TMGT 8530-01 Information Management Syllabus Fa19

James Drogan
7/27/2019

Institutional Information

COURSE DESCRIPTION

This course examines how information technology may help achieve current and future opportunities for business improvement in the maritime and related industries. Methods for analyzing a business leading to the discovery of opportunity are examined. Techniques for the application of technology to these opportunities and assessing the resulting benefits are used. Consideration is given to methods for managing the technology investment. Examples are worked using contemporary and emerging opportunities and technologies. A middle and upper level management perspective is taken. Guest speakers from the industry will be featured (*Graduate Course Descriptions 2017-18*, 2017).

    A) Prerequisite(s): TMGT 7100, 7300, 7500

    B) Corequisite(s): None

    C) Follow-On Courses: None

    D) Role in Curriculum: Elective course; required course in the supply chain track

    E) This is an online course using Blackboard for the distribution of material and assignments, and for the submission of assignments and participation in discussions.

TEXT(S)

    A) Required Text(s):

        1) All required reading material is identified and accessible through Blackboard.

        2) All other material will be distributed through Blackboard.

STUDENT LEARNING OBJECTIVES

    A) Course Objectives

        1) The complexity of the modern global transportation system would be impractical, if not impossible, to manage without the deployment of information and communications technology (ICT). This course takes up the issues involved in ICT-enabled organizations.

        The why, what, when, who, how, and where of ICT deployment will be considered. Underpinning this examination of the issues is an understanding and application of the principles associated with ethics, critical thinking skills, and communications.

        This is not a technology (i.e., "speeds and feeds") or communications (i.e., connectivity and network design) course. ICT changes too rapidly, in the context of what this course aims to do, to gain value from spending much time at these levels. The question we address is, no matter the "speeds and feeds" or connectivity and network design, how do we maximize the value of ICT to the enterprise?

Opportunities to demonstrate leadership and team skills will be provided in the discussions and issue reports. An understanding and application of contemporary developments in ICT and the context of the global transportation system will be an additional focus in this course.

There will be examples of the use of ICT from the industry.

There will be a course project that analyzes the potential impact of major contemporary trends on the maritime and maritime-centric supply chain industries. Teams are developed to work this project.

2) ICT and the industries of interest are both fast changing areas. Staying tuned to the daily developments will be stressed. The course will be modified as these developments warrant.

3) You should be aiming to develop breadth of skill – about ICT as it affects the industries of interest, about the global marketplace, its myriad cultures, and the manner in the application of ICT is affected by these issues, and about the strategic issues to which ICT must respond.

4) At the conclusion of this course you should have skills and knowledge sufficient to discuss these topics at a high level with other interested parties (e.g., industry executives) such that you will be seen as someone who can make valuable contributions to maritime organizations today and in the future.

5) ICT, transportation and the management of each are undergoing significant, rapid change. The course will be contemporary (James Drogan, 2009c, revised 6/18/17).

COURSE ASSESSMENTS

A) Assessments in the Class

Ten on-line discussions, five written deliverables, and team participation.

B) External Assessments

None

ACCOMMODATIONS FOR STUDENTS WITH LEARNING DISABILITIES

Students with a documented disability and seeking to utilize services should contact Dr. Sherill Anderson, Assistant Dean of Student Affairs at sanderson@sunymaritime.edu or by visiting Student Affairs on the first floor of Baylis Hall. All academic accommodations are assessed and provided on an individual basis and must be grounded in documentation. Accommodations will be made during the academic year for KUP's (knowledge, understanding, and proficiency) tested as part of a written exam. No accommodations will be made for practical assessments outlined in the STCW guidelines. All student disability information is confidential. Students must meet with Accommodation Services **EACH SEMESTER** in which they wish to receive accommodations. Faculty cannot provide accommodations without official notification from Accommodation Services (Student Affairs).

ACADEMIC INTEGRITY POLICY

Absolute integrity is expected of every Maritime student in all academic undertakings.

A Maritime student's submission of work for academic credit indicates that the work is the student's own. All outside assistance should be acknowledged, and the student's academic position truthfully reported at all times. In addition, Maritime students have a right to expect academic integrity from each of their peers and instructors.

Students are expected to do their own work in class, on assignments, laboratory experiments, and examinations or tests in accordance with the directions given by the instructor. It is the responsibility of all students to read and understand this statement of College policy on academic integrity. Maritime College considers the violation of academic integrity a serious matter, and one that will be treated as such.

A student who violates academic integrity may, depending on the nature of the offense, be subject to one or more of the following measures: failure of the assignment or examination, failure of the course, dismissal from the Regiment of Cadets, or dismissal from the College. Violations of academic integrity, also known as academic dishonesty, are subject to review by the Judicial Board. For details, go to http://www.thezonelive.com/zone/02_SchoolStructure/NY_SUNYMaritimeCollege/handbook.pdf

ALL ACADEMIC INTEGRITY VIOLATIONS WILL BE REPORTED TO THE DEAN OF STUDENT AFFAIRS

Course Information

INSTRUCTOR INFORMATION

A) Prof. James Drogan, jdrogan@sunymaritime.edu, 718-409-7289, MAC 228.

B) Office hours: 9AM – 3PM Monday through Thursday. Appointments are recommended.

CLASS MEETINGS

A) **This is an online course accessible via Blackboard.**

CLASS POLICIES

A) GRADING

  1) Composition (165 points)

    (a) -line Discussions: 50 points (10 discussions x 5 per discussion).

    (b) Written Deliverables: 100 points (5 deliverables x 20 per report).

    (c) Team Assessment: 15 points.

  2) No makeup or extra credit work will be assigned.

  3) Final grade as assigned according to the following table.

%	GPA	Grade
1.000	4	A
0.930	4	A
0.900	3.7	A-
0.871	3.3	B+
0.830	3	B
0.800	2.7	B-
0.771	2.3	C+
0.730	2	C
0.700	1.7	C-
0.000	0	F

The initial final grade represents the points attained divided by the total points available. This mathematical guides me in the assignment of the final grade. What this means is that the final grade I assign may be different from the mathematical grade. In assigning the final grade I take into account your consideration, respect, and encouragement of others; your desire for learning and discipline in completing the assignments; your ability to bring relevant issues to the attention of the class.

Approach

The learning process is conceived of as an integration of streams of knowledge and effort within the constraints of time, space, and other exogenous forces, the effective management of which leads to successful students. The successful student is seen as one whose capabilities in dealing with the subject matter have developed the most over the length of the course.

Figure 1 The Learning Process

Philosophy of the Course

"The best teachers are those who show you where to look, but don't tell you what to see." Alexandra K.Trenfor

A further elaboration of my approach to teaching may be found at *A Philosophy of Teaching* (James Drogan, 2018a).

In short, however, my aim is to help the students develop a set of capabilities (knowledge, skill, experience, attitude, behavior) that will enable them to survive, thrive, and make a difference in the current and emerging world. I aim to do that by providing the best learning environment I can.
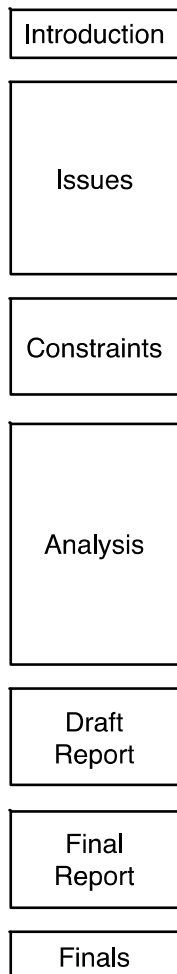
Overview of Structure of Course

Introduction

Issues

Constraints

Analysis

Draft Report

Final Report

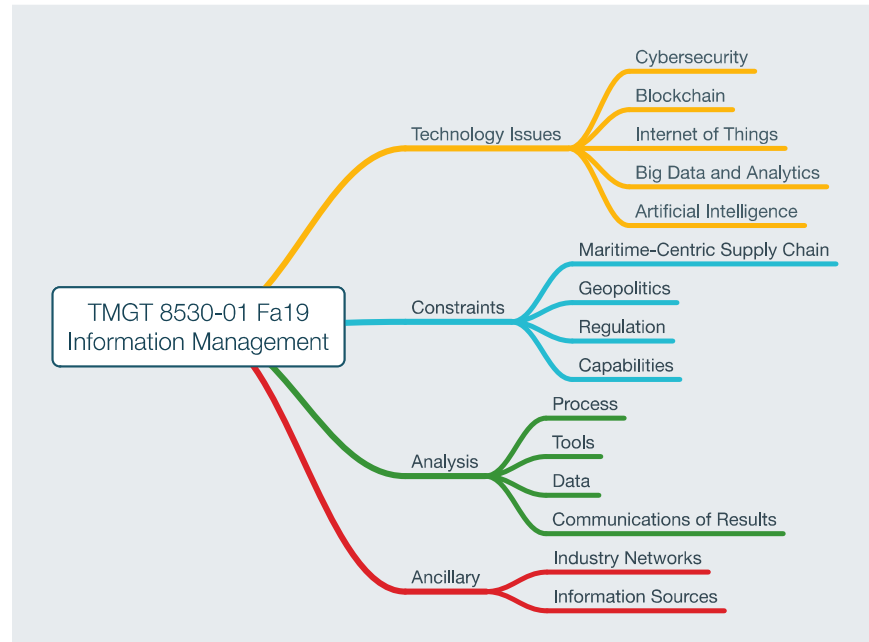Finals

Figure 2 Structure

Figure 3 Detail

Figure 2 lays out the seven modules of the course in a sequential order. The height of the box is relative to the number of weeks of the 16 in total spent in each module. The higher the box the more extensive and intensive the focus. This focus will be adjusted as necessary. My experience is that the majority of the effort in a project is focused on identifying the significant underlying issues, and analyzing their impact on the organization.

Figure 3 represents the specific topics taken up in the course. These result from my experience, observation, and thinking. Students should feel free to make changes supportable by research and persuasive argument. Dogma and ideology have no role in this course.

Modules

1. Introduction to the Course; Setting the Context

    1.1. Purpose

    There are significant external forces related to information management that are reshaping the world of shipping. Figure 3 suggests some of these forces.

    This course aims to improve your understanding of how this reshaping may take place and alternatives available for responding to these developments.

    Introduces the course; learning objectives, modules, discussions, course project(s), assessments, and relevant background information.

    1.2. Reading (Foundation Documents)

    Ethics, Critical Thinking, and Communications (James Drogan, 2009b)

    Information System Fundamentals (James Drogan, 2005a)

    Principles for Applying Information Technology (James Drogan, 2005c)

    The Aim of Information Management (James Drogan, 2015)

    > **The four documents immediately above are considered critical. They heavily influence the design and conduct of this course. Please consider them as must-reads.**

    A Discussion Guide for A Clash of Forces (James Drogan, 2019a)

    Some Comments on Change in Strategic Management (James Drogan, 2019b)

    An Introduction to Cybernetics (Ashby, 1963, Chapter 1)

    2016 Future Supply Chain (Global Commer`e Initiative & Capgemini, 2008, sec. Forward, Executive Summary)

    ACTIVE Ethics: An Information Systems Ethics for the Internet Age (McBride, 2014).

    1.3. Context

    Information management needs to be considered within a context. For example, the context represented by the insurance industry differs from that represented by the aerospace industry. Context shapes the discussion.

    2016 Future Supply Chain strongly focuses on change towards the consumer end of the supply chain.

    How might these changes ripple upstream and affect the maritime-centric supply chain industries? Which change may be the most significant? What's the likelihood that this effect will happen? What do we do about it?

    Raw Material ←————Upstream – Supply Chain – Downstream————→ Consumer

    A <u>maritime-centric supply chain</u>, the context in which we will examine information management, comprises a group of organizations involved in the movement of goods wherein the maritime portion is indispensable to the success of the supply chain. That is, removing the maritime portion causes the supply chain to fail. By failure we mean that there is no reasonable substitute for the maritime portion. Examples of such supply chains include bulk commodities

such as oil and grain, containerized traffic such as furniture and electrical machinery.

We are about determining how information management may improve the performance of this context. <u>Note, however, that this context, as described above, is not where we begin in this course.</u>

1.4. Discussions

Modules 2-4 include weekly graded discussions (10 in total).

1.5. Writing

Modules 2-6 include writing assignments

1.6. Grading

Rubrics for the Assessment of Ethics, Critical Thinking, Communications, Discussions, Team Performance, and Presentations (James Drogan, 2019c)

2. Issues

2.1. Purpose

The preeminent objective of information management is to improve the performance of the business, that is, the maritime-centric supply chain.

Information management must, therefore, resolve performance issues. Issues are neither good nor bad until we discover the actual and potential impact. Principles of critical thinking and systems design help us here. *Some Comments on Change in Strategic Management* (James Drogan, 2019b) will provide additional ideas as to how to assess impact.

Issues are of two types.[1]

> Business: over-capacity; entry into a new market. These issues are not the focus in this course although, as you will find out later, they are indispensible to improving performance.

> Technology: blockchain; autonomous ships.

>> Detail on the issues identified in Figure 3 is included below. There is no implied priority in the sequence in which these issues are presented. Nor are you constrained to just these issues. That is, if you think there are other important technology-based issues, bring them into the discussion.

>> Ross Ashby's words were brought to your attention in *The Aim of Information Management* (James Drogan, 2015).

>>> Cybernetics, too, is a "theory of machines", but it treats, not things, but *ways of behaving.* It does not ask "what *is* this thing?" but "*what does it do?*"

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[1] In general, one should seek to understand the business issues first, what is required for their resolution, and what role, if any, information management and its supporting technology will play. Much of my experience and writing reflects this preference. However, in the modern world technology is a powerful, almost irresistible force expressed in questions such as, "How are you using blockchain?" This course therefore considers the technology advances as issues to be resolved first. That is, the potential resolution is seeking an issue to resolve.

Our focus in this course is on the behavior of ICT – what it does – not what it is. What ultimately is implemented is behavior.   When you read, read to understand the behavior.
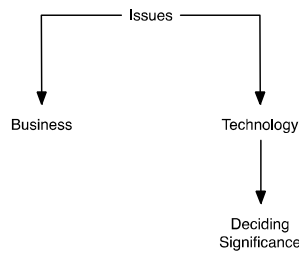
Each issue will be the focus of a one-week discussion.

2.2. Cybersecurity

2.2.1. Reading

A Framework for Improving Cybersecurity Discussions Within Organizations (Choi, Kaplan, & Lung, 2017)

Cyber Security (James Drogan, 2017b)

2.2.2. Discussion

Consider your knowledge of and experience in the maritime industry. What aspects of the industry represent the most significant risk to cyber security breaches? I use breaches here to represent chance failures as well as deliberate attacks. How do you decide significance? What action do you recommend to close the breach?

2.3. Internet of Things

2.3.1. Reading

Ten Trends Shaping the Internet of Things Business Landscape (Lamarre & May, 2019)

A Note on the Internet of Things (James Drogan, 2017a)

2.3.2. Discussion

"Things" seem to me to be an all-encompassing term implying countless instances. Not all of these things are important. To stretch the point to make the point, how important is it that I know the temperature in Moscow at this moment?

How should we decide which things are important, the manner in which they should be connected, the information that should be exchanged, and the frequency of that exchange?

2.4. Big Data and Analytics

2.4.1. Reading

How Do You Talk to Big Data? (James Drogan, 2011)

With Big Data, Context is a Big Issue (Augify, 2013)

2.4.2. Discussion

All of us know how a thermostat works. You set the desired temperature and the thermostat turns on or off the heat (or air conditioning) depending upon the setting. You only have to decide the setting and the thermostat interprets and acts on the basis of that information.

Cruise control on an automobile works much than same way. However, cruise control cannot see the icy road ahead and decide that speed must be reduced. The driver must be aware of road conditions and intervene.

> "The problem with machines that think is that they give rise to people who don't need to think. This presents a significant challenge in the dynamic and complex maritime world, where assessment and judgment, based on experience and total situational awareness, are fundamental to making the 'right' decisions — often under tight time constraints — that can spell the difference between safe passage and disaster." Captain George Quick, IMO Safety Committee.

Big data and analytics are likely not to be enough. The judgment of which Quick speaks is required and that must be embedded in the person. That is, we are looking for the best combination of man and machine.

> "Real advanced technology — on-the-edge sophisticated technology — issues not from knowledge but from something I will call *deep craft*. Deep craft is more than knowledge. It is a set of knowings. Knowing what is likely to work and what not to work. Knowing what methods to use, what principles are likely to succeed, what parameter values to use in a given technique. Knowing whom to talk to down the corridor to get thing working, how to fix things that go wrong, what to ignore, what theories to look to. This sort of craft-knowing takes science for granted and mere knowledge for granted. And it derives collectively from a shared culture of beliefs, and unspoken culture of common experience.

> It also means knowing how to manipulate newly discovered and poorly understood phenomena, a type of knowing that comes from practical experimentation and research built up on local universities and industrial labs. A knowing that again becomes part of a shared culture." (Arthur, 2011, pp. 159–160)

Discuss what you think needs to be known, in the Arthurian sense, how the knowings are developed, maintained, and applied.

2.5. Artificial Intelligence

2.5.1. Reading

Business Intelligence, Artificial Intelligence, and Machine Learning: Working Definitions (James Drogan, 2017c)

AI: Questions (James Drogan, 2018b)

It's Time to Talk About Ethics in Artificial Intelligence, (Sproule, 2018)

2.5.2. Discussion

Joe Procopio writes:

> *AI (and so on) is a new science. The people with all the AI science experience have little, if any, application experience.*

> *The people with the application and business experience might be either dismissive or fearful of the science, or they just don't have the time to understand it.* (Procopio, 2018)
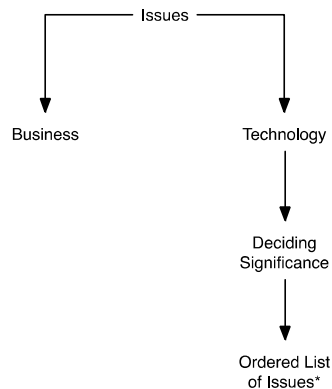
AI, while bright with promise of benefit to business is also dark with potential negative effect. Captain Quick's comment above reflects this latter concern. The bright promise is reflected in the ability of AI to, for example, assist in medical diagnoses.

Our responsibility is to see and fairly evaluate the potential positive and negative impacts of AI. That is the subject of this discussion.

2.6. Writing Assignment

2.6.1. The technology issues are not likely to have the same significance in the sense of positive impact on the organization.

Please further consider the issues you have identified. Rank them in order from most to least significance. Support your decision.

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                    ── Issues ──
              ┌──────────────────────┐
              │                      │
              ▼                      ▼
          Business              Technology
                                     │
                                     ▼
                                  Deciding
                                 Significance
                                     │
                                     ▼
                                Ordered List
                                 of Issues*
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3. Constraints

3.1. Our discussion of issues is undertaken with the intent of finding a resolution (else why discuss issues?). Resolutions are always constrained and in this module we take up some of those constraints.

The problem domain; maritime-centric supply chain

Geopolitics

Regulation

Capabilities; human (knowledge, experience, skill, attitude, behavior) and factors of production (financing, raw materials)

During the discussion you should feel free to raise other constraints.

3.2. Reading

An Introduction to the Supply Chain (James Drogan, 2008)

Toward a New Geopolitical Model (Friedman, 2019)

Where is Technology Taking the Economy (Arthur, 2017)

The Global Internet Is Disintegrating. What Comes Next? (Adee, 2018)

Globalization in Transition: The Future of Trade and Global Value Chains (Lund et al., n.d.)

Digital Globalization: The New Era of Global Flows (Dobbs, Manyika, & Woetzel, 2016, sec. Executive Summary)

3.3. Discussion

Discuss the relationship between these constraints.

The relative strengths and weaknesses of these constraints change over time? Which is dominant at the moment and why?   How are these relationships likely to change over the next

10-15 years? Why? How do these changes affect the use of information management to improve the performance of the organization?

3.4. Writing Assignment

The inevitable synthesis of the issues (what we want to resolve) with the constraints (what we have to affect the resolution) leads to a more practical and achievable set of actions to improve performance of the organization.

This assignment is of importance because it provides the base from which we draw conclusions and make recommendations on two important points.

Our approach to determining the quality of the critical thinking process used to determine the issues, constraints, their interrelationships and mutual effects.

The evidence to support subsequent conclusions and recommendations.
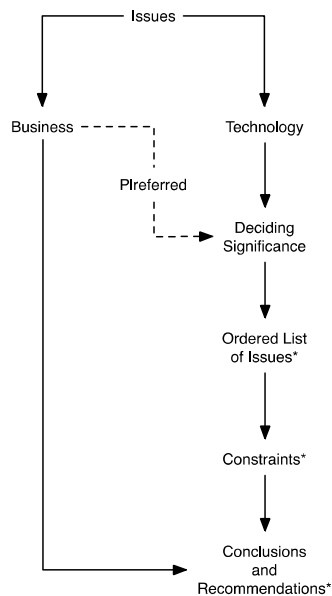
4. Analysis

4.1. Purpose

It is highly unlikely that examination of the intersection of issues and constraints would conclude that there would be no impact on the organization and no need for action.

Issues require resolution. The resolution to the issues identified in this course lies in an information management system that improves the ability to improve the decision process. This process is represented by the SIDAL loop (Haeckel & Slywotzky, 1999).
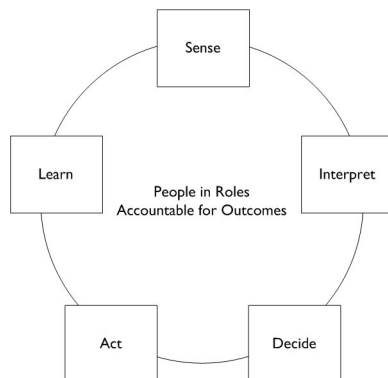
This is an important point. The aim is not to implement information technology for its own sake, but rather to use information technology to improve the performance of the organization. That is, the real issue to be resolved is a business issue, not a technology issue.

Issues

Business   Technology

PIreferred

Deciding Significance

Ordered List of Issues*

Constraints*

Conclusions and Recommendations*

The preferred method of analysis is to bring the business issues into the analysis at the point of Deciding Significance.

Focusing first on technology limits the issues that can be resolved. Suppose, for example, all one has is a hammer, but what one needs to do is cut a board. The risk is that the most important business issue will not be uncovered and a solution sought.

Blockchain, autonomous ships, AI are often the leaders in the press and meetings when, in my view, the business issues should first be sought.

The aim is to describe a resolution for the most significant issues identified earlier. You are, in a sense, defining a business system (see *Note on Building a Management System* in the readings for this module).

Select two to three of the issues you have under consideration such that comparison and contrast can be made. Successful business is about making the best decisions.

4.2. Reading

Some Comments on Change in Strategic Management (James Drogan, 2019b)

Note on Building a Management System (James Drogan, 2005b).

Data, Information, and Knowledge - Relevance and Understanding (James Drogan, 2009a)

Forces (James Drogan, 2003)

A Small View of a Possible World (J. Drogan, 2004)

4.3. Discussion

This module may well have taken many of you to places where you have not heretofore been. Please, please, please understand the context of the assigned readings. People have been in this part of the jungle before and have some proven ideas about surviving and thriving.

Please, please, please ask and answer questions in the assigned, graded discussion area.

4.4. Written Assignment

Define your solution in terms of what it does and who is affected. Consider the elements of the business system as identified in the assigned reading. Identify the risks and uncertainties. Discuss how you would go about implementing the solution.

Consider the following structure for this paper.

Issue Being Resolved

    Solution Definition

    Impact

    Risks

    Uncertainties

    Approach to Implementation

5. Draft Report

   5.1. Purpose

   The draft report brings together all your work into a coherent whole telling the story of what you set out to do, what you did, what you found along the way, and your conclusions and recommendations.

   This requires that you integrate your previous papers into one coherent whole.

   It is a means of checking your work against the assignment.

   It solicits feedback from your principal (me) to be incorporated in your final report. You may think you've done quite well, but it is the verdict of the principal (me again) that counts.

   5.2. Reading

   None

   5.3. Discussion

   Please, please, please ask and answer questions in the assigned, ungraded discussion area.

   5.4. Written Assignment: Draft Report

   While this is a draft, focus on it as if it is your final report. Resist the temptation to say, "We'll fix this on the final." You would rather, I think, get feedback on the draft suggesting you have little to do to complete the final report than you would feedback that suggests you have a long way to go and a short time to get there.

   Time is the most precious nonrenewable resource we have. Don't squander this resource. It's more prudent to work hard now and get to the end with time to spare than it is to get towards the end and find that you need more time than is available.

   The table of contents for the body of the report has been completed by this point. You need to add:

   An Abstract: see ("The Purdue University Online Writing Lab (OWL)," 2011, sec. The Report Abstract and Executive Summary)

   A Conclusion: see ("The Purdue University Online Writing Lab (OWL)," 2011, sec. 2.3: Conclusions)

   Make sure the references are current. All in-text citations must have a reference and all references must have an in-text citation. See ("The Purdue University Online Writing Lab (OWL)," 2011, sec. APA Style)

6. Final Report

   6.1. Purpose

   You will have received feedback from me on your draft report. One purpose of this module is for you to process this feedback and make such amendments to your draft report as conclude need to be made. See *Feedback: Importance and Processing* (James Drogan, 2018c) for additional information.

   A second purpose if for you to make a final pass making such other amendments as you think necessary.

   6.2. Reading

   Instructor feedback on the draft report.

   6.3. Discussion

Please, please, please ask and answer questions in the assigned discussion area.

Because of the nature of this module I think it inappropriate to grade this discussion.

One the other hand, the quality of your questions and answers, and the insight you bring to this discussion will be considered when deciding your final grade.

6.4. Written Assignment: Final Report

Schedule

Monday Class Discussion Start	Discussion Stop	Topic	Discussion Points	Issue Report Points
8/26/19	9/1/19	1. Introduction to the Course; Setting the Context		
9/2/19	9/8/19	2. Issues	5	
9/9/19	9/15/19		5	
9/16/19	9/22/19		5	
9/23/19	9/29/19		5	20
9/30/19	10/6/19	3. Constraints	5	
10/7/19	10/13/19		5	20
10/14/19	10/20/19	4. Analysis	5	
10/21/19	10/27/19		5	
10/28/19	11/3/19		5	
11/4/19	11/10/19		5	20
11/11/19	11/17/19	5. Draft Report		
11/18/19	11/24/19			20
11/25/19	12/1/19	6.Final Report		
12/2/19	12/8/19			20
12/9/19	12/15/19	Finals Week (Team Assessment and Student Course Evaluations)		

Attendance		0%
Discussion Points	50	30%
Issue Report Points	100	61%
Team Assessment	15	9%
Total	165	100%

Collaboration

You will be placed on a team with three or four other members depending upon the number of students registered for the course. The composition of the teams will be one that aims at mixing cultures as much as possible. I will decide the composition of the teams.

All members of the team will receive the same grade for the papers.

At the conclusion of the course I will ask each team member to assess the performance of his or her teammates. This assessment may cause the final grade on the paper for a particular student to be changed in either direction.

This assessment is made by answering the following question for each of your teammates.

> Would you like to be on a team with this person in the future? Available answers are; definitely yes, probably yes, probably no, definitely no.

Students not making assessments will receive no points in this area (James Drogan, 2019c, sec. Team Performance).

■

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