INTRODUCTION

Engineers, social scientists, and managers frequently bring people and technology together to address complex problematic situations in an equitable way that benefits people and the environment. Multiple systems theories and approaches have been developed to address these situations, and typical courses in systems focus on a relatively small portion of the rich assortment of available approaches to addressing systems problems. This course introduces students to multiple systems theories and approaches via readings, class discussion, reflective writing assignments, and selected case studies and team projects. The course will emphasize critical thinking about how the theories and approaches relate to each other and how they might be applied individually and in combination to address complex problematic situations.

This document contains basic information about the SYS 400 class, including contact information for the instructor. The distribution of reading material, assignments, etc. uses Purdue's Brightspace site. Students must register for SYS 400 to access the class page on Brightspace.

All material needed for class should be available; if you find this is not the case, please e-mail the instructor. Any information given in class will supersede information given in this document.

Meeting Times and Location
Monday, Wednesday, Friday, 12:30 – 1:20 pm
WALC 3122

Instructor
Dr. C. Robert Kenley
Office: GRIS 370 Phone: + 1 765 494 5160 E-mail: kenley@purdue.edu
Web: http://web.ics.purdue.edu/~ckenley/
Office Hours: Use the link to the instructor's booking page at his website to schedule a meeting.

SYLLABUS

Course Outcomes

Students will be able to understand and reflect upon the complex issues raised by technological and scientific changes and its effects on society and the global world by making sense of, evaluating, and responding to present and future changes that shape individuals' work, public, and personal lives.

This course will teach systems theories for understanding the complex problematic situations that result from the interaction of scientific and technological changes, values held by individuals and groups, and organizational and social structures. Students will also learn approaches applicable to the workplace and the public sphere that respond to these situations by addressing them in an equitable way that benefits people and the environment.

This course completes one of the requirements of the Systems Certificate (15 credits total). For more information about the Systems Certificate visit https://www.purdue.edu/collaboratory/. Ask your advisor for more information.

Course Goals

This course has two major goals:

1. Introduce multiple systems theories and approaches via readings, class discussion, reflective writing assignments, and selected case studies
2. Emphasize critical thinking about the theories and approaches
    a. How they relate to each other
    b. How they might be applied individually and in combination

Prerequisites

Undergraduate students from all majors with Upper Division standing are welcome.

Course Topics
Table 1 shows the nominal course topics. This is subject to change.

Table 1. Course Topics

High-Level Topics	Detailed Topics
Holism and Systems Practice	1. System Thinking and Approaches
	2. Systems language and Key Terms
	3. System Modeling
	4. Working in Groups and Teams
Improving Viability	5. The Viable System Model
Exploring Purposes	6. Soft Systems Methodology
	7. Critical Systems Heuristics
	8. Interactive Management
Understanding Human Systems	9. Family Systems Theory
	10. Organizations as Systems
	11. Soft Systems Approaches
Improving Goal Seeking	12. Systems Engineering
	13. Concept Generation and Concept Selection

There is a Microsoft Excel Calendar File posted to Brightspace that serves as a master schedule for all class sessions and assignments that is updated regularly. This file is stored the Microsoft OneDrive server that is accessed using your Purdue CareerID and Microsoft authentication. If you have issues with access to this file, please contact the ITaP Customer Service Center.

By Phone: +1-765-494-4000
By Email: itap@purdue.edu

Policies

Academic Integrity

Academic integrity is one of the highest values that Purdue University holds.
Individuals are encouraged to alert university officials to potential breaches of this value by either emailing integrity@purdue.edu or by calling 765-494-8778. While information may be submitted anonymously, the more information that is submitted provides the greatest opportunity for the university to investigate the concern.

Purdue's Honor Pledge was developed by students to advance a supportive environment that promotes academic integrity and excellence. It is intended that this pledge inspires Boilermakers of all generations to stay "on track" to themselves and their University.

As a Boilermaker pursuing academic excellence,
I pledge to be honest and true in all that I do.
Accountable together – We are Purdue.

Assignments

The course format includes readings, discussion, reflection, artifacts, group projects, and a case study. During many class periods, the students and instructor will discuss the related reading assignments. An Excel file that shows the reading assignments is posted to Brightspace, and the file may change as the semester progresses. Access to Brightspace is restricted to students currently enrolled in the course.

Course Materials

The is no required book for this course. There will be readings from journal articles, online texts, and other sources. These readings will be accessed via Perusall links from the Brightspace site.

Guidelines for Readings and Class Discussions

During class periods, the students and instructor will discuss the assigned reading material. Students will be assigned reading material via *Perusall*, which is linked to Brightspace; and enter their notes in *Perusall* on the readings prior to class, which will be automatically graded by *Perusall's* proprietary algorithm. For each reading assignment, students will be assigned to a reading group by *Perusall* that will be randomly determined or according to project teams, depending on the nature of the reading material. The instructor will review the results from *Perusall* prior to the class period, and the instructor and students will discuss the readings.

Most the discussion should focus on assisting the entire class to bring themselves to a level at which they can evaluate the topics. This evaluation may include how the topics relate to previous class discussions, how and where they fit into the universe of systems theories and approaches, how the topics may improve systems thinking, and the practicality of the topics. Keep in mind that not everyone will share the same point of view.

How Perusall Works

Perusall helps you master readings faster, understand the material better, and get more out of your classes. To achieve this goal, you will be collaboratively annotating the readings with others

in your class. The help you will get and provide your classmates (even if you do not know anyone personally) will get you past confusions quickly and will make the process more rewarding. While you read, you will receive answers to your questions, help others resolve their questions (which also helps you learn), and advise the instructor how to make class time most productive. You can start a new annotation thread in *Perusall* by highlighting text, asking a question, or posting a comment; you can also add a reply or comment to an existing thread. Each thread is like a chat with one or more members of your class, and it happens in real time. Your goals in annotating each reading assignment are *to stimulate discussion by posting good questions or comments* and *to help others by answering their questions*.

Research shows that by annotating thoughtfully, you will learn more and get better grades, so here is what "annotating thoughtfully" means: Effective annotations *deeply engage points in the readings, stimulate discussion, offer informative questions or comments, and help others by addressing their questions or confusions*. To help you connect with classmates, you can "mention" a classmate in a comment or question to have them notified by email (they will also see a notification immediately if online), and you will receive a notification when your classmates respond to your questions.

For each assignment *Perusall* will evaluate the annotations you submit prior to the due date. Based on the overall body of your annotations, you will receive a score on a continuous scale from 0 to 100 for each assignment as follows

- 90 - 100 = demonstrates exceptionally thoughtful and thorough reading of the entire assignment
- 70 - 90 = demonstrates thoughtful and thorough reading of the entire assignment
- 60 - 70 = demonstrates superficial reading of the entire assignment OR thoughtful reading of only part of the assignment
- 0 - 60 = demonstrates superficial reading of only part of the assignment

When *Perusall* looks at your annotations, it is attempting to measure the effort you put in your study of the text. Superficial or short comments or questions can serve to initiate interaction with your peers, but do not reflect the effort that the *Perusall* looking for. Is it looking for thoughtful questions or comments that stimulate discussion or thoughtful and helpful answers to other students' questions. The number of thoughtful annotations for each reading assignment varies according to the length of the assignment. Note, also, that to lay the foundation for understanding the in-class activities, you must familiarize yourself with each assignment *in its entirety*. Failing to annotate the entire assignment will result in a lower score.

Reflections and Artifacts
Some modules will have assignments that request various reflections and artifacts based on readings, lectures, and discussions. We will use the Purdue Circuit online grading system for reflections where you and your peers will review each other's reflection submissions.

Team Project and Exercises
Students will complete two team projects and two team exercises during the term. These projects and exercises will provide students with the opportunities to practice applying some of the

concepts and methods encountered during the term. Projects and exercises will require students to submit team reports and to complete individual peer evaluations of team members.

The project teams will be formed the first week of the term and a team charter will be required that will lay out the norms for operating the team and an initial schedule for how the team will complete the two exercises and the two projects. ***Project teams have found that they need to meet at least once per week to be successful. Even when there are no team assignments during a given week, it will be valuable to meet as a team as a study support group.***

Final Case Study

The Final Case Study is an individual assignment that will provide students with the opportunity to practice applying some of the theories and approaches encountered during the semester. It will apply Critical Systems Thinking to evaluate how a complex situation can be addressed by using a combination of systems approaches to address the situation.

Missed or Late Work

The instructor will not accept late work.

The official due dates for all work are those listed on the Calendar of the course home page on Brightspace. In extraordinary circumstances such as natural disasters, grief/bereavement, military service, jury duty, parenting leave, and debilitating illness, the instructor will accept late work. For late homework to be considered for grading, the student must provide the instructor a written request with justification as to why the circumstance is extreme. The request must be consistent with a notification issued by the Dean of Students (https://www.purdue.edu/advocacy/students/absences.html).

Course Grades

There will be a numerical score for each assignment and quiz. The case studies and projects involve individuals or groups using the theories and approaches with no single correct answer, so the grading of the course will account for this. If students have a concern about a grade on their work, they should first bring it to the attention of the person who graded the work. Requests for reconsideration / regarding must be made within one week of when the work is returned to students.

Computation of final course grades will use the following distribution of weights:

Assignment	Due Date	Weight	Team or Individual Score	Evaluators
Module 01 Reading	**23-Aug**	2%	Individual	Perusall
Module 01 Reflection	**25-Aug**	2%	Individual	Peers
Module 02 Reading	**25-Aug**	2%	Individual	Perusall
Module 02 Reflection	**28-Aug**	2%	Individual	Peers
Module 03 Readings	**28-Aug**	2%	Individual	Perusall
CATME Team Maker Survey	**30-Aug**	2%	Individual	Instructors
Module 03 Reflection	**30-Aug**	2%	Individual	Peers
Module 04 Readings	**30-Aug**	2%	Individual	Perusall
Module 04 Artifacts	**1-Sep**	1%	Individual	Peers
CATME Rater Practice	**5-Sep**	1%	Individual	CATME
Module 06 Readings	**6-Sep**	2%	Individual	Perusall
Team Charter	**6-Sep**	2%	Team	Instructors
Module 07 Reading	**8-Sep**	2%	Individual	Perusall
Module 12 Readings	**18-Sep**	2%	Individual	Perusall
Module 13 Readings	**20-Sep**	2%	Individual	Perusall
VSM Team Report	**25-Sep**	4%	Team	Instructors
First Peer Evaluation Inputs	**26-Sep**	3%	Individual	Instructors
First Peer Evaluation Results	**26-Sep**	4%	Individual	Peers
Individual Quiz on VSM	**27-Sep**	4%	Individual	Instructors
Project Proposal Presentation	**27-Sep**	1%	Team	Instructors
Module 16 Readings	**29-Sep**	2%	Individual	Perusall
Module 18 Readings	**4-Oct**	2%	Individual	Perusall
Module 19 Readings	**6-Oct**	2%	Individual	Perusall
Module 20 Readings	**11-Oct**	2%	Individual	Perusall
Module 23 Readings	**18-Oct**	2%	Individual	Perusall
Team Presentation for SSM-CSH	**1-Nov**	6%	Team	Instructors
Module 30 Readings	**3-Nov**	2%	Individual	Perusall
SSM-CSH Team Report	**6-Nov**	8%	Team	Instructors
Module 32 Readings	**8-Nov**	2%	Individual	Perusall
Module 32 Artifacts	**10-Nov**	3%	Individual	Peers
Module 36 Readings	**17-Nov**	2%	Individual	Perusall
Module 37 Readings	**20-Nov**	2%	Individual	Perusall
Team Presentation for System Concept	**8-Dec**	3%	Team	Instructors
System Concept Team Report	**9-Dec**	6%	Team	Instructors

Assignment	Due Date	Weight	Team or Individual Score	Evaluators
Second Peer Evaluation Inputs	**10-Dec**	4%	Individual	Instructors
Second Peer Evaluation Results	**10-Dec**	8%	Individual	Peers
Total		100%		

30% of the weighting is allocated to team results.
22% of the weighting is allocated to peer evaluation of individuals.
48% of the weighting is allocated to individual results.

Final letter grades for the course will use the table below. The total numerical score will be rounded to the nearest integer percent.

Numerical to letter conversion for final grades							
Score	Grade	Score	Grade	Score	Grade	Score	Grade
98 to 100%	A+	88 to 89%	B+	78 to 79%	C+	68 to 69%	D+
93 to 97%	A	83 to 87%	B	73 to 77%	C	63 to 67%	D
90 to 92%	A-	80 to 82%	B-	70 to 72%	C-	60 to 62%	D-

A total score of 59% or lower will always fail.

Attendance
The University Regulations Handbook reads: "Students are expected to be present for every meeting of the classes in which they are enrolled." If you must miss a class, you are responsible for the reading material, discussion, assignments, and/or announcements made. Excessive absence from the class will seriously degrade your ability to complete the team exercises and projects and will negatively affect your CATME peer evaluation by your team mates (22% of your grade).

Campus Emergencies
In the event of a major campus emergency, course requirements, deadlines, and grading percentages are subject to changes that may be necessitated by a revised semester calendar or other circumstances. Information about these changes will be available from the public website for this course, Brightspace, or via e-mail.