CSIS-201: SYSTEM ANALYSIS AND DESIGN

Effective Term
Fall 2026

BOT Approval Date
10/09/2025

Discipline
CSIS - Computer Sci/Info Systems
Course Number
201

Course Title
System Analysis and Design

Short Title
System Analysis & Design

Credit Status (CB 04)
D - Credit - Degree applicable

Units

Lecture Units
3.00

Total Units
3.00

Hours

Lecture Contact Hours
48-54
Out of Class Hours Lecture
96-108

Total Contact Hours
48 - 54

Total Out of Class Hours
96 - 108

Total Student Learning Hours
144 - 162

Distance Education
Yes

Distance Education

Distance Education Type
Both Fully Online and Hybrid Online

Fully Online Delivery Requirements:
a. Students must be notified via the college schedule of classes and the syllabus for the class if proctored tests are required for this course
b. Any planned face-to-face meetings, such as an orientation or study session, must be optional

c. The MSJC curriculum committee requires the use of accessible, asynchronous discussion as a component of every fully online course

Are you using publisher content?

No

Regular Substantive Interaction

Instructor-to-student, student-to-student, and student-to-content contact shall be distributed in a manner that will ensure regular substantive interaction (RSI) is maintained not only weekly but also for the duration of the course. Instructor interactions should be equivalent in time, quality and consistency to the engagement students would receive in a face-to-face course—for example, through announcements, discussion participation, personalized feedback, video messages, or other instructional communications. Instructors are expected to be responsive to student inquiries within a 24-72 hour time frame excluding holidays. RSI will be maintained through a variety of methods: • Orientation - Students must be oriented to the online and face-to-face portions at the start of the course. • Announcements - Announcements using the course management system must be posted at least weekly to keep students current on course events, due dates, materials, etc. • Discussion Forums - Content-related discussion forums within the designated CMS will include appropriate instructor participation and will be initiated and maintained, with timely feedback provided. Instructors are required to monitor the discussions and related activities to provide guidance and direction. Open-ended discussion boards may be used to further learning and interaction. • MSJC Communication – Instructor will use MSJC-administered communication tools (such as email or the designated CMS communication tools) to regularly communicate with and provide ease of access to students. • Timely Feedback - Timely feedback on student work will be provided by the instructor, which may include comments and/or rubrics, within the Grades area of the designated CMS. • Scheduled Meetings – Hybrid and synchronous courses will meet at regularly scheduled times. ADA Compliance - All course interactions and content must be designed with accessibility in mind and meet ADA requirements.

Catalog Description

This course introduces the basic concepts and principles of information systems analysis and design within the content of an enterprise information architecture. Various systems development lifecycles will be studied and students will apply a systems methodology in modeling an information system. Project management techniques specific to information technology projects will also be covered.

Codes

TOP Code (CB 03)

0707.30* - *Computer Systems Analysis

CIP Code

11.0501 - Computer Systems Analysis/Analyst.

Repeatability Code

No

Grading Option

Letter grade OR P/NP

Minimum Qualifications

Minimum Qualifications	And/Or
Computer Information Systems	End

GE Information

Check GE Types Requested

AA/AS D2 - Communication & Analytical Thinking

Learning Objectives

Learning Objectives

Learning Objective
1. Recognize that a system consists of : hardware, software, data, procedures, and people within a global environment.
2. Apply systems concepts in the investigation, evaluation, and resolution of information technology problems.

3.Synthesize user perspectives and architectural elements to demonstrate how they contribute to an enterprise information architecture.

4.Critique the stages of the systems development life cycle by analyzing the activities associated with each stage.

5. Analyze existing processes based on interviewing, observation, documentation, analysis and other similar methods.

6. Prepare detailed computer-based specifications that satisfy the requirements specified during systems analysis.

7. Analyze technical information, as well as listen effectively to, communicate orally with, and prepare memos, reports and documentation for a wide range of audiences.

8. Investigate and assess new sources of information and learning opportunities to stay abreast of emerging information and computing technologies.

9. Formulate a career plan by connecting program-related pathways with required qualifications and/or professional certifications.

10. Appraise the integration of diversity, equity, and inclusion principles across the stages of the systems development life cycle by evaluating case studies and proposing strategies for more inclusive system design.

11. Evaluate and integrate industry reference models , best practices to enhance process designs, strategically manage and mitigate IT risks.

Learning Outcome Information

Course Learning Outcomes

Learning Outcome
1. Students will identify the stages of the systems development life cycle and the activities that occur in each stage.
2. Students will Model entities in an ER diagram based on a problem/case scenario
3. Students will model attributes in an ER diagram based on a problem/case scenario.
4. Students will model relationships in an ER diagram based on a problem/case scenario.
5. Students will Build a context diagram based on a problem/case scenario.

Content

Course Lecture Content

1. Context of Systems Development Projects
   a. Information systems building blocks
   b. Information systems development
   c. Project management overview
2. Systems Analysis
   a. Methodologies
   b. Overview of major phases
3. Requirements Analysis
   a. Methodologies
   b. Overview of major phases
4. Use-Cases
   a. Methodologies
   b. Overview of major phases
5. Data Modeling and Analysis
   a. Methodologies
   b. Overview of major phases
6. Process Modeling
   a. Methodologies
   b. Overview of major phases
7. Feasibility Analysis
   a. Concepts
   b. Operational
   c. Technical
   d. Schedule
   e. Economic
8. Systems Design

a. Methodologies
b. Overview of major phases
9. Application Architecture
a. Methodologies
b. Modeling the architecture
10. Database Design
a. Overview and concepts
b. Process and techniques
11. Output Design
a. Overview and concepts
b. Process and techniques
12. Input Design
a. Overview and concepts
b. Process and techniques
13. User Interface Design
a. Overview and concepts
b. Process and techniques
14. System Operations and Support
a. Overview and concepts
b. System and application logs
c. Maintenance
d. Support techniques
15. Life-Long Learning
a. Web resources
b. Relevant publications
c. Other educational opportunities
16. Career Options
a. How this course relates to standard job classifications
b. Relation to industry and vendor certification paths
c. Overview of technical skills
d. Overview of soft skills
17. Examine the role of diversity, equity, and inclusion (DEI) in the systems development life cycle.
a. Emphasis on how oversight of diverse user needs can impact design, testing, and deployment outcomes.

Methods of Instruction

Method

Discussion

Integration

Weekly discussion will be conducted as a means for students to better understand the requirements discovery activities along with the benefits and costs associated with the various discovery techniques. In addition, model relationships using ER diagram will be discussed as a means to solve system problems.

DE Adaptations for MOI

Weekly discussions will be conducted through the course management system (CMS), utilizing its discussion tools to support accessibility for all students. Students will explore the requirements discovery activities and analyze the benefits and costs of different discovery techniques. To foster inclusivity, each discussion will include closed captions and be compatible with screen readers, adjustable text sizes, and keyboard navigation. Students will engage in discussions about model relationships using ER diagrams as tools for solving system problems, encouraging all participants to interact and share diverse perspectives. Feedback on contributions will be provided within one week through the CMS, ensuring all students receive timely, accessible guidance to enhance their understanding of the material.

Method

Lecture

Integration

Lecture, with supporting visual materials (presentation or multimedia) will introduce conceptual and practical skills such as systems development life cycle and systems methodologies along with activities that occur at each stage.

DE Adaptations for MOI

Text-based lectures with supporting visual materials, including accessible media, will introduce conceptual and practical skills, such as the systems development life cycle and systems methodologies, alongside activities specific to each stage. All materials will be shared within the CMS or through accessible links to websites that demonstrate these concepts and skills. Materials will be designed with accessibility in mind, featuring closed captions for videos, alternative text for images, screen reader compatibility, and adjustable text sizes to ensure full participation for all students.

Method

Group Projects

Integration

Pair and small-group discussions will be used as a means to explore system installation strategies and identify the System Development Life Cycle (SDLC) stages along with the key activities that occur within each phase. To integrate Diversity, Equity, and Inclusion (DEI) considerations, students will analyze real-world case studies, such as Microsoft Kinect's facial recognition issue, to assess how oversights in system design and testing can lead to biased or ineffective technology.

DE Adaptations for MOI

Pair and small-group discussions will be facilitated through the course management system (CMS) using virtual breakout rooms or discussion boards to support collaborative exploration of system installation strategies and the identification of system development life cycle stages and associated activities. To ensure accessibility, all group work will be conducted using tools that support screen reader compatibility, keyboard navigation, and closed-captioning options for any audio or video components. Clear instructions and structured discussion prompts will guide students, while accessible resources within the CMS will support an inclusive, equitable group learning experience for all participants.

Methods of Evaluation

Method

Homework

Integration

Weekly homework assignments that demonstrate mastery of the principles of structured and O-O analysis and modeling will be given and collected via the Assignments tool within the CMS. Homework assignments will be evaluated on completeness (are each of the core elements in the case study identified and included in the model), correctness (are the appropriate symbols being used and is the model/diagram syntactically correct), and documentation/presentation (spelling, grammar, formatting, and is the technical narrative written at a level appropriate for the user/reader).

DE Adaptations for MOE

Weekly homework assignments, designed to reinforce mastery of structured and object-oriented (O-O) analysis and modeling principles, will be submitted through the Assignments tool in the course management system (CMS). Assignments will be evaluated on:

Completeness: Ensuring all core elements in the case study are identified and included in the model.
Correctness: Verifying the appropriate symbols are used and that the model or diagram is syntactically accurate.
Documentation/Presentation: Assessing spelling, grammar, formatting, and whether the technical narrative is clear and accessible for the intended user or reader.
To support accessibility, all assignment instructions, evaluation rubrics, and feedback will be available in formats compatible with screen readers, with options for enlarged text and alternative text for images. Students will receive feedback within the CMS, using accessible tools that support diverse needs, to ensure a clear understanding of performance, strengths, and areas for improvement.

Method

Other

Integration

Participation and guided discussion will be shared via the CMS Discussions area as a means to measure student's understanding of project management and TQM principles. Students will be evaluated on their contributions, suitability (applicability to the topic at hand), and content. In regard to written participation activities, evaluation might also consider completeness (were all 'talking points' [Quality awards, Demming, Bldrige, PDCA, project management body of knowledge, PMBOK, …] addressed in the response) and presentation (spelling, grammar, and format). In addition, the use of ER diagrams that demonstrates knowledge of entities, attributes, and relationships in the context of an ER diagram will be demonstrated via sharing within the CMS Discussions area.

DE Adaptations for MOE

Participation and guided discussions will take place through the CMS Discussions area, where students will demonstrate their understanding of project management and Total Quality Management (TQM) principles. Evaluations will focus on contributions, relevance (applicability to the topic), and depth of content. For written participation activities, evaluations will also consider completeness, ensuring all key "talking points" (e.g., Quality Awards, Deming, Baldrige, PDCA, PMBOK) are thoroughly addressed, as well as presentation (spelling, grammar, and format).

Students will also demonstrate their understanding of ER diagrams by sharing diagrams within the CMS, which will be assessed for their accurate depiction of entities, attributes, and relationships. To support accessibility, all discussion prompts, instructions, and feedback will be compatible with screen readers, and diagrams will include alternative text where applicable. Structured feedback will be provided within one week via the CMS, allowing students to access and engage with their evaluations in a clear, accessible format.

Method

Oral Presentation

Integration

A technical report and presentation on an elective topic of the student's choosing (and with instructor approval) will be required. Presentations and reports will be evaluated based on content, including depth of coverage, relevance of ER diagrams and illustrations, appropriate use of examples, and demonstration of critical understanding of the topic; suitability, including relevance of topic, written to an appropriate level for the class, inclusion of sufficient new material, and application to real-world system design; presentation, including spelling, grammar, formatting, and clarity of oral presentation; and Diversity, Equity, and Inclusion (DEI), including evidence that the student has applied insights from the DEI assignment (e.g., the Kinect case) by recognizing how overlooking diverse user needs can affect the SDLC, and by articulating how inclusive practices in requirements gathering, design, testing, or maintenance could strengthen their chosen system or topic.

DE Adaptations for MOE

A technical report and presentation on an approved elective topic of the student's choosing will be required and shared within the Discussions area of the CMS. Presentations and reports will be evaluated based on:

Content: Depth of coverage, relevance of ER diagrams and illustrations, and appropriate use of examples.
Suitability: Relevance of the topic, appropriateness for the class level, and inclusion of sufficient new material.
Presentation: Accuracy in spelling, grammar, and formatting.
To ensure accessibility in Distance Education, students will be encouraged to use accessible formats for all materials, including closed-captioned video presentations or transcriptions of audio content. Any ER diagrams and illustrations should include alternative text or descriptions to ensure screen reader compatibility. Structured feedback will be provided within the CMS, allowing students to review and engage with their evaluations in an accessible format, supporting clarity and understanding for all participants.

Method

Exams/Tests

Integration

Chapter exams will be administered to assess mastery of the course objectives. These will include multiple-choice questions to evaluate understanding of information architecture concepts, as well as case-based or narrative problems focused on data modeling and dataset design. Additionally, students will be required to identify entities represented in an ER diagram, demonstrating their proficiency in data modeling.

DE Adaptations for MOE

Exams will be administered within the CMS to assess mastery of course objectives. These may include multiple-choice questions to evaluate understanding of information architecture concepts, case-based or narrative questions on data modeling and dataset design, and tasks requiring the identification of entities in an ER diagram.

To ensure accessibility, exams will be compatible with screen readers, and questions will include alternative text for diagrams and visuals where applicable. Time accommodations and adjustable font sizes will also be available within the CMS to support diverse learning needs, ensuring all students can demonstrate their knowledge in an inclusive environment.

Assignments

Assignment Type

Writing

In-class and/or outside of class

In-class
Outside of class

Formative or Summative

Formative

Assignment

Throughout the course, you will undertake a series of projects focusing on various aspects of Systems Analysis and Design. These projects are designed to provide hands-on experience in analyzing, designing, and implementing information systems, preparing you for real-world scenarios and challenges they may encounter in their careers.

Example Project: You have been assigned to develop a DFD for an order processing system. By interviewing users, you learn there is an entity called CUSTOMER, three processes called HANDLE ORDER, GENERATE INVOICE, and HANDLE PAYMENT, and two data stores called PRICE FILE
and INVOICE FILE. Now you must identify the data flows and create the DFD.When you interviewed the users, you identified ten separate data flows, which you listed in a Data Flow Information table. The table
shows the data flow description, name, where the data comes from, and where it goes.
a. Draw symbols for the entity, the three processes, and the two data stores that you identified. You can use a software application, or just a pencil and paper.
b. Refer to the Data Flow Information Table to connect the symbols properly and label the data flows. You might want to print the table for easy reference.

Grading and Feedback: The grading for this project will focus on the accuracy and comprehensiveness of the developed Data Flow Diagram (DFD) for the order processing system. Evaluation will consider the correct depiction of entities, processes, data stores, and data flows as identified through user interviews and documented in the Data Flow Information Table. Attention will be given to the clarity and readability of the diagram, ensuring that symbols and connections accurately represent the system's functionality and data flow paths. Feedback provided will aim to reinforce understanding of Systems Analysis and Design principles, emphasizing areas of improvement in diagram organization, labeling, and alignment with user requirements.

How assignment will be adapted in online format

Project guidelines and instructions will be provided through the course management system, accessible to students at their convenience. Students will utilize online collaboration tools to work in teams or independently, depending on the nature of the project. Virtual meetings and discussions will be organized to facilitate communication and collaboration among students and instructors. Progress updates and submissions will be made through the course management system, allowing for seamless tracking of project milestones and feedback delivery. Instructors will be available for virtual office hours or synchronous online sessions to provide guidance, answer questions, and offer support throughout the duration of the projects.

Assignment Type

Writing

In-class and/or outside of class

In-class
Outside of class

Formative or Summative

Summative

Assignment

Complete a final project that demonstrates your understanding of Systems Analysis and Design concepts and your ability to apply these concepts in a real-world scenario. The final project will involve analyzing, designing, and presenting a system solution based on the System Development Life Cycle (SDLC). You will identify a problem scenario, conduct requirements gathering, create system specifications, design the system architecture, implement a prototype or model, and present your findings and proposed solution.

Example Final Project: Analyze the current registration process at a fictional university and design a new system using the System Development Life Cycle (SDLC). This project will involve identifying pain points in the current registration process, conducting interviews and surveys to gather requirements from stakeholders, creating system specifications including use cases and data models, designing the system architecture, implementing a prototype or mock-up, and presenting your proposed solution to stakeholders.

Grading and Feedback: The assessment will encompass the thoroughness and accuracy of the problem analysis, requirements gathering, and system design phases, evaluating the students' ability to effectively apply the System Development Life Cycle (SDLC) principles. Furthermore, emphasis will be placed on the quality and coherence of the project report, ensuring it is comprehensive, well-structured, and meticulously documented. For projects necessitating a presentation, clarity, confidence, and the capability to articulate the proposed solution will be evaluated. Feedback will be provided with objectivity, ensuring recognition of the diverse backgrounds and perspectives students bring to their projects, fostering an environment conducive to constructive learning and growth.

How assignment will be adapted in online format

The final project will be submitted through the course management system, along with any supporting documentation and files. Students will be encouraged to collaborate and discuss their projects with their peers via discussion boards and video conferencing tools. Instructors will provide feedback and guidance during the project development process, and students will receive a comprehensive evaluation of their final submission, including feedback on both technical and documentation aspects.

Assignment Type

Reading

In-class and/or outside of class

Outside of class

Formative or Summative

Formative

Assignment

Reading: "Kinect has problems recognizing dark-skinned users?" by Brendan Sinclair

Background: The reported challenges with Microsoft's Kinect, particularly its facial recognition feature failing to accurately identify darker-skinned users during testing, serve as a poignant illustration of the critical intersection between Diversity, Equity, and Inclusion (DEI) principles and the System Analysis and Design (SAD) process. Within the realm of SAD, which encompasses the systematic analysis, design, and implementation of systems to meet specified requirements, understanding and addressing diverse user needs are paramount. The issues faced by GameSpot employees underscore the potential ramifications of overlooking diversity considerations throughout the development lifecycle. From requirements gathering to design decisions and testing methodologies, inclusive practices must be integrated into every stage of system development to ensure equitable access and usability for all users. This instance highlights the necessity for system analysts to advocate for inclusive design principles and advocate for diverse user representation, ultimately leading to the creation of systems that serve all users effectively, irrespective of their characteristics or backgrounds.

In this assignment, you are a system analyst tasked with evaluating the development process of Microsoft's Kinect facial recognition feature, with a particular focus on the Diversity, Equity, and Inclusion (DEI) aspects. Your objective is to identify the stage(s) of the System Development Life Cycle (SDLC) where the issue of the facial recognition feature not working properly with some darker-skinned users may have originated and provide recommendations for improvement.
Research and gather information about the reported issue with Microsoft's Kinect facial recognition feature, including any official statements, user reports, or media coverage.
Briefly describe the System Development Life Cycle (SDLC) and its stages (e.g., Planning, Analysis, Design, Implementation, Testing, Deployment, and Maintenance).
For each stage of the SDLC, analyze and discuss the potential reasons why the issue with darker-skinned users may have arisen or gone unaddressed. Consider factors such as:
a. Planning: Did the planning process adequately consider diverse user groups and their needs?

b. Analysis: Was the requirement for inclusivity and diversity properly captured and analyzed?
c. Design: Were inclusive design principles and diverse user representations considered? d. Implementation: Were appropriate algorithms, datasets, and testing methods used to ensure inclusivity?
e. Testing: Were diverse user groups adequately represented in the testing process?
f. Deployment: Were potential biases or limitations properly communicated to users?
g. Maintenance: How were user feedback and issues related to diversity and inclusivity addressed?
Based on your analysis, identify the stage(s) of the SDLC where the issue is most likely to have originated or could have been mitigated.
Provide recommendations for improving the SDLC process to ensure that diversity, equity, and inclusion are addressed throughout the development lifecycle. This may include suggestions for.
a. Inclusive planning and requirement gathering processes
b. Diverse representation in design and development teams
c. Inclusive datasets and testing methodologies
d. Continuous monitoring and feedback mechanisms for addressing DEI issues
Conclude your assignment by emphasizing the importance of integrating DEI principles throughout the SDLC to create inclusive and equitable systems that serve all users effectively.

Reading: "Kinect has problems recognizing dark-skinned users?" by Brendan Sinclair

Criteria for Evaluation: Grading and feedback by following criteria
1. Research Depth and Analysis
2. Understanding and Integration of SDLC Stages
3. Analysis of SDLC Stages and DEI Integration

How assignment will be adapted in online format

The assignment will transition to an online discussion format using the course management system (CMS). Students will engage in asynchronous discussions, sharing research and insights on Microsoft's Kinect facial recognition issue and its DEI implications. All resources, including the article, will be available digitally. Submissions will be through the CMS, allowing for efficient grading and feedback. This adaptation promotes active participation, peer interaction, and inclusive learning in system analysis and design.

Course Materials

Textbooks

Systems Analysis and Design
by Scott Tilley
13th Edition | Copyright 2025
ISBN-13: 9798214001111

Class Size Information

Class Size

30

Class Size Category

C - Remedial or advanced math 30

Diversity and Inclusion

Course Design and Materials: Course will incorporate diverse perspectives, authors, and examples that reflect a variety of cultures, identities, and lived experiences. Instructional materials will be reviewed regularly to ensure representation, inclusivity, and alignment with equity-minded practices across disciplines.

Inclusive Learning Environment: Instructors will establish classroom norms and policies that promote respect, civil discourse, and belonging in both online and face-to-face classes. Clear expectations for communication and engagement will support a learning space where all students feel valued and heard.

Accessible Instruction: Course content will be delivered using accessible design. Materials will follow accessibility guidelines within the CMS, including captioned media, readable document formats, and multiple means of engagement to support diverse learning.

Equitable Teaching Practices: Instructors will use transparent and grading criteria, varied assessment methods, and timely feedback to promote fairness and student success. Opportunities for revision, reflection, and multiple demonstrations of learning may be incorporated when appropriate to the discipline.

Culturally Responsive Pedagogies: Instructional strategies will encourage critical thinking about diverse perspectives and systems of power relevant to the course content. Faculty will foster opportunities for students to connect course material to real-world contexts.

Ongoing Reflection and Improvement: Faculty will engage in continuous professional development related to IDEAA principles and reflect on course practices using metacognition to identify opportunities for increased equity, inclusion, and accessibility.

Explain how diversity and inclusion(e.g., gender, culture/race, sexuality, etc.) is infused into the course.

Diversity and inclusion are infused throughout this Systems Analysis and Design course to ensure students develop equitable, accessible, and unbiased technology solutions. The course highlights diverse contributions to system development, showcasing pioneers such as Narayana Murthy, who advanced structured SDLC methodologies, and analyzing real-world system failures caused by biases in design and testing—such as Microsoft Kinect's facial recognition issues with darker-skinned users.

Throughout the course, students will engage with case studies and discussions exploring how bias in system requirements, data models, and testing processes can lead to discriminatory technology that disproportionately impacts marginalized communities. They will also investigate how diverse representation in system design teams leads to more inclusive and ethical solutions. By incorporating inclusive system analysis frameworks, students will learn how to design and evaluate systems that account for diverse user needs across gender, culture, race, and accessibility considerations.

Describe how assignments, instruction, evaluation, course content, and interactions are contextualized for diverse learners promoting an equitable course.

To accommodate diverse learning styles, ensuring that all students—regardless of background, prior experience, or preferred learning approach—can engage with the material effectively. Assignments are designed to provide both hands-on practice and conceptual understanding, catering to different learning preferences. Students will engage in practical system analysis tasks, case study evaluations, project-based learning, and reflective exercises. These assignments encourage critical thinking, problem-solving, and real-world application, ensuring that students can work both independently and collaboratively to develop inclusive and efficient system solutions. By incorporating a mix of technical exercises and written analyses, students can demonstrate their understanding in ways that align with their strengths.Instruction is designed to provide multiple ways for students to access and process information, incorporating lectures with interactive elements such as polling, quizzes, and discussions. Video demonstrations, guided readings, and hands-on simulations reinforce technical concepts, ensuring that students who learn best through visual, auditory, reading/writing, or kinesthetic experiences all have access to content in a way that suits them best. Course content is structured to balance theoretical knowledge with hands-on application, integrating real-world case studies, step-by-step breakdowns of SDLC methodologies, and troubleshooting guides. Supplementary resources such as documentation templates and sample project reports allow students to explore concepts at their own pace.Evaluations are structured to measure both technical skills and conceptual understanding, providing multiple opportunities for students to demonstrate their learning. Assessments include short-answer and multiple-choice exams, scenario-based problem-solving assignments, practical system design and troubleshooting exercises, project-based evaluations, and peer reviews. By offering a combination of exams, projects, and collaborative work, the course ensures that students with different strengths—whether in structured testing or applied problem-solving—have equitable opportunities to succeed.Engagement and interaction are central to student success, and this course provides structured opportunities for collaboration. Group projects require students to work together to analyze and design systems, fostering both technical expertise and teamwork skills. Discussion boards allow for peer-to-peer problem-solving, knowledge sharing, and concept clarification. Peer feedback exercises enable students to critique system designs, gaining exposure to alternative approaches and improving their analytical skills. Additionally, live Q&A sessions and instructor office hours provide direct support and clarification, ensuring that students have multiple ways to engage with the material and seek guidance.By integrating diverse assignments, multimodal instruction, varied assessments, rich course content, and interactive learning opportunities, this course ensures that all students—regardless of their learning preferences—can fully engage with Systems Analysis and Design. The structured balance between hands-on learning, theoretical study, and collaborative discussions creates an equitable and effective learning experience that prepares students for real-world challenges in system development and analysis.

Interactions

Explain how the course will incorporate student-to-student interaction.

Collaboration is a core element of this course, allowing students to engage with their peers, exchange diverse perspectives, and collectively solve complex system design challenges. Group projects will require teams to analyze real-world SDLC failures, such as biases in system development or accessibility gaps in software, and propose inclusive design improvements. During discussions, students will engage in peer review exercises, evaluating each other's system analysis reports and ensuring that diverse perspectives are incorporated into their designs. The course will also facilitate structured interactions through discussion boards, where students can ask questions, share knowledge, and debate ethical considerations in system development. A dedicated "Student Lounge" within the course management system (CMS) will provide a space for informal discussions, collaboration on case studies, and peer support.

Additionally, tools such as wikis, blogs, and group reflections will be integrated to encourage continuous engagement, knowledge-sharing, and a deeper understanding of how different perspectives contribute to effective systems analysis.

Explain how the course will incorporate instructor-to-student interaction.

Instructor engagement is critical in guiding students through complex system analysis topics while ensuring they receive meaningful support throughout the course. At the beginning of the semester, students will receive a personalized welcome message outlining course expectations, goals, and available resources. An orientation video will be provided to help students navigate the course structure. Weekly course reminders will be sent through the CMS to highlight key technical concepts, SDLC methodologies, and DEI-focused discussions. Instructors will actively participate in discussion forums, answering questions, facilitating critical discussions, and providing guidance on how to integrate ethical considerations into system analysis. Office hours will be offered regularly, allowing students to seek additional help, review project feedback, and discuss any challenges they are facing. One-on-one meetings can also be scheduled for students needing personalized support. Live Q&A sessions will be available for students to engage with the instructor in real time, ensuring they receive timely clarification and deeper insights into course content.

Explain how the course will incorporate student-to-content interaction.

Engagement with course materials will be interactive and structured to ensure students can apply theoretical knowledge to real-world system analysis challenges. Lectures will incorporate real-time polls, knowledge-check quizzes, and hands-on exercises to reinforce learning and encourage active participation. Course materials, including lecture videos and readings, will be accessible in multiple formats, such as captioned videos and screen reader-compatible documents, ensuring that all students can engage effectively with the content. Short video case studies will highlight real-world SDLC challenges, including system failures due to bias, algorithmic discrimination, and accessibility gaps. Students will also engage in interactive simulations where they will role-play as system analysts, making critical decisions regarding ethical considerations and inclusive system design. Practice exams, coding exercises, and debugging tasks will be incorporated to provide students with practical applications of course concepts, helping them develop problem-solving skills necessary for system analysis and design.

Explain how the course will incorporate student-to-self interaction (metacognitive).

This course encourages students to reflect on their learning process, assess their biases, and develop self-directed problem-solving skills. Throughout the semester, students will engage in self-assessment activities to evaluate their understanding of SDLC methodologies and ethical considerations in system design. Reflective assignments will require students to critically analyze their own assumptions about system development, identify potential biases in system requirements, and propose solutions for mitigating systemic inequities in system analysis. Additionally, students will complete real-world case study reflections, where they will assess historical system failures and develop strategies to prevent similar biases in future system development. Critical thinking exercises will challenge students to explore alternative problem-solving approaches, broadening their understanding of how different perspectives influence system design. By engaging in metacognitive learning, students will strengthen their ability to adapt, think critically, and recognize the broader implications of their system analysis decisions.
These structured interaction strategies ensure that students not only develop strong technical skills in Systems Analysis and Design but also engage meaningfully with course content, their peers, and the instructor, fostering a collaborative and inclusive learning environment.

Key: 1073