



CSIS-101: INTRODUCTION TO COMPUTERS AND DATA PROCESSING

Effective Term

Fall 2026

BOT Approval Date

06/12/2025

Discipline

CSIS - Computer Sci/Info Systems

Course Number

101

Course Title

Introduction to Computers and Data Processing

Short Title

Intro Comp/Data Processing

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.

C-ID (Admin Only)

C-ID ITIS 120

Catalog Description

This course provides a general introduction to computers and information technology. Students will explore the information processing cycle, with an emphasis on understanding the role of input, output, processing, and storage in modern information systems. Topics for this class include the history of computers, and contemporary issues in information technology. Students will learn to use word processing, spreadsheets, and database applications as a tool for improving personal productivity in an organizational setting.

Codes

TOP Code (CB 03)

0702.00* - *Computer Information Systems

CIP Code

11.0101 - Computer and Information Sciences, General.

Repeatability Code

No

Grading Option

Letter grade OR P/NP

Minimum Qualifications

Minimum Qualifications	And/Or
Computer Information Systems	End

Learning Objectives

Learning Objectives

Learning Objective
1. Compare and contrast the constituent parts of an information system with an emphasis on input, processing, output, and storage.
2. Select an appropriate productivity application for a given task and compose and produce a graphically rich word processing document, a formula based spreadsheet, a relational database, and a media rich presentation.

3. Classify current technology news and events in terms of Privacy, Intellectual Property, Government Regulation, Ethics, and other contemporary issues in information technology.
4. Relate the systems development life cycle (SDLC) to real-world projects.
5. Solve for the Base2 (binary) equivalent of a Base10 value (decimal).
6. Diagram the communication channel, and propose appropriate communication media types to complete the channel (ie. twisted pair, fiber, etc.) given a general communication system description.
7. Propose an appropriate internet tool or resource to derive the answer given a specific Information task.
8. Investigate and assess new sources of information and learning opportunities to stay abreast of emerging information and computing technologies.
9. List career paths related to the program of study, as well as any qualifications and/or professional certifications that may be associated with those careers.
10. Identify barriers to access and benefits of technology due to equity issues including broadband access, remote work opportunities, education, socioeconomic differences, geography, and language and culture including race and gender.

Learning Outcome Information

Course Learning Outcomes

Learning Outcome
CLO 1: Student will be able to insert a graphic into a word processing document (as it pertains to a problem/case scenario).
CLO 2: Student will be able to format a document with respect to font, font size, style, and color within a word processing and spreadsheet document (as they pertain to a problem/case scenario).
CLO 3: Student will be able to use standard functions (i.e. =SUM, =PMT) and user-defined formulas to calculate totals in a spreadsheet document (as they pertain to a problem/case scenario).
CLO 4: Student will be able to create speaker notes in a presentation document (as they pertain to a problem/case scenario).
CLO 5: Student will be able to apply conditional formatting to a range of numbers in a spreadsheet document (as they pertain to a problem/case scenario).

Content

Course Lecture Content

1. Introduction
 - a. Information Processing Cycle
 - b. Elements of an Information System (Hardware, Software, Data, People, and Procedures)
 - c. History of Information Technology
2. Hardware
 - a. Input Devices
 - b. Output Devices
 - c. Storage Devices
 - d. Processors
 - e. Communication Devices
 - f. Embedded Systems
 - g. Internet of Things (IoT)
3. Software
 - a. Operating Systems
 - b. Utility Programs
 - c. Productivity Applications
 - i. Word Processing Software
 - ii. Spreadsheet Software
 - iii. Presentation Software
 - iv. Database Software
 - v. Browsers and other Web Resources
 - d. Enterprise Systems
 - e. Web Systems
 - f. Mobile Systems & App Economy

4. Data
 - a. Data vs. Information
 - b. Binary Representation of Data
 - c. Big Data
5. Computer Processing
 - a. Control Unit & Arithmetic Logic Unit
 - b. Machine Cycle
 - c. Role of Circuits Transistors & Logic Gates (AND, OR, and NOT Gates)
 - d. Cloud Computing & Data Centers
6. Networks
 - a. Data Communications
 - b. Wired and Wireless Media
 - c. Network Architecture and Protocols
 - d. Mesh Networks
7. Development Systems and Program Development Life Cycle
 - a. System Planning and Design
 - b. Computer Programming
 - c. Control Structures (Sequence, Repetition, and Selection Control)
 - d. Database Systems
8. Employment
 - a. Career Opportunities
 - b. Required Education
 - c. Industry and Vendor Certification Paths
 - d. Lifelong Learning
9. Contemporary Issues in Information Technology
 - a. Privacy
 - b. Intellectual Property
 - c. Network Neutrality
 - d. Blockchain & Cryptocurrency
 - e. Internet and Technology Addiction
 - f. Security and Risks
 - g. Cybersecurity
 - h. AI and Machine Learning
 - i. ChatGPT and Large Language Models (LLMs)
 - j. Threats and Opportunities of Artificial Intelligence
 - k. Ethical Considerations
10. The Future of Information Technology
 - a. Augmented and Virtual Reality
 - b. Quantum Computers
 - c. Singularity and Artificial General Intelligence
11. Equity and Access
 - a. Access Divide (broadband access, urban availability, etc.)
 - b. Skills Divide (digital literacy, technical skills, etc.)
 - c. Economic Divide (financial barriers, remote work opportunities, etc.)
 - d. Geographic Divide (urban vs. rural)
 - e. Culture and Language
 - f. Disability

Methods of Instruction

Method

Activity

Integration

Instructors will demonstrate activities using concepts and techniques of programming, word processing, spreadsheets, and databases while students repeat procedures in hands-on activities.

DE Adaptations for MOI

Demonstrations will be accessible through the CMS, offering closed-captioned videos, web-based tutorials, and hands-on activities. Interactive software simulations hosted within the CMS will provide students with real-time engagement opportunities and practical experience, ensuring accessibility and active learning for all participants.

Method

Lecture

Integration

Lectures topics will include Hardware, Software, Contemporary issue in Information Technology, and Issues of Equity and Access including geographic, culture, and economic divides.

DE Adaptations for MOI

The CMS will be a central hub for online students, offering accessible recorded lectures, online presentations, and supplementary materials. To promote inclusivity, live webinars and recorded lectures will be provided with closed captions (CC), enabling real-time interaction and discussions.

Method

Group Projects

Integration

Small group activities will be given on Systems Development Life Cycle concepts, Contemporary issue in Information Technology, and Issues of Equity and Access including geographic, culture, and economic divides.

DE Adaptations for MOI

Group activities and discussions will be facilitated via the course management system's (CMS) discussion tool, designed with accessibility in mind. Features such as screen reader support, adjustable text size, and keyboard navigation ensure active participation from all students. Feedback on discussion contributions will be provided within one week via the CMS, ensuring timely and accessible engagement for everyone.

Methods of Evaluation**Method**

Exams/Tests

Integration

Exams demonstrate mastery of course objectives and should include multiple choice questions that demonstrate students ability to classify different components of hardware; case/narrative problems to demonstrate the ability to relate features of the basic communications model to examples of data communications; Short answer questions that probe understanding of contemporary issues in Information Technology including issues of equity and access. Tests should be based on criteria listed in a formal review document provided in advance to the student.

DE Adaptations for MOE

Exams will be administered through the course management system (CMS), consisting of multiple-choice, true/false, and short-answer and essay questions. Students will submit their completed exams directly through the CMS. Immediate feedback will be provided for objective questions, such as multiple-choice and true/false, while feedback on short-answer and essay responses will be given within 48 hours. This ensures timely reinforcement of learning and offers clarity on areas for improvement.

Method

Homework

Integration

Assigned Homework can include Worksheets, Case Studies, or other problem solving consistent with the course objectives. Assigned worksheets can include fill-in the blank and short answer questions that cover assigned readings and lecture topics and should include questions about Categories of software, or the Information Processing Cycle. In addition to objective content, homework should include questions that probe and evaluate critical thinking including questions and evaluation criteria that require a student to apply or classify current news or events within a particular conceptual framework such as privacy, Intellectual property, or equity and access.

DE Adaptations for MOE

Written Assignments will be managed through the CMS (.pdf files in conjunction with CMS Assignment links). The student will submit the completed activities through the course management system. The evaluation criteria for Homework should be based on a rubric consistent with course content and objectives. Feedback on assignments should be based on this published rubric and should be completed and returned to students via the CMS within one week.

Method

Projects

Integration

Students will be assigned at least one application project for each of the major applications software programs covered in the course - Word Processing, Spreadsheet, Database, and Presentation Software. Word Processing projects should be evaluated based on a rubric of required formatting features (i.e. font, style, color, etc.). Spreadsheet Projects should be evaluated on the correct use of formulas, and the appropriate use of functions (i.e. @sum, @pmt, etc.). Database projects should include at least one form, one report, and one query. Projects will be evaluated based on the completeness and correctness of the project. Cumulative or combined projects are acceptable (i.e. A combined Spreadsheet/Word Processing Project).

DE Adaptations for MOE

Projects will be completed via locally installed software (student computer), or alternatively by appropriate and available web services. Completed Projects will be submitted via submission links established and maintained in the CMS. Project instructions and tutorials will be available through the CMS. All video and audio content should be captioned. Projects should be evaluated with a consistent grading rubric based on required features. Feedback on submitted projects should be provided within one week via the CMS, ensuring timely and accessible engagement for everyone.

Assignments

Assignment Type

Other

In-class and/or outside of class

Outside of class

Formative or Summative

Formative

Assignment

Project Example: Create an Excel Spreadsheet that accurately represents the above data. Shaded cells represent areas that should be calculated using a formula or function. Format the worksheet appropriately. Percent should reflect % of Total Operating Expense. Net Gain/Loss is Total Sales less Operating Expense.

How assignment will be adapted in online format

The assignment will be distributed and collected using the assignments area of the course management system. Feedback will be provided to students via the course management system within five days of submission. An additional recorded tutorial may be recorded and used. All video and audio content should be captioned. Features such as screen reader support, adjustable text size, and keyboard navigation should be enabled to ensure equitable and active participation from all students.



Assignment Type

Writing

In-class and/or outside of class

Outside of class

Formative or Summative

Formative

Assignment

Today there are thousands of Machine Learning systems in use, with new systems being introduced every day. Using the Internet or other resource, identify and describe a specific system, such as a medical system that can identify cancer based on x-ray images, or a law enforcement system that can predict the likelihood of criminal activity at a specific location that utilizes Machine Learning. Based on the system chosen, describe the system and identify the essential data inputs that you think would likely be used to train such a system. What is the desired output of the system? Identify at least one specific way that the system could introduce racial, gender, or other bias into the system if the training data is not valid.

How assignment will be adapted in online format

The assignment will be distributed and collected using the assignments area of the course management system. Feedback will be provided to students via the course management system within five days of submission. An additional recorded tutorial may be recorded and used. All video and audio content should be captioned. Features such as screen reader support, adjustable text size, and keyboard navigation should be enabled to ensure equitable and active participation from all students.

Assignment Type

Other

In-class and/or outside of class

In-class

Outside of class

Formative or Summative

Summative

Assignment

In this final project you will create and submit a 5 to 7 slide PowerPoint or similar presentation. You are encouraged to use Microsoft PowerPoint or Google Slides to complete your project. If you prefer, you can use alternative presentation software such as Keynote (for Mac users), or Prezi which uses a more free form approach to organizing and presenting a topic. It is recommended that you utilize a written outline to organize your content slides. You can submit your presentation as a file, (i.e. .pptx file), or as a link (i.e. Google Docs url).

Presentation Topic: Using knowledge you have learned in this course, including an understanding of the Information Processing Cycle, create a PowerPoint or similar presentation that summarizes the impact of computers or technology in a specific application domain (i.e. How are computers being used in Health Care). Alternatively, you can summarize how a specific technology is being used across domains (i.e. How drones are being used in different fields). Your topic can be very narrow (i.e. How the da Vinci Surgical System for robotic surgery works), or take a broader view (i.e. How AI and Machine Learning will impact Health Care in the future). Any topic which provides context for the intersection of Computers and Technology in Society is appropriate.

Required Presentation Elements:

Your presentation should have 5 to 7 slides;

1 Title Slide (name, topic, class info)

3-5 Content Slides (with 3-6 summary or bullet items per slide)

1 Works Cited Slide (with a minimum of 3 sources)

Your presentation should utilize a design or theme;

Your presentation should include at least one image or graphic;



How assignment will be adapted in online format

The assignment will be distributed and collected using the assignments area of the course management system. Feedback will be provided to students via the course management system within five days of submission. An additional recorded tutorial may be recorded and used. All video and audio content should be captioned. Features such as screen reader support, adjustable text size, and keyboard navigation should be enabled to ensure equitable and active participation from all students.

Assignment Type

Reading

In-class and/or outside of class

Outside of class

Formative or Summative

Formative

Assignment

Objective: To apply the Information Processing Cycle model to an information system of your choice. The Information Processing Cycle is described in Chapter 1.

Carefully read Chapter 1 of your book, Introduction to Computers in your Discovering Computers book. Based on this reading, create a one page summary that describes an information system of your choice in terms of the Information Processing Cycle – Input, Processing, Storage, Output, and Communication. Be sure to clearly identify the data and information components. Include a paragraph (3 to 5 sentences) that explains the benefits of the system you choose. In your benefit analysis include factors such as Speed, Reliability, and Accuracy as described in the chapter. If relevant, try and compare your chosen computer system against previous manual system approaches to solving the same or similar problem.

How assignment will be adapted in online format

The assignment will be distributed and collected using the assignments area of the course management system. Feedback will be provided to students via the course management system within five days of submission. An additional recorded tutorial may be recorded and used. All video and audio content should be captioned. Features such as screen reader support, adjustable text size, and keyboard navigation should be enabled to ensure equitable and active participation from all students.

Course Materials

Textbooks

Vermaat, M, E (2023). Discovering Computers 2023: Digital Technology, Data, and Devices, 17th Edition Cengage Learning (most recent edition).

Other Resources

Web Resources including, but not limited to Youtube.com, CodeAcademy.com, and SQLZoo.net.

Class Size Information

Class Size

35

Class Size Category

B - Facilitated learning 35

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.

The discipline of Information Technology bridges cultures, genders, and race. Information Technology inherently connects people of diverse backgrounds through the web, social media, and popular culture. The subject matter itself is diverse and will be celebrated in the course. Unfortunately, Information Technology can also be used to control and divide individuals and groups. Issues such as the Digital Divide and the role of Artificial Intelligence will be discussed in the context of avoiding or at least identifying bias that can have a negative impact on diversity and inclusion. The required book and other published materials in the course offer case studies, role models, and other content that highlight and celebrate the accomplishments and achievements of individuals from diverse backgrounds and traditionally underrepresented groups.

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

In CSIS 101 students are encouraged to select, research, and elaborate on relevant topics that reflect the student's unique interests and cultural background. An issue discussion question on bias in data in machine learning algorithms would require students to find examples in the literature that document this bias. Such questions encourage students to uncover and elaborate on issues that they find relevant to their unique perspective and personal experience. Course content should be organized and delivered to effectively reach students with different learning styles. Video and audio content should be included to better reach visual and auditory learners. For projects and presentations students should be given a range of options for presenting their findings. (i.e. students could be given an option to present their findings in a written report, or in an in-class presentation). In this way, multiple learning styles can be accommodated to create an equitable course. Course content should be formatted in an accessible manner and adhere to current standards.

Interactions

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

In face-to-face sections, CSIS 101 students will interact with each other primarily via in-class discussion, and small-group projects. Online and face-to-face students also have significant interaction via the online discussion board through both specific and general discussion board threads. Some assignments should require students to comment on, provide peer-review, or otherwise engage with other students in discussing a topic such as Privacy or Network Neutrality. Finally, it should be assumed that students in both face-to-face and online sections do and are engaging with each other via email, discord and other technology mediated discussion forum tools.

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

Instructor-to-Student interaction in CSIS 101 occurs primarily via lecture and instructor led in-class guided practice activities and labs. For online sections, this interaction is facilitated via recorded lectures and labs that include video, audio, and screen-share technology. Additional interaction for both face-to-face and online sections occurs via instructor responses to discussion board questions, direct email response, and synchronous face-to-face or Zoom office hours. Weekly announcements posted concurrently via email and CMS announcement facility provide additional effective and regular Instructor-to-Student contact. For online students, a written or video welcome message posted at the start of the course introduces the instructor to the student in a supportive and encouraging manner.

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

Student-to-Content interaction in CSIS 101 is facilitated through the use of the required course textbook and/or OER materials. Simulation software provided by the publisher provides students an opportunity to engage with the subject matter in an interactive and dynamic way. Labs and case studies provide students a real-world connection to the topics covered in the course.



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

Specific assignments in this course are intended to engage students in ways that relate to their unique situation and personal interests. Periodic discussion questions prompt students to consider the way they interact with issues like Intellectual Property, or how issues like Artificial Intelligence and the App Economy affect them personally. Regular assignments that require students to find and report on Youtube videos and other content that they find interesting encourages self-reflection and engagement of the topics in personal and relevant ways.

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