

# INFO 4880: IT Analysis & Design

3 s.h. Fall Semester 2024 – CRN 41272  
5:30pm - 7:00pm Mon/Wed Meshel Hall 461

## Course Syllabus and Objectives

**Instructor:** James W. Dittrich, M.S., M.C.I.S.

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**Office Hours:** 4:25pm - 5:25pm M-W, or by appointment

**Website:** [https://jwdittrich.people.ysu.edu/INFO\\_4880/](https://jwdittrich.people.ysu.edu/INFO_4880/)

### Prerequisites

"C" or better in CSIS 3722 and either CSIS 3723 or CSIS 3782.

### Course Sequence

This course requires the deep understanding of concepts in the above prerequisites:

- CSIS 3722 *Development of Databases*, e.g., relational database design, database modeling, cardinality, primary and foreign keys, normalization, CRUD operations, and
- CSIS 3723 *Networking Concepts and Administration* or CSIS 3782 *Cisco Networking Academy 1*, e.g., OSI 7-layer principle, protocols, firewalls/security, topology and design, performance considerations.
- This is the *Gen Ed* Capstone for all Information Technology majors.

### Textbook

- **Modern Systems Analysis & Design (10th Edition)**, Joseph S. Valacich, Pearson. YSU Bookstore: [https://ysu.bncollege.com/c/Modern-Systems-Analysis-and-Design/p/MBS\\_9469406\\_used](https://ysu.bncollege.com/c/Modern-Systems-Analysis-and-Design/p/MBS_9469406_used)
- Kindle edition: <https://www.amazon.com/Modern-Systems-Analysis-Design-Valacich-ebook/dp/B0CXF1Q6WY/>

### Other Materials

- **The Design of Everyday Things: Revised and Expanded Edition** (2013), Don Norman, Basic Books. ISBN-10: 9780465050659 / ISBN-13: 978-0465050659  
Audiobook: <https://learning.oreilly.com/videos/the-design-of/9781452624129/>
- Discord: <https://discord.com/download>
- *Recommended* - Obsidian: <https://obsidian.md/>
- *Recommended*: USB and/or cloud based backups of your course materials from a vendor of your choice (OneDrive, Google Drive, iCloud, Dropbox, etc.), as hardware is never 100% reliable.

### Description

Information systems integration and modeling. Analysis of dynamic information flow, functional requirements, and system design in theory and practice.

## Catalog Description

This course is a capstone course designed to integrate the content of other courses and help students acquire knowledge and skills necessary to advance in an IT career path. Review of 1590, 2600, 2663, 3704, 3714, 3722, 3723 (3782) and 3774. This course will include organization paradigms, system evaluation and planning, interview techniques, questionnaire composition, file design and ERDs, UML/DFDs, Logical Structures (Structured English, Decision Trees, and Decision Tables), Core Business, CSF, RFPs, Story Boards, Business Rules, What-If Analysis, and System Modeling. Database Design and Network Topology will be covered in class. You are expected to consult previous texts or online material to review other subjects.

## Learning Objectives

- Develop understanding of value of systems thinking in planning and design of organizational information systems; ability to apply a design to a real-world situation (IT)
- Apply project management methodology to planning and design issues
- Synthesize results of information gathering when analyzing information system needs and designing new systems
- Prepare project proposals and make oral presentations
- Develop ability to articulate relationship between an organization-wide information system and business processes
- Create an Information System Design
- Develop an SDLC (or alternative SA) document and write project proposal

## Grading

Your grade is determined from the following sources:

- **Discussion and participation** (10%) – note that you cannot *participate* if you do not *attend* regularly.
- **Quizzes** (15%) – Given at regular intervals and assess your understanding of the materials.
- **Projects** (25%) – Given at regular intervals to apply what you have learned.
- **Exam 1** (10%) – Wednesday, October 10th – **Lab portion due via email 11:59pm**
- **Exam 2** (10%) – Wednesday, November 13th – **Lab portion due via email 11:59pm**
- **Final Project** (comprehensive, 30%) – **submissions due via email Sunday, December 8th 11:59pm, all students are required to develop and submit the final project to pass the course.**

## Assignments and Projects

In general, smaller assignments will be handed out on a Wednesday, and will be due the following Tuesday. These will be relatively simple exercises meant to give you practice with the current programming topic. There will also occasionally be larger projects meant to give you experience in designing and developing significant programs based on the principles introduced earlier in the course.

Grading of the assignments will only partially be based on their correctness. Grades will also be based on clarity of thought, creative problem-sol and general cleverness in design approaches. I give ample opportunity to earn bonus points for inclusion of thoroughness and extra features.

*Late assignments will be penalized at 10% per working day, and no assignments will be accepted after solutions are posted (generally one week after the due date).* Work on these assignments **must be your own** (see below on academic honesty for more details).

## **Lectures/Labs**

Each class day will consist of a lecture section in Meshel 461. We'll iteratively build on your understanding, so it is important to attend regularly and not get behind when concepts are explained. Some class time may be used for short real-world examples or demonstrations, and discussions related to the current topic. The remaining time may be spent on Q&A and getting help with the homework assignments. However, note that you will be expected to do most of the work on the assignments outside of class/lab time. For specific advice on installing and using specific tools on your platform or OS, please see me during office hours and I will do my best to guide you to the correct resources.

## **Faculty Evaluations**

Any course is only as good as the instructor's ability to engage with students and make the material meaningful and relevant to your current and future endeavors. Your insights are valuable; in order to continuously improve and fine tune the learning activities and address the differences in student learning styles, course evaluations are typically made available after Midterm Exams via Web link, watch your student email for further details. I will remind you to take the opportunity to provide feedback at the conclusion of the course.

## **Honors Contracts**

This class is eligible for an honors contract, if you are interested in receiving honors credit for this course, please inquire as soon as possible to discuss possible supplemental projects/papers that will qualify.

## **Important Dates for Fall 2024 Semester**

08/26/2024	Fall Term BEGINS
09/02/2024	UNIVERSITY CLOSED (Labor Day: Monday September 2 <sup>nd</sup> )
09/03/2024	Last day to add or change a grading option
09/08/2024	Last day to withdraw and receive 100% refund or reduction in charges
10/27/2024	Last day to withdraw with a grade of "W"
11/11/2024	UNIVERSITY CLOSED (Veteran's Day: Monday November 11 <sup>th</sup> )
11/27/2024	Fall Break BEGINS - No classes, offices open
11/28/2024	UNIVERSITY CLOSED (Thanksgiving Day)
11/29/2024	UNIVERSITY CLOSED (Indigenous People's Day/Columbus Day Observed - "Black Friday")
11/28/2024	Fall Break ENDS - classes resume
12/09/2024	Final Exam period - Monday December 9 <sup>th</sup> , 1730-1930
12/14/2024	Fall Term ENDS
12/16/2024	Course grades posted to Penguin Portal
03/01/2025	Last day for completing an "I" grade for Fall 2024 (Tentative)

# Topic List and Tentative Calendar



Week	Lecture Topics
1 (8/26)	Syllabus, Review of Concepts, Introduction to Systems Analysis The Systems Development Environment ( <i>reading</i> : Chapter 1)
2 (9/2)	<b>Labor Day - YSU CLOSED Monday 9/2</b> The Origins of Software ( <i>reading</i> : Chapter 2)
3 (9/9)	Managing the Information Systems Project ( <i>reading</i> : Chapter 3) <b>Project 1 assigned - due: 9/22 11:59pm</b>
4 (9/16)	Identifying and Selecting Systems Development Projects ( <i>reading</i> : Chapter 4)
5 (9/23)	Initiating and Planning Systems Development Projects ( <i>reading</i> : Chapter 5) <b>Project 2 assigned - due: 10/6 11:59pm</b>
6 (9/30)	Determining System Requirements ( <i>reading</i> : Chapter 6)
7 (10/7)	Structuring System Process Requirements ( <i>reading</i> : Chapter 7) <b>Project 3 assigned - due: 10/20 11:59pm</b> <b>Exam 1 Wednesday, Oct 10<sup>th</sup></b>
8 (10/14)	Structuring System Data Requirements ( <i>reading</i> : Chapter 8)
9 (10/21)	Designing Databases ( <i>reading</i> : Chapter 9) <b>Project 4 assigned - due: 11/3 11:59pm</b>
10 (10/28)	Designing Forms and Reports ( <i>reading</i> : Chapter 10)
11 (11/4)	Designing Interfaces and Dialogues ( <i>reading</i> : Chapter 11) <b>Project 5 assigned - due: 11/24 11:59pm</b>
12 (11/11)	<b>Veteran's Day - YSU CLOSED Monday 11/11</b> System Implementation and Maintenance ( <i>reading</i> : Chapter 12)
13 (11/18)	The Design of Everyday Things <b>Exam 2 Monday, Nov 18<sup>th</sup></b>
14 (11/25)	<b>Fall Break - YSU Open/No Classes Wednesday 11/27</b> The Design of Everyday Things
15 (12/2)	<b>Final Project Presentations</b>
16 (12/9)	Finals Week - <a href="https://ysu.edu/registrars-office/final-exam-schedule">https://ysu.edu/registrars-office/final-exam-schedule</a> <b>Final Exam Period Monday, Dec 9th @1730-1930</b>

# General Course Policies and Guidelines

## Grading

The course grade will be based on the required material:

- 90% will guarantee at least an 'A' for the course,
- 80% will guarantee at least a 'B' for the course,
- 70% will guarantee at least a 'C' for the course, and
- 60% will guarantee at least a 'D' for the course.

## Assignment Submission

Most assignments that you write for the class will be submitted via email. When submitting assignments, do the following:

- Submit to the instructor's preferred, correct email address, as above (Gmail).
- Include your name(s), course number, and the title of the assignment in the subject header.
- Attach all code/artifacts/documents as a single zipped archive, use a utility to compress into a single file. Files should be named in the form of username\_assignmentname.zip
- **Do not** submit file sharing links or online repository URLs, as I require all artifacts to be submitted with the email.

*Assignments that do not follow this protocol **will not be scored**, and you will receive zero credit unless resubmitted.*

## Due Dates and Late Assignments

An assignment (including programs and projects) is late if it is not IN MY POSSESSION (either as hardcopy or electronically) by midnight on the due date. Late assignments may be penalized at some percentage (usually 10%) per day late (the weekend counts as one day), and no credit will be given for assignments turned in after solutions have been discussed or handed out. Extenuating circumstances (such as nonfunctional labs) may be recognized if they become a chronic problem.

## Attendance

Class attendance is optional, except for students who are receiving VA benefits, or in situations (such as group meetings) where your absence would be detrimental to other students in a group. However, missing class is not an acceptable excuse for failure to complete required material on time. Every lecture will cover material related to assignments and exams, and in general the grades in CSIS classes are directly related to the number of lectures attended. Material that is presented in class will not be covered again outside of class – if you miss class, it is up to you to find out what was covered and to get the notes from someone else.

## Exams

Exams will cover material presented in class and corresponding required sections in the text, and will also usually relate to material covered in the homework. Make-up exams are allowed, but only for compelling and verifiable reasons - and may require documentation. I need to be informed as soon as possible if you need to arrange to take a make-up test (ideally, before the exam is given), and I reserve the right to refuse if too much time has passed since the exam, or if no compelling reason is given.

## Office Hours

The best way to get help with an assignment is to stop by my office during office hours. Many problems that you might get "stuck" on for hours upon end can usually be fixed with my help within a few minutes.

## Email

The best way to reach me with questions outside of office hours is email ([james.dittrich+YSU@gmail.com](mailto:james.dittrich+YSU@gmail.com)). I will attempt to answer within 48 hours (except for holidays, weekends, and breaks). Items sent to my campus address do NOT get to my mobile devices, and I therefore cannot guarantee prompt responses. There are some things that you can do to help out:

- Text me after you send the email to let me know you have an urgent question.
- Include your name and course number in the subject (otherwise it might not make it through the spam filters). Follow up your email with a quick text letting me know you've emailed.
- Be as specific as possible about the question or problem.
- If it is a problem with an application, be sure to attach a screenshot. However, depending on the type of program and where I happen to be, I may not be able to help right away (my office hours are usually better for getting help with technical issues).

Most assignments that you write for the class will be submitted via email. When submitting assignments by email, do the same things:

- Include your name, course number, and the number of the assignment in the subject.
- Attach all code/documents. If there are issues with the size/number of attachments, please use a zip utility to compress the collection into a single file.

## Class participation

If you do not ask questions in class, you will not get as much out of the class as you could. Your class participation will be based on the instructor's assessment of whether you are regularly involved in the class over the course of the semester.

- **Note:** Class participation *may* affect your grade if there is a borderline grade decision.
- If you receive a failing grade in class, and have missed 25% or more of the classes, you will receive a NAF (Non Attendance Failure) as your final grade. This may negatively impact your future financial aid eligibility.

## Mandatory Statement of Non-Discrimination from the University

Youngstown State University does not discriminate on the basis of race, color, national origin, sex, sexual orientation, gender identity and/or expression, disability, age, religion, or veteran/military status in its programs or activities. Please visit our accessibility website for contact information for persons designated to handle questions about this policy.

## Students with Disabilities

In accordance with University procedures, if you have a documented disability and require accommodations to obtain equal access in this course, please contact me privately to discuss your specific needs. You must be registered with the Academic Success Center [Accessibility Services](#), located at Kilcawley Center 2082, and provide a letter of accommodation to verify your eligibility at the beginning of the semester or when given an assignment for which an accommodation is required. You can reach ASC Accessibility Services at 330-941-1372.

## Academic Support

The Marion G. Resch Academic Success Center is a resource on Campus established to help students successfully complete their university experience. Please phone (330) 941-3538 or visit the Center for assistance in tutoring or for individualized assistance with social and academic success. The main Center is located in Kilcawley West below the bookstore. For additional support, see this list of [Student Resources](#).

## Collaboration: Ethical/Academic Standards

### Academic Honesty

As outlined in [The Student Code of Conduct](#), all forms of academic dishonesty are prohibited at Youngstown State. This includes plagiarism, the unauthorized use of tools (including Generative AI, e.g., ChatGPT) or notes in taking tests or completing assignments, fabrication of data or information used for an assignment, working with others without permission from the instructor, and more. A student who is believed to have violated the academic integrity policy will meet with the instructor to discuss the allegations. The student may accept responsibility for the violation and any sanctions selected by the instructor, or they have the right to ask for a hearing before a hearing panel. The full Academic Integrity policy can be found in Article V of The Student Code of Conduct, while further information on University procedures for alleged academic integrity violations can be found in Article V.

Academic honesty is both expected and required. HELPING fellow students is acceptable, and is actually a very good way to learn the material. COPYING is NOT acceptable, laughably easy to detect, and will result in loss of credit for the assignment, and possibly failure of the course. Follow these guidelines:

- If you receive help with an assignment, then you must acknowledge that help in the documentation (your grade will not be affected unless otherwise announced).
- If you give help to another student, then it is your responsibility to make sure that they fully understand the problem and solution – just giving someone code is worse than no help at all.
- Copying solutions from the Web, especially from notorious “do my work for a bounty” sites, has been detected in the past and dealt with appropriately under this policy. Yes, I too can use online search tools - just as well as anyone in this field, but probably better than most!
- The bottom line: if you are not sure how to approach a problem, or are stuck at some point, PLEASE SEE ME FIRST FOR HELP.

Unless specified otherwise, all written exams are closed book (this includes notes, smartphones, etc.). Any suspected cheating on an exam will result in failure for the course.

I strongly encourage you to discuss any topic and/or share ideas with your peers. That's the way good science ought to happen. As a professional though, you should acknowledge any significant discussions in your homework/projects. However, when the time comes to write the homework, such discussions are no longer appropriate. The solution or program must be your own inspiration (although you may ask the instructor for help in writing or debugging). DO NOT COPY ANOTHER PERSON'S HOMEWORK UNDER ANY CIRCUMSTANCES. To do so is a clear violation of ethical/academic standards and will result in loss of credit for any assignment and possible course failure.

For further information, see the section on Academic Dishonesty in the *Undergraduate Bulletin*. See also the *CSIS Acceptable Use Policy for Lab Standards*.

## **Classroom Etiquette**

Your fellow students deserve an environment without disruptions to learning. Examples include:

- Conversing during lecture
- Printing in labs during lectures
- Texting/social media
- Web surfing
- Cell phone use (please change ringtones to silent, and exit the classroom for emergency calls)
- Eating or drinking (prohibited in our labs)
- Exhibiting signs you are sick (please stay home for our collective well-being)

***If you engage in these activities repetitively, you will be kindly asked to leave.***

On the other hand, asking questions during lectures is very strongly encouraged. I frequently pause to confirm that everyone understands the concepts being discussed. If you are confused about a topic, chances are that many other people are as well! If I do not provide an opportune time for you to ask your question, **please feel free to interrupt me** before I continue.

## **Incomplete Grades**

Incomplete grades are strongly discouraged. However, an incomplete grade may be assigned under the following conditions:

- The student must request in writing that an incomplete grade be assigned.
- The student's previous work in the course must have been satisfactory.
- The reason(s) must be beyond the student's control, and deemed justifiable by the instructor.

Insufficient time is NOT a justification for an incomplete. Also note that all incompletes must be made up within two months; otherwise, they automatically revert to an F.

## **Airborne Pathogen Safety Statement**

If you are feeling unwell, I strongly encourage you to stay home, and get notes from a classmate. If you are observably exhibiting symptoms of airborne viruses (such as coughing and/or sneezing), out of consideration for your peers, I will kindly ask you to leave class and go home. As attendance is not strictly mandatory, I do not require a physician's note, except in cases where an exam or project deadline would be missed without making a prior arrangement to fulfill these obligations. As long as I have prior notice, that will not be necessary – and you will find that I'm quite reasonable and flexible with scheduling, so that you can fulfill the requirements of the course.

*The Instructor reserves the right to revise the above flexibly and with notice, based on their own discretion.*