

AMIS 4630 - Foundations of Business Information Systems

Semester: Spring 2024

Class Day/Time: 5:45 – 7:05 PM

Location: Mason Hall 405

Instructor:	Chad Thomas	E-mail:	thomas.396@osu.edu
Office Hours / Location: By appointment			

Course Description: Technical foundations in programming interactive business information systems.

Course Pre-Requirements: AMIS 2300 (212), CSE 2123 (214), BusMgt 2320 (330), 2321 (331), and BusMHR 2292 (BusAdm 499.01). Not open to students with credit for 532.

Learning Outcomes: Students will gain a real-world perspective on the software development processes and tools organizations use to create business systems. This course will focus on design, architecture, technology, and infrastructure aspects of systems. **This is a technical course.**

Requirements for each form of graded component. Failing to follow these will represent academic misconduct. See below.

Independent Work [N]: Strictly non-collaborative, original, individual work. You may discuss this assignment only with your instructor. Discussions with any other individuals, either in person or electronically (e.g., Chegg, GroupMe, etc.), are strictly prohibited.

Collaboration Required [C]: An explicit expectation for collaboration among students enrolled in this class (e.g., defined group work).

Collaboration Optional [O]: Students are permitted, but not required, to discuss the assignment or ideas only with other students enrolled in this class. However, all submitted work must be the student's own original and individual creation.

Grading and Evaluation:

Assignments	Class %	Type
10 Exercises	30%	O
8 Labs	40%	C
Midterm Exam*	10%	N
Final Exam*	20%	N

* subject to class vote

Academic Conduct: If a student is suspected of, or reported to have committed academic misconduct in this course, I am obligated by University Rules to report my suspicions to COAM. If you have any questions about the above policy or what constitutes academic misconduct in this course, please contact me. See OSU Prohibited Conduct – [Section 3335-23-04\(A\)](#)

Design/Goals: Throughout much of your academic career, you have learned specific topics like ‘programming in Java’ or ‘database warehouses’. The goal of this course is to bring that all together by building a prototype of a system.

Upon completion of this course, you will gain a deeper appreciation for the people, processes, and tools that

- Prioritize what systems and features to build and buy
- Design how systems look, feel, and behave
- Create systems and perform ongoing updates and maintenance
- Test systems against defects
- Secure systems from unwanted and malicious users
- Deploy systems to infrastructure in the cloud
- Operate systems to ensure appropriate uptime

How This Course Works:

- **Mode of delivery:** The in-classroom portion of the course is a mix of lectures and workshops. Lectures will cover instructional content which may appear on exams. The workshops will cover real-world topics that may deepen your understanding but will not cover examination material. Students may skip workshop to work on labs and exercises.
- **Group work:** Some of the course work will be completed and graded in groups. The instructor will assign students to groups in the second week of class. The group will be responsible for aligning collaboration times and workload distribution.
- **Course Communication:** Carmen will be used for all announcements and messages to students, please ensure that you receive messages sent through Carmen's email system.
- **Pace of online activities:** This is a fast-moving course. Students are expected to keep pace with course deadlines but may schedule their efforts freely within that time frame.
- **Credit hours and work expectations:** This is a 3 credit-hour course. According to [Ohio State bylaws on instruction \(go.osu.edu/credithours\)](https://go.osu.edu/credithours), students should expect around 3 hours per week of time spent on direct instruction (instructor content and Carmen activities, for example) in addition to 6 hours of homework (reading and assignment preparation, for example) to receive a grade of B average.
- **Participating in online activities:** Research shows regular participation is one of the highest predictors of success. With that in mind, I have the following expectations for everyone's participation:
 - **Participating in online activities for attendance: at least once per week**
You are expected to log in to the course in Carmen every week. During most weeks you will probably log in many times. If you have a situation that might cause you to miss an entire week of class, discuss it with me as *soon as possible*.
 - **Zoom meetings and office hours: optional**
All live, scheduled events for the course, including my office hours, are optional. I will post recordings of synchronous sessions for those who cannot attend.
 - **Participating in discussion forums: two or more times per week**
As part of your participation, each week you can expect to post at least twice as part of our substantive class discussion on the week's topics.
- **Attendance Policy:** Any student who fails to attend without giving prior notification to the instructor will be dis-enrolled after the third instructional day of the term, the first Friday of the term, or the second scheduled class meeting of the course, whichever occurs first, per OSU attendance policy.
- **Instructor feedback and response times:** I am providing the following list to give you an idea of my intended availability throughout the course. Remember that you can call [614-688-4357 \(HELP\)](tel:614-688-4357) at any time if you have a technical problem.
 - **Preferred contact method:** If you have a general question, please contact me *first* through the course Discussion board in Carmen. If you have a question that is personal or private in nature, please contact me at my Ohio State email address. I will reply to emails within **24 hours on days when class is in session at the university**.
 - **Class announcements:** I will send all important class-wide messages through the Announcements tool in Carmen Canvas. Please check [your notification preferences \(go.osu.edu/canvas-notifications\)](https://go.osu.edu/canvas-notifications) to ensure you receive these messages.

- **Discussion board:** I will check and reply to messages in the discussion boards regularly.
- **Grading and feedback:** For assignments submitted before the due date, I will try to provide feedback and grades within **seven days**. Assignments submitted after the due date may have reduced feedback, and grades may take longer to be posted.

Exercise Details: Exercises are designed to give additional depth in understanding course content. They will be a mix readings, research, and activities. Exercises are low-risk ways for you to validate your understanding and prepare you for midterm and final exams. Students are free to collaborate and complete the exercises in small groups but be sure that you are understanding things on an individual level.

Lab Details: Labs are to be completed and graded in groups. Labs progressively build on each other, and groups are encouraged to complete them in a timely manner. Each group will be responsible for determining collaboration times, workload distribution, and rules of engagement.

Exam Details: There will be one midterm exam and one final exam. The exams are the only part of the course where you are explicitly evaluated as an individual. It is imperative that you adequately prepare and complete the exams with honor and integrity. Each exam will be given via Carmen in the Quizzes section.

Testing Policy: There are no make-ups for exams. Missed exams will be recorded as a "0". Missed exams can only be made-up in extreme cases (e.g., death of family member, personal hospitalization, etc.) with proper documentation (e.g., a physician's note, ER paperwork, obituary, etc.). Each decision of potentially allowing a make-up exam is made by the instructor on a case-by-case basis. Additionally, you **MUST** contact the instructor (insert instructor's email) as soon as you know of a potential problem or conflict with an exam date. Alternative methods (e.g., oral exam, essay) of testing may be used for make-up exams. If you are experiencing an extreme situation or emergency, please attempt to notify the instructor (insert instructor's email) ASAP.

Grading Scale:

A	>= 93%
A-	90-92.99%
B+	87-89.99%
B	83-86.99%
B-	80-82.99%
C+	77-79.99%
C	73-76.99%
C-	70-72.99%
D	60-69.99%

Discussion and Communication Guidelines:

The following are my expectations for how we should communicate as a class. Above all, please remember to be respectful and thoughtful.

- **Tone and civility:** Let's maintain a supportive learning community where everyone feels safe and where people can disagree amicably. Remember that sarcasm doesn't always come across online. I will provide specific guidance for discussions on controversial or personal topics.
- **Backing up your work:** Consider putting all of your course related work in GitHub, where you can edit and save your work, and then share into the Carmen discussion.
- **Remote sessions:** During any Zoom sessions I ask you to use your real name and a clear photo of your face in your Carmen profile. During our full-group lecture time, you may turn your camera off if you choose. When in breakout rooms or together small-group discussions, having cameras and mics on as often as possible will help you get the most out of activities. You are always welcome to use the [free, Ohio State-themed virtual backgrounds](https://go.osu.edu/zoom-backgrounds) (go.osu.edu/zoom-backgrounds). Remember that Zoom and the Zoom chat are our classroom space where respectful interactions are expected.]

Course technology:

For help with your password, university email, Carmen, or any other technology issues, questions, or requests, contact the Ohio State IT Service Desk. Standard support hours are available at ocio.osu.edu/help/hours, and support for urgent issues is available 24/7.

- **Self-Service and Chat support:** ocio.osu.edu/help
- **Phone:** 614-688-4357(HELP)
- **Email:** servicedesk@osu.edu
- **TDD:** 614-688-8743

Baseline technical skills for online courses

- Basic computer, Word, Excel, PowerPoint
- Navigating Carmen: for questions about specific functionality, see the [Canvas Student Guide](#).

Required Technology skills specific to this course

- [CarmenZoom virtual meetings](#)
- [Recording a slide presentation with audio narration](#)
- [Recording, editing, and uploading video](#)

Required equipment

- Computer: current Mac (OS X) or PC (Windows 7+) with high-speed internet connection
- Webcam: built-in or external webcam, fully installed and tested
- Microphone: built-in laptop or tablet mic or external microphone
- Other: a mobile device (smartphone or tablet) or landline to use for BuckeyePass authentication

Required software: [Microsoft Office 365](#): Free Microsoft Office 365 ProPlus through Microsoft's Student Advantage program. Full instructions for downloading and installation can be found at go.osu.edu/office365help.

Carmen access: You will need to use [BuckeyePass](#) multi-factor authentication to access your courses in Carmen. To ensure that you are able to connect to Carmen at all times, it is recommended that you take the following steps:

- Register multiple devices in case something happens to your primary device. Visit the [BuckeyePass - Adding a Device](#) help article for step-by-step instructions.
- Download the [Duo Mobile application](#) to all of your registered devices for the ability to generate one-time codes in the event that you lose cell, data, or Wi-Fi service.

If none of these options will meet the needs of your situation, you can contact the IT Service Desk at 614-688-4357 (HELP) and IT support staff will work out a solution with you.

Academic Conduct:

Academic integrity is essential to maintaining an environment that fosters excellence in teaching, research, and other educational and scholarly activities. Thus, The Ohio State University and the Committee on Academic Misconduct (COAM) expect that all students have read and understand the University's Code of Student Conduct, and that all students will complete all academic and scholarly assignments with fairness and honesty. Students must recognize that failure to follow the rules and guidelines established in the University's Code of Student Conduct (<https://trustees.osu.edu/bylaws-and-rules/code>), *this syllabus, instructions posted in Carmen, and instructions given in class/lectures, including any sharing, posting, or distribution of any assignment, assessment activity, or solution via any method* may constitute Academic Misconduct (<https://oaa.osu.edu/academic-integrity-and-misconduct>)

The Ohio State University's Code of Student Conduct (Section 3335-23-04) defines academic misconduct as: Any activity that tends to compromise the academic integrity of the University, or subvert the educational process. Examples of academic misconduct include (but are not limited to) plagiarism, collusion (unauthorized collaboration), copying the work of another student, and possession of unauthorized materials during an examination. Ignorance of the University's Code of Student Conduct is never considered an excuse for academic misconduct, so I recommend that you review the Code of Student Conduct and, specifically, the sections dealing with academic misconduct.

If I suspect that a student has committed academic misconduct in this course, I am obligated by University Rules to report my suspicions to the Committee on Academic Misconduct. If COAM determines that you have violated the University's Code of Student Conduct (i.e., committed academic misconduct), the sanctions for the misconduct could include a failing grade in this course and suspension or dismissal from the University. *If you have any concerns or questions about the above policy or what constitutes academic misconduct in this course, please contact me before taking individual action.*

Other sources of information on academic misconduct (integrity) to which you can refer include:

- [Committee on Academic Misconduct](https://go.osu.edu/coam) (go.osu.edu/coam)
- [Ten Suggestions for Preserving Academic Integrity](https://go.osu.edu/ten-suggestions) (go.osu.edu/ten-suggestions)
- [Eight Cardinal Rules of Academic Integrity](https://go.osu.edu/cardinal-rules) (go.osu.edu/cardinal-rules)

Disability Services:

The university strives to make all learning experiences as accessible as possible. In light of the current pandemic, students seeking to request COVID-related accommodations may do so through the university's [request process](#), managed by Student Life Disability Services. If you anticipate or experience academic barriers based on your disability (including mental health, chronic, or temporary medical conditions), please let me know immediately so that we can privately discuss options. To establish reasonable accommodations, I may request that you register with Student Life Disability Services. After registration, make arrangements with me as soon as possible to discuss your accommodations so that they may be implemented in a timely fashion. **SLDS contact information:** slids@osu.edu; 614-292-3307; slids.osu.edu; 098 Baker Hall, 113 W. 12th Avenue

Accessibility of Course Technology:

This online course requires use of CarmenCanvas (Ohio State's learning management system) and other online communication and multimedia tools. If you need additional services to use these technologies, please request accommodations as early as possible.

- [CarmenCanvas accessibility](https://go.osu.edu/canvas-accessibility) (go.osu.edu/canvas-accessibility)
- Streaming audio and video
- [CarmenZoom accessibility](https://go.osu.edu/zoom-accessibility) (go.osu.edu/zoom-accessibility)

Mental Health:

As a student you may experience a range of issues that can cause barriers to learning, such as strained relationships, increased anxiety, alcohol/drug problems, feeling down, difficulty concentrating and/or lack of motivation. These mental health concerns or stressful events may lead to diminished academic performance or reduce a student's ability to participate in daily activities. No matter where you are engaged in distance learning, The Ohio State University's Student Life Counseling and Consultation Service (CCS) is here to support you. If you find yourself feeling isolated, anxious or overwhelmed, [on-demand mental health resources](https://go.osu.edu/ccsondemand) (go.osu.edu/ccsondemand) are available. You can reach an on-call counselor when CCS is closed at [614- 292-5766](tel:614-292-5766). **24-hour emergency help** is available through the [National Suicide Prevention Lifeline website](https://www.suicidepreventionlifeline.org) (suicidepreventionlifeline.org) or by calling [1-800-273-8255\(TALK\)](tel:1-800-273-8255). [The Ohio State Wellness app](https://go.osu.edu/wellnessapp) (go.osu.edu/wellnessapp) is also a great resource.

Harassment, Discrimination, & Sexual Misconduct Free Environment:

The Ohio State University is committed to building and maintaining a community to reflect diversity and to improve opportunities for all. All Buckeyes have the right to be free from harassment, discrimination, and sexual misconduct. Ohio State does not discriminate on the basis of age, ancestry, color, disability, ethnicity, gender, gender identity or expression, genetic information, HIV/AIDS status, military status, national origin, pregnancy (childbirth, false pregnancy, termination of pregnancy, or recovery therefrom), race, religion, sex, sexual orientation, or protected veteran status, or any other bases

under the law, in its activities, academic programs, admission, and employment. Members of the university community also have the right to be free from all forms of sexual misconduct: sexual harassment, sexual assault, relationship violence, stalking, and sexual exploitation.

To report harassment, discrimination, sexual misconduct, or retaliation and/or seek confidential and non-confidential resources and supportive measures, contact the Office of Institutional Equity:

1. Online reporting form at equity.osu.edu,
2. Call 614-247-5838 or TTY 614-688-8605,
3. Or email equity@osu.edu

The university is committed to stopping sexual misconduct, preventing its recurrence, eliminating any hostile environment, and remedying its discriminatory effects. All university employees have reporting responsibilities to the Office of Institutional Equity to ensure the university can take appropriate action:

- All university employees, except those exempted by legal privilege of confidentiality or expressly identified as a confidential reporter, have an obligation to report incidents of sexual assault immediately.
- The following employees have an obligation to report all other forms of sexual misconduct as soon as practicable but at most within five workdays of becoming aware of such information: 1. Any human resource professional (HRP); 2. Anyone who supervises faculty, staff, students, or volunteers; 3. Chair/director; and 4. Faculty member.

Copyright for Instructional Materials:

The materials used in connection with this course may be subject to copyright protection and are only for the use of students officially enrolled in the course for the educational purposes associated with the course. Copyright law must be considered before copying, retaining, or disseminating materials outside of the course.

Course Schedule:

Week	Date	Topics
1	1/9	Intro & Course Overview
1	1/11	0 - Business Systems
2	1/16	
2	1/18	Workshop: Setting Up Your Environment
3	1/23	1.1 Process for Business System Lifecycle
3	1/25	1.2 Sociotechnical Aspects of Business Systems
4	1/30	Workshop: GitHub
4	2/1	2.1 Design Thinking & Systems Thinking
5	2/6	2.2 Principles of Architecture
5	2/8	Workshop: Personas, Journey Maps, Systems Thinking
6	2/13	3.1 Technology Impact
6	2/15	3.2 JS / TS / React
7	2/20	3.3 .NET and C#
7	2/22	No Class
8	2/27	Workshop: TypeScript and C#
8	3/1	4.1 Web API's
9	3/6	4.2 Data and Data Access
9	3/8	Workshop: Designing API's & Querying Data
Spring	3/13	
Break	3/15	
10	3/20	5.1 Quality Assurance and Testing Business Systems
10	3/22	Workshop: Test Automation and TDD
11	3/27	5.2 Securing Business Systems
11	3/29	Workshop: Static Code Analysis, User Access
12	4/3	6.1 Cloud Infrastructure
12	4/5	6.2 Cloud Architecture
13	4/10	Workshop: Infrastructure Automation
13	4/12	7.1 Operations and DevOps
14	4/17	7.2 Monitoring and Observability
14	4/19	Workshop: CI/CD Pipelines