.2.1.1	Check the progress of creating the site of the technology team, remind them of the 01 July 2017 deadline	Y	Y	Y	Y
1.2.1.2	Handle issues as needed	Y	Y	Y	Y
1.2.2	Discuss with the chemistry librarian the copyright issues before 01 March 2017	Y	Y	N	Y
1.2.2.1	Schedule a meeting with the chemistry librarian prior to 01 March 2017				
1.2.2.2	Book a conference room for the meeting one week prior to the meeting	Y	Y	Y	Y
1.2.2.3	Conduct the meeting with the chemistry librarian	Y	Y	Y	Y
1.2.3	Prepare the digitized syllabi, assessments, content presentations, and peer-reviewed articles by 01 April 2017 (tests, quizzes, midterm, and final exam)	Y	Y	Y	Y
1.2.3.1	Make digital copies of the syllabi, assessments, content presentations, and peer-reviewed in the necessary format by 15 March 2017	Y	Y	Y	Y
1.2.3.2	Confirm with the professors that the syllabi, assessments, content presentations, and peer-reviewed articles in the new format are correct and do not contain errors by 31 March 2017	Y	Y	Y	Y
1.2.3.3	Send the approved digital copies of the syllabi, assessments, content presentations, and peer-reviewed articles to the technology department on 01 April 2017	Y	Y	Y	Y
1.2.3.4	Confirm the receipt of the digital copies of the materials with the technology department on 02 April 2017	Y	Y	Y	Y
1.2.4	Deliver the prepared materials to the technology team on 01 April 2017	Y	Y	Y	Y
1.2.4.1	Email link all instructional materials to the technology team on 01 April 2017	Y	Y	Y	Y
1.2.4.2	Confirm the receipt of the digitized materials with the technology team on 02 April 2017	Y	Y	Y	Y

Activity Estimates

Time – *in days*; Start schedule – *Period 1 (each period is 5 days)*

Activity No.	Activity Description	Sequence relationships		Estimated Time / Start	
		before	after	days	period
1.4	Organize the instructional materials (textual, graphical, and video) into the three separate online chemistry courses folders in the learning management system (LMS) by 01 July 2017	1.6	1.3	20	23-26
1.4.1	Sort the instructional materials into the categories on Week 1 of June 2017	1.4.2	1.1.3	1	23
1.4.1.1	Sort the instructional materials according to the type of format—textual, graphical, and video on Week 1 of June 2017	1.4.2.1	1.1.3	1	23
1.4.1.2	Sort the instructional materials according to which of the three chemistry classes they belong to on Week 1 of June 2017	1.4.1.1	1.1.3	3	23
1.4.2	Create three separate spaces in the LMS for the three chemistry classes with an easily navigated structure on Week 2 of June 2017	1.4.3	1.4.1	1	24
1.4.2.1	Create three spaces for online chemistry classes in the LMS on Week 2 of June 2017	1.4.2.1	1.4.1.2	1	24
1.4.2.2	Create sections for announcements, syllabus, midterm and final exams, weekly modules, additional materials, and dropbox for each of the three chemistry classes in the LMS on Week 2 of June 2017	1.4.3	1.4.2.1	4	24
1.4.3	Transfer all instructional materials to the corresponding spaces of the chemistry online courses in the LMS on Weeks 3–4 of June 2017	1.6	1.4.2	1	25-26
1.4.3.1	Upload the syllabi in the corresponding section in the LMS on Week 3 of June 2017	1.6	1.1.4.2.2	1	25
1.4.3.2	Upload the graphic and video materials in the corresponding weekly sections of the necessary course in the LMS for each of the three courses on Weeks 3 of June 2017	1.6	1.4.2.2	2	25
1.4.3.3	Create quizzes, midterm and/or final exam tests in the necessary format in the LMS for each of the three courses on Week 4 of June 2017	1.6	4.2.2	3	26

References

Textbook

Weiss, J.W. & Wysocki, R.K. (1992). *5-Phase Project Management: A practical planning and implementation guide*. Cambridge MA: Perseus Books.

Online resources

Exploring Different Management Styles. (n.d.). Retrieved from <http://www.managerialskills.org/management-styles/>

Johnston, K. (n.d.). “What Is Strategic Contingency Planning?” Retrieved from <http://yourbusiness.azcentral.com/strategic-contingency-planning-9224.html>

Mind Tools Editorial Team. (n.d.). “Contingency Planning: Developing a Good 'Plan B.’” Retrieved from https://www.mindtools.com/pages/article/newLDR_51.htm

Graphic on Executive Summary Page

[Untitled photograph of heads in different colors]. (2016). Retrieved from <https://www.insidehighered.com/blogs/gradhacker/build-more-collaboration-your-online-class>