ISC

B.S. Computer Science and Technology

(Edition 2011)

ABET accreditation by campus

Remedial Semester

Code	Name	CL	L	U	CA	UDC
F1001	Introduction to Physics	3	0	8	3	3.5
H1001	Remedial English I	5	0	8	3	3.5
H1002	Remedial English II	5	0	8	3	3.5
H1003	Remedial English III	5	0	8	3	3.5
H1004	Remedial English IV	5	0	8	3	3.5
H1005	Remedial English V	5	0	8	3	3.5
H1015	Spanish Composition	5	0	8	3	5.8
MA1001	Introduction to Mathematics	6	0	16	6	7
TC1001	Introduction to Computer Science	3	0	8	3	3.5
		42	0	80	30	37.3

First Semester

Code	Name	CL	L	U	CA	UDC
DS1003	Natural Sciences and Sustainable Development	3	0	8	3	3.5
F1002	Physics I	3	1	8	3	4.7
H1016	Foreign Language	5	0	8	3	3.5
MA1015	Mathematics I	3	0	8	3	3.5
TC1003	Discrete Mathematics	3	0	8	3	3.5
TC1014	Programming Fundamentals	3	0	8	3	3.5
TC1023	Introduction to Computer Systems Engineering	3	0	4	1.5	3.5
		23	1	52	19.5	25.7

Second Semester

Code	Name	CL	L	U	CA	UDC
AD1005	Management and Business Model Innovation	3	0	8	3	3.5
H1040	Analysis and Verbal Expression	5	0	8	3	5.8
MA1017	Mathematics II	3	0	8	3	3.5
TC1015	Introduction to Interactive Design	3	0	8	3	3.5
TC1016	Computer Organization	3	1	8	3	4.7
TC2016	Object-Oriented Programming	3	0	8	3	3.5
		20	1	48	18	24.5

Third Semester

Code	Name	CL	L	U	CA	UDC
F1005	Electricity and Magnetism	3	1	8	3	4.7
H1018	Ethics, Self and Society	3	0	8	3	3.5
MA1006	Probability and Statistics	3	0	8	3	3.5
MA2009	Mathematics III	3	0	8	3	3.5
TC1018	Data Structures	3	0	8	3	3.5
TC1019	Introduction to Software Engineering	3	0	8	3	3.5
		18	1	48	18	22.2

Fourth Semester

Code	Name	CL	L	U	CA	UDC
H2001	Verbal Expression in the Workplace	3	0	8	3	3.5
TC1020	Databases	3	0	8	3	3.5
TC1021	Videogame Development Project	3	0	8	3	3.5
TC2017	Analysis and Design of Algorithms	3	0	8	3	3.5
TC2018	Introduction to Networks	3	1	8	3	4.7
TC2019	Numerical Methods in Engineering	3	0	8	3	3.5
		18	1	48	18	22.2

Fifth Semester

Code	Name	CL	L	U	CA	UDC
HS2000	Humanities and Fine Arts	3	0	8	3	3.5
MA1019	Linear Algebra	3	0	8	3	3.5
TC2004	Analysis and Modeling of Software Systems	3	0	8	3	3.5
TC2008	Operating Systems	3	1	8	3	4.7
TC2020	Computational Mathematics	3	0	8	3	3.5
TC2022	Network Interconnection	3	1	8	3	4.7
		18	2	48	18	23.4

Sixth Semester

Code	Name	CL	L	U	CA	UDC
EM1005	Entrepreneurship	3	0	8	3	3.5
TC2024	Mobile Application Development Projects	3	0	8	3	3.5
TC2025	Advanced Programming	3	0	8	3	3.5
TC3041	Advanced Database Systems	3	0	8	3	3.5
TC3045	Software Quality and Testing	3	3	12	4.5	7
TI2011	Project Evaluation and Management	3	0	8	3	3.5
		18	3	52	19.5	24.5

Seventh Semester

Code	Name	CL	L	U	CA	UDC
HS2005	Citizenship	3	0	8	3	3.5
TC2006	Programming Languages	3	0	8	3	3.5
TC2026	Web Applications Development	3	1	8	3	4.7
TC2027	Computer and Information Security	3	1	8	3	4.7
TC3002	Management of Software Engineering Projects	3	0	8	3	3.5
VA2010	Topics I	3	0	8	3	
		18	2	48	18	19.9

Eighth Semester

Code	Name	CL	L	U	CA	UDC
TC2007	Quantitative Methods and Simulation	3	0	8	3	3.5
TC3022	Computer Graphics	3	0	8	3	3.5
TC3048	Compiler Design	3	0	8	3	3.5
TC3049	Software Design and Architecture	3	0	8	3	3.5
TC3052	Web Application Development Laboratory	0	3	4	1.5	2.6
VA2011	Topics II	3	0	8	3	
VA2012	Topics III	3	0	8	3	
		18	3	52	19.5	16.6

Ninth Semester

Code	Name	CL	L	U	CA	UDC
HS2006	Applied Ethics	3	0	8	3	3.5
TC2011	Intelligent Systems	3	0	8	3	3.5
TC3054	Business Solution Development Capstone Project	3	0	8	3	3.5
TI3035	Introduction to Professional Development	2	0	2	.8	2.3
VA2013	Topics IV	3	0	8	3	
VA2014	Topics V	3	0	8	3	
VA2015	Topics VI	3	0	8	3	
		20	0	50	18.8	12.8

Academic credits

CL The letter "CL" indicates the number of class-hours per week.

L The letter "L" indicates the number of laboratory-hours per week.

U The letter "U" represents the weekly time that the student dedicates to fulfill the objectives of the course. It includes class-hours and students' independent work.

CA The letters "CA" represents the number of semester credit hour of the course.

UDC Load Units

One semester credit hour implies one 50-minute class-hour plus 100 minutes of independent work per week, over at least 15 weeks.

One course of 8 semester academic units is equivalent to one course of 3 semester credit hours.

Program and Learning Outcomes

The objective of the **Computer Systems Engineering** program is to prepare specialists in software development in order to improve the quality of life of society, support organizations' competitiveness and the nation's sustainable development. Their professional education has a strong focus on the areas of Software Engineering and Computer Science, thus enabling them to create all kinds of computer applications, using leading-edge technology, ranging from those that are for personal, daily use to specialized applications for scientific, technical, engineering and business settings.

A **Computer Systems Engineer** will be able to:

- Design, develop, implement, test and maintain software projects according to previously established performance criteria.
- Apply methodologies, tools and international standards in the development of software and IT solutions.
- Apply the concepts of computer science to propose satisfactory engineering solutions to real problems in the area IT.
- Successfully provide solutions of technological infrastructure to enable business processes in an organization.
- Apply techniques, methods and processes in the planning, implementation, control and completion of software projects.
- Learn on their own new technologies, methodologies, tools and standards in their field of expertise.
- Participate effectively in multi-disciplinary teams.
- Effectively communicate in Spanish and English.
- Analyze global and local impacts of computing science in individuals, organizations and society to provide professional services in an ethical and responsible way.

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Complementary Professional Concentration

Code	Name
AV05	Film Production and Directing
AV07	Film Studies
CAG	Agribusiness
CAL	Latin American Art
CAO	Global Issues
CBN	BioBusiness
CCI	Political Studies
CCT	Creative Literary Writing
CCV	Commercialization and Sales
CDE	Private Law
CDP	Public Law
CEF	Family Business and Wealth Generation
CEI	Innovation
CGA	Environmental Management and Negotiation
CGP	Government and Public Transformation
CIG	Agri-Industrial Engineering
CII	Healthcare Engineering
CIN	International Business
CMK	Marketing Strategies
CMP	Processes Improvement in the Automotive Industry
CMS	Music
CMV	Digital Media Production
CNN	Social Innovation
CO01	Strategic Communication
CPC	Film Production and Directing
CPD	Development of Editorial Projects
CPE	Consulting and Management for Small Enterprises
CPP	Promotion and Advertising
CSG	Global Supply Chain Management
CSI	Intelligent Systems
CSP	Agrofood Production Systems
EH01	Projects for Creative and Cultural Industries
MI01	Specialized Digital Journalism

Modalidity

Code	Name
CC	Consulting Modality
CE	Innovative Entrepreneurship Modality
CF	Enterprising Families Modality
CI	Research and Innovation Modality
CL	Leadership for Social Development Modality
CR	Professional Experience Modality

Campus that offer this program

Campus	Number of periods offered	From	Closed for new students
Chiapas	3	Semester Aug - Dec 2013	Semester Aug - Dec 2017
Estado de México	Complete	Semester Aug - Dec 2011	Semester Jan - May 2019
Guadalajara	Complete	Semester Aug - Dec 2011	Semester Jan - May 2019
Querétaro	Complete	Semester Aug - Dec 2011	Semester Jan - May 2019
Tampico	4	Semester Aug - Dec 2015	Semester Jan - May 2019
Toluca	Complete	Semester Aug - Dec 2011	Semester Jan - May 2019

Last update: 05/November/2018

Graduate Requirements

To obtain a bachelor degree at Tecnológico de Monterrey students are required to:

1. Have completely finished the high school cycle prior to passing the first course in their college curriculum.

2. Have completed, under the existing standards, the prior academic requirements corresponding to the curriculum either through placement exams or the corresponding remedial courses.

3. Have covered all the courses in their curriculum either by passing all the courses at Tecnológico de Monterrey or by obtaining revalidation or equivalence agreements—in compliance with the corresponding standards--of some of the courses taken at other institutions, and passing the remaining courses at Tecnológico de Monterrey. Courses taken at foreign universities with which Tecnológico de Monterrey has agreements will be considered, for the effects of this article, as courses taken at Tecnológico de Monterrey, as long as they do not exceed the equivalent of two semesters of the curriculum.

4. Have taken at Tecnológico de Monterrey at least the equivalent of the last four semesters of the corresponding curriculum in the case of students who have course revalidation or equivalence at this level. Flexibility may be exercised in programs that may be established by agreement with other universities.

5. Have completed social service in compliance with the legal precepts in force and the standards approved by the president of Tecnológico de Monterrey.

6. Have taken the General Undergraduate Exit Exam of the National Center for the Evaluation of Education (Centro Nacional de Evaluación para la Educación, A. C.), which assesses the knowledge and skills acquired by the student during the degree program. This requirement applies only to students who are graduating from a degree program for which these exams exist. The result of this exam will be recorded in the student's transcript.
Students from the undergraduate programs that do not have a CENEVAL exit exam must take the capstone exams designed for this purpose. This requirement applies only to students who are graduating from a degree program for which these exams exist.
7. Have a proven command of the English language, achieving the level established by Tecnológico de Monterrey on one of the exams authorized by the institution.

Last update: 2/March/2016