

Syllabus of CTIS 165 - Fundamentals of Information Systems
Department of Information Systems and Technologies
2025-2026 Fall

Credits: Bilkent 3, ECTS 5

Contact Hours: 3 hours of lecture per week

Prerequisite(s): None

Course Coordinator: Erkan Uçar

Instructors:

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Required Textbook: *Management Information Systems: Managing The Digital Firm*, Kenneth C. Laudon, Jane P. Laudon, 17th Global Edition, © 2021 Pearson. (ISBN-13: 978-1292403281 / ISBN-10: 1292403284) (editions 14-16 are also acceptable)

Catalog Description

The fundamental concepts of information systems with historical and evolutionary perspectives. Systems, organizational and strategic role and added value of information systems, decision support systems, data mining, Management information systems (MIS), information systems planning, data management, computer networking, internet, analysis, design, development, and maintenance of information systems, competitive edge of information systems.

Assessment Methods:

Method	Count	%	
Lecture Quiz	2	20	In-class written exam, closed notes.
Midterm Exam	1	20	In-class written exam, closed notes.
Project	1	20	Interim reports, presentation, Q&A.
Final Exam	1	35	In-class written exam, closed notes.
Performance	1	5	Attendance, in-class + Moodle participation – related to course content.

Minimum Requirements to Qualify for the Final Exam:

Do not miss more than 10 hrs of lecture AND collect minimum 20% of total points of the course.

Course Learning Outcomes:

Outcome	Assessment	Program Outcome
Identify concepts, theories and principles about information systems.	Quizzes, Midterm	(a)
Use information technologies to characterize the use of information systems for business.	Project	(a)
Design a simple information system as part of a team by using information systems principles.	Project	(b) (c) (e)
Use learned concepts, theories and principles to identify and outline the relationships between them.	Midterm, Final	(a)

Weekly Syllabus:

Week	Lect.Date	Lecture Content	Book
1	Sep 15,16	Syllabus & introduction.	Chap. 1
	Sep 18	Organizational view of IS. Information-data-knowledge. IS. System, environment, feedback. Business information value chain.	
2	Sep 22,23	Managerial view of IS.	Chap. 2
	Sep 25	Business processes. Transaction processing systems. Management information systems. Decision support systems. Enterprise applications.	
3	Sep 29,30	Ethical, social, and political issues raised by information systems.	Chapter 4
	Oct 02	Responsibility, Accountability, Liability. Candidate ethical principles. Real-world ethical dilemmas. Challenges to privacy.	
4	Oct 06,07	Intellectual property. System quality. Quality of life.	Chapter 5
	Oct 09	Lecture Quiz1 (Oct.11.Saturday)	
5	Oct 13,14	IT Infrastructure. Evolution of IT. Hardware, operating systems, enterprise software applications, data management and storage, telecomm, Internet, system integration services.	Chapter 5
	Oct 16	Emerging hw & sw technologies. Mobile digital platform. Quantum computing, virtualization, cloud computing, green computing, open-source software, web services / outsourcing.	
6	Oct 20,21	Databases and database management systems. File organization. Problems with traditional file environments. Relational DBMS. Data definition, data dictionary, data manipulation. SQL. Normalization. Referential integrity. E-R diagrams. SQL Tutorial. Business intelligence and analytical tools. Big data, data warehouses, Hadoop, in-memory computing. Data mining, text mining, web mining. Midterm (Nov.08.Saturday)	Chapter 6
	Oct 23		
7	Oct 27,28		Chapter 7
	Oct 30		
8	Nov 03,04	Telecommunications networks and the internet. Computer networks.Client-server architecture. Packet switching. TCP/IP. Bandwidth. Physical transmission media. The Internet. DNS. Architecture. IPv6. VoIP. VPN. The web. Wireless communication technologies. HTML, HTTP. Web 3.0. Cellular systems, bluetooth, Wi-Fi, RFID, WSN.	Chapter 8
	Nov 06		
9	Nov 10,11	System vulnerability, information system controls. Internet vulnerability. Malware. Hackers, computer crime. Spoofing. DoS, DDoS. Internal threats. Software vulnerability. Computer forensics. General controls. Application controls. Risk assessment. Lecture Quiz1 (Nov.29.Saturday) Security policy. Disaster recovery. IS audit.	Chapter 13
	Nov 13		
10	Nov 17,18	Tools and technologies for cyber security. Firewalls. Encryption. Public key infrastructure. Linux Tutorial.	Chapter 8
	Nov 20		
11	Nov 24,25	Systems development methods and methodologies. Structured / object-oriented development. Traditional systems life cycle. Waterfall process model. Prototyping. End-user development. Application software packages. Outsourcing.	Chapter 8
	Nov 27		
12	Dec 01,02	Project Presentations (schedule t.b.a.)	Chapter 13
	Dec 04		
13	Dec 08,09	Final Exams (exact date t.b.a.)	Chapter 13
	Dec 11		
14	Dec 15,16		
	Dec 18		
15	Dec 22,23		
Dec 25 - Jan 06			

Grading Scale

A : 90.00 – 100.0	B+ : 80.00 – 84.99	C+ : 65.00 – 69.99	D+ : 50.00 – 54.99
A- : 85.00 – 89.99	B : 75.00 – 79.99	C : 60.00 – 64.99	D : 45.00 – 49.99
	B- : 70.00 – 74.99	C- : 55.00 – 59.99	F : 0 – 44.99

Guidelines for the Term Project

- Form your teams (of 3 students) by the end of week 3.
- Propose an information system to be used by any application domain your team will pick. Your proposal should include the following items which are not limited by this list:
 - * IDEA: system name, brief description, user profiles of the system.
 - * FUNCTIONS & BENEFITS of the system.
 - * ETHICAL/SOCIAL/SECURITY/SUSTAINABILITY ISSUES of the system.
 - * MANAGERIAL COMPONENTS: generating sample data, storing this data on MS Excel and constructing decision support interfaces based on this data in MS Excel and Power BI.
- These items will be 4 different deliverables with specific deadlines (prob. end of weeks 5, 7, 10, and 13).
- One of the team members (for each team) should submit these deliverables through Moodle.
- To the extent possible: APPLY what you have learned in class to your proposal.
- In the last week of the semester, you should also present your system in class.
- More details will be given in the Project Deliverables.

Online Course Evaluation

Course evaluation is a valuable source of feedback from the students to the department and the university which can greatly help improve teaching and learning. The greater the level of participation by the students, the more useful and statistically reliable observations and conclusions can be drawn from the evaluation results. Your honest and impartial comments about what works and what doesn't work in the course can help CTIS build on the parts of the course that are strong and improve those that are weak for the next group of students. The course evaluation also provides you the exclusive opportunity to make your opinion count on an important issue – the quality of teaching at CTIS. Please don't forget to complete the online course evaluation form for this course towards the end of the semester.

Academic Dishonesty

In light of its commitment to academic integrity, Bilkent University prohibits acts of misconduct and academic dishonesty. These include, but are not limited to, acts of cheating, plagiarism, and falsification of data, as defined below.

- *Cheating* occurs when an individual uses dishonesty or deception to receive or help others receive professional or academic credit for work she or he did not perform. Cheating includes, among other acts, misappropriation and / or development of the ideas, concepts, designs, or methodology of others without consent; use of materials or devices not permitted by the instructor during exams; taking an exam for another person; resubmitting work previously submitted elsewhere; copying previously published solutions to problems.
- *Plagiarism* is representing the work or ideas of another person as one's own. It frequently involves quoting, cutting / pasting or closely paraphrasing written language without appropriately citing the source of the material through the use of quotation marks, reference notes, or other methods of acknowledgement. An act of plagiarism may be unintentional, and to avoid unintentional plagiarism standard practices of citation should be followed. For detailed instructions regarding standard citation practices, see <http://www.plagiarism.org>
- *Falsification* is a deliberate misrepresentation in which information, whether in the form of data, written language, images or other media, is either altered or fabricated.

Ref: <https://w3.bilkent.edu.tr/bilkent/policy-on-conflicts-of-interest-and-commitment-academic-integrity>

Students' Responsibilities

- Come to class on time and prepared.
- Attend lectures and participate in class discussions.
- Ask whatever you do not understand immediately (do not postpone) and make use of office hours.
- Submit all your work thru Moodle on time and with the required format.
- Do not be distracting in-class and keep your mobile devices in silent (no vibrating) mode.
- Read and apply the Academic Integrity Policy of the university.
- Study all course materials and instructor messages carefully.
- Do not use aliases in your emails, put your signature instead.

Instructor's Responsibilities:

- Come to class on time and prepared.
- Find effective ways to communicate course content to the students.
- Be responsive to student questions and encourage participation.
- Communicate all requirements to students very clearly and on time.
- Grade all exams as soon as possible and give clear feedback.
- Enforce the Academic Integrity Policy of the university.
- Treat all students respectfully and equally.