

course description



این فایل به منظور کمک به متقاضیان تحصیل در کشور ایتالیا توسط گروه فلی تو ایتالی به صورت رایگان تهیه شده است لطفاً از خرید این فایل خودداری فرمایید.

اسفاده از این فایل در صفحات مجازی و وبسایت ها با ذکر نام تهیه کننده بلامانع است.

کانال تلگرام
فلی تو ایتالی



کانال یوتیوب
فلی تو ایتالی



پیج اینستاگرام
فلی تو ایتالی



سایت
فلی تو ایتالی



معرفی فلای تو ایتالی

سلام!

تیم فلای تو ایتالی متشکل از چند دانشجو که فعالیت خودمون را از ماه بهمن سال 1401 آغاز کردیم و هدف تیم ما این است که به شما کمک کنیم تا بتوانید به صورت مستقل و بدون نیاز به مشاوران مهاجرتی برای دانشگاه های ایتالیا اپلای کنید و پذیرش بگیرید . با توجه به اینکه بسیاری از موسسه های مهاجرتی هزینه های بالایی را برای اخذ پذیرش از دانشگاه های ایتالیا از دانشجو دریافت میکنند ، ما تصمیم گرفتیم با تلاش و تجربه خود به دانشجو ها کمک کنیم که بدون هزینه اضافه کار های مهاجرتی خودشان را انجام بدهند .

در این راستا در طی سال های گذشته ویدئو های مختلفی را برای نحوه اپلای کردن دانشگاه های ایتالیا ضبط و منتشر کردیم تا به دانشجویان کمکی کرده باشیم تا بتوانند در این مسیر با کمترین هزینه از دانشگاه های ایتالیا پذیرش بگیرند .

پس اگر سوال یا نیاز به راهنمایی در زمینه مهاجرت تحصیلی به کشور ایتالیا داشتید ، با ما همراه باشید و سوالات خودتون را از ما بپرسید . ما در کنار شما خواهیم بود و شما را همراهی خواهیم کرد .

مدیریت fly to italy



طریق استفاده از فایل

برای استفاده از این فایل ، صفحات بعد را کپی گرفته و به
دانشگاه مبدا ببرید و تاییدات لازم را بگیرید



Islamic Azad University (IAU)

SUMMARY OF COURSE DESCRIPTIONS BACHELOR OF COMPUTER ENGINEERING (SOFTWARE)

Abbreviations: **P**= Pre-Requisite, **B**=Basic, **G**=General, **M**=Major, **S**=Specialized, **E**=Elective

#	Title of the Course	Credits		Hours	Syllabus of Courses	Prerequisite	Type*
		Theoretical	Practical				
01	Pre-University Mathematics	2	-	32	Designed for students who need to develop their algebraic skills. Topics include review of arithmetic, real number concepts, linear and quadratic equations and inequalities.	-	P
02	Mathematics I	3	-	48	Introduction to Calculus, Cartesian coordinates, differentiation and limit functions, approximation of roots of equations.	-	B
03	Physics I	3	-	48	Students cultivate their understanding of Physics through inquiry-based investigations as they explore topics such as Newtonian mechanics (including rotational motion); work, energy, and power; mechanical waves and sound; and introductory, simple circuits.	-	B
04	General English Language	3	-	48	Describing English Grammar and Vocabulary with reading and writing homework and periodical English exams.	-	G
05	General Persian Literature	3	-	48	Discussing the poem and prose from old literature of Persian.	-	G
06	Islamic Ethics	2	-	32	The concept of morality in Islam centers on certain basic beliefs and principles.	-	G
07	Mathematics II	3	-	48	Introduction to differential calculus, integral double and triple, three-variable equations, and Matrix series analysis, partial derivative.	02	B
08	Physics II	3	-	48	Charge & matter, electrical field, Gauss law, electrical potential, capacitors and dielectric, current & resistance, electrical kinetics and circuits, magnetic field, Ampere's law, Faraday induction law, matter magnetic properties & oscillations, alternate currents, Maxwell equations, electromagnetic waves.	03	B

09	Physics I Lab	-	1	32	This course covers mostly Newtonian mechanics, emphasizing problem solving and math skills useful for physics. Reviews algebra, geometry, and trigonometry as applied to physics.	03	B
10	Computer Lab	-	1	32	History, kinds and applications of computer including personal computer, working station, minicomputers, big and super-computers, structures and accessories including motherboard, output and input board, keyboard, screen, printer, scanner, introduction to Windows Versions, introduction to internet including mail, ftp, Telnet, web, introduction to some applied software such as Word, Latex, Excel.	-	M
11	Engineering Probabilities and Statics	3	-	48	Elementary statistical methods and applications to engineering problems, samples and populations, frequency distributions, probability theory, basic distributions, random sampling, point and interval estimation, hypothesis testing and linear regression and correlation are studied.	02	B
12	Differential Equations	3	-	48	Study of differential equations that arise as models of phenomena in engineering. Topics include: first-order equations; linear equations; second-order equations and their applications; systems of linear equations; series solutions; Laplace transforms; introduction to partial differential equations.	-	B
13	Fundamentals of Computer and Programming	4	-	64	A programming class held in laboratory whose role is to make students familiar with C++ programming principles. The emphasis of this course was toward hands-on program development, testing and debugging of the code.	-	M
14	Electrical Circuits I	3	-	48	Introduction to theory, analysis and design of electric circuits. Voltage, current, power, energy, resistance, capacitance, inductance	03	M
15	Electronic Circuits	3	-	48	The course introduces the fundamentals of the lumped circuit abstraction. Topics covered include: resistive elements and networks; independent and dependent sources; switches and transistors; digital abstraction; amplifiers; energy storage elements; dynamics of first- and second-order networks; design in the time and frequency domains; and analog and digital circuits and applications. Design and lab exercises are also significant components of the course	14	M
16	Computer Graphics I	3	-	48	Computer Graphics is a study of the hardware and software principles of interactive raster graphics. Topics include an introduction to the basic concepts, 2-D and 3-D modeling and transformations, viewing transformations, projections, rendering techniques, graphical software packages and graphics systems.	-	E
17	Discrete Structures	3	-	48	The purpose of this course is to understand and use (abstract) discrete structures that are backbones of computer science. In particular, this class is meant to introduce logic, proofs, sets, relations, functions, counting, and probability, with an emphasis on applications in computer science.	02 & 14	M
18	Physics II Lab	-	1	32	According to the syllabus presented in physics II	08	B

19	Islamic Studies I	2	-	32	Familiarizing to the instructions of Islam.	-	G
20	Advanced Programming	3	-	48	Students will learn the advanced concepts and techniques such as OOP in Programming using C++ language. In depth C++ programming. Memory management, in-depth understanding of C++ codes, coding relation with operating system, file management, IO streams, implementation of inheritance and its related issues in C++, operator overloading, exception handling, object oriented programming principles, multi thread programming and finally implementation of large programming projects with C++	14	M
21	Logical Circuits	3	-	48	Covers the design and application of digital logic circuits, including combinational and sequential logic circuits.	17	M
22	Machine Language and System Programming	3	-	48	An introduction of the Assembly Language. The student will work with binary and hexadecimal numbering systems, computer architecture and assembly language instruction sets. The student will write assembly language programs, implementing an assembler and linker using a high-level language	20	M
23	Technical English Language	2	-	32	During this course students are taught Advanced English in order to be able to understand complicated technical materials. Also students must give a presentation at the end of the semester in order to become fluent in giving a presentation in English.	04	M
24	History of Islam	2	-	32	Talking about Islam's history.	-	G
25	Electrical Circuits I Lab	-	1	32	Laboratory should be presented according to the course of Electric Circuits I	14 & 18	M
26	Physical Education I	-	1	32	This course is designed to investigate and apply the basic concepts and principles of lifetime physical fitness and other health-related factors.	-	G
27	Data Structure	3	-	48	A study of the development and use of Abstract Data Types for storing and retrieving data. Data structures considered include lists, strings, tables, stacks, trees, and graphs. Pointers, templates, and classes are used for implementing data structures. Other topics include searching and sorting algorithms and recursion	17 & 20	M
28	Computer architecture	3	-	48	This course introduces the concepts of computer architecture by going through multiple levels of abstraction, and the numbering systems and their basic computations. It focuses on the instruction-set architecture of the MIPS machine, including MIPS assembly programming, translation between MIPS and C, and between MIPS and machine code. General topics include performance calculation, processor datapath, pipelining, and memory hierarchy.	21 & 22	

29	Design and Implementation of Programming Languages	3	-	48	Design and implementation of high-level languages, focusing on compiler design and implementation. Topics include data types, control structures, and the relationship between syntax and semantics. Course project includes designing and programming a compiler	22 & 27	M
30	Islamic Studies II	2	-	32	This course offers more introduction to the religion of Islam.	19	G
31	Data Storage and Retrieval	3	-	48	The course introduces the fundamentals of the lumped circuit abstraction. Topics covered include: resistive elements and networks; independent and dependent sources; switches and transistors; digital abstraction; amplifiers; energy storage elements; dynamics of first- and second-order networks; design in the time and frequency domains; and analog and digital circuits and applications. Design and lab exercises are also significant components of the course.	17	S
32	Algorithms Design	3	-	48	This is an intermediate algorithms course with an emphasis on teaching techniques for the design and analysis of efficient algorithms, emphasizing methods of application. Topics include divide-and-conquer, randomization, dynamic programming, greedy algorithms, incremental improvement, complexity, and cryptography.	27	M
33	Formal Languages and Automata Theory	3	-	48	Finite automata, Pushdown automata, touring machine, different types of grammars and languages, Chomsky classification, relation between languages and machines and the relevant theorems.	27	M
34	Artificial Intelligence	3	-	48	A research field that studies how to realize the intelligent human behaviors on a computer. ... The main research topics in AI include: problem solving, reasoning, planning, natural language understanding, computer vision, automatic programming, machine learning, and so on	32	S
35	Principles of Database Design	3	-	48	Studies of database management including: concepts and characteristics, planning organization, data structures, semantic data modeling, conceptual design, physical design, administration, and implementation. Students will design a database.	31	S
36	Software Engineering I	3	-	48	Introduction to software life cycle models. Software requirements engineering, formal specification and validation. Techniques for software design and testing. Cost estimation models. Issues in software quality assurance and software maintenance.	31	S
37	Electronic Circuits Lab	-	1	32	It will be offered according to the Electronic Circuits course.	15 & 25	M
38	General Workshop	-	1	48	This course focuses on the initial training of welding, wiring, molding and soldering.	-	G

39	Islamic scriptures	2	-	32	General topics considering ethics and religion.	-	G
40	Method of Presentation of Scientific & Technical Subjects	2	-	32	The most important factors that should be considered while presenting in a seminar or a class. This course demands each student to give at least 5 presentations. Other topics include how to write references, how to write papers efficiently and articulately and how to write regular reports while working on a project.	23 & passing 80 credits	M
41	Principles of Compilers Design	3	-	48	An introduction to the design and implementation of programming language translators. Theoretical aspects of language design and translation are discussed and practically demonstrated by developing a working compiler.	22 & 29	S
42	Imam Khomeini's Testament	1	-	16	Biography of Imam Ayatullah Ruhullah Khomeini	-	G
43	Electrical Circuits II	3	-	48	Electrostatics and electromagnetics; resistance, capacitance, inductance; series and parallel circuits, independent and dependent voltage and current sources; energy, power; Superposition, Norton Theorems; DC and AC; initial, steady state and transient conditions; frequency selective circuits and resonance; poly-phase circuits and transformers.	14	E
44	Microprocessor I	3	-	48	This course has an emphasis on microprocessor programming and assembly language programming, utilizing 8, 16 and 32 bit processors (Intel, Freescale, ARM). Topics include CPU concepts (registers, address bus, data bus, internal versus external ROM, internal versus external RAM, program counter, stack pointer, interrupts), input/output mechanisms, machine data types, basic assembly language programming, timers and interrupt handling	28	M
45	Family and Population Planning	2	-	32	Introduces issues and programmatic strategies related to the development, organization, and management of family planning programs, especially those in developing countries.	-	G
46	Software Engineering II	3	-	48	Definition of software engineering, roles and purposes in production of computer systems, procedure of software implementation (from determining specifications to implementation), procedure of software development, life cycle models of systems, troubleshooting methods, improve efficiency of software, software usability and reusability, introduction to backup tools, software maintenance and development, introduction to the second part of CASE. In this course students must do a group project.	36	S
47	Database Lab	-	1	32	Laboratory should be presented according to the course of Database Design	35	S
48	Logical Circuits Lab	-	1	32	It will be offered according to the Logic Circuits course.	21 & 37	M

49	Engineering Mathematics (for Computer Science)	3	-	48	This subject is one of the cornerstones of mathematics. Complex differentiability, Cauchy-Riemann differential equations, contour integration, residue calculus, harmonic functions, matrix factorizations, and geometric properties of complex mappings.	07 & 12	M
50	Method of Numerical analysis	3	-	48	Building upon calculus and computer programming, the course covers basic numerical methods, including linear and nonlinear algebraic equations, interpolation and approximation, ordinary differential equations, numerical integration and differentiation, finite element and perturbation. Weekly assignments involve both pencil-and-paper and computer work.	12 & 20	E
51	Islamic Revolution and its Roots	2	-	32	Familiarizing with Iran's Islamic revolution, and the events which lead to it.	-	G
52	Operating Systems	3	-	48	An introduction to fundamental concepts in operating systems: their design, implementation, and usage. Topics include process management, main memory management, virtual memory, I/O and device drivers, file systems, secondary storage management, and an introduction to critical sections and deadlocks	28	M
53	Operating Systems Lab	-	1	32	In appropriation with subjects of the relevant course	52	S
54	Computer Architecture Lab	-	1	32	This course is offered according to the Computer Architecture course.	53 & 48	M
55	Computer Networks	3	-	48	Considers a wide range of concepts used in the design and implementation of modern network systems. Course content will be organized according to the TCP/IP and the OSI model. Among topics that will be included are hardware components, protocol suites (especially TCP/IP), network topologies, IEEE 802.3 networks, bridging, and routing.	28	M
56	Introduction to the Qur'an	1	-	16	This course will introduce students to various aspects of the Quran	-	G
57	internship	-	2	240	Aim of Course: Students have to work in a company or manufacture in a field related to their interests or project.	Passing 100 credits	S
58	WAN network design	3	-	48	This is an elective course and has an emphasis on Structure of networks, network architectures, reference model of ISO, networks of ARPA, SNA, DECNET and general. Network topology, connectivity analysis, delay analysis, design of network with local access. Design of physical layer, fundamentals of theory for data transfer, transfer telephone systems and multiplexing, survey on terminal, transfer errors	55	E

59	Physical Education II	-	1	32	This class is designed to provide students with the opportunity to explore and understand the benefits of speed/Agility/strength training for team sports. The students will participate in various physical activities and learn a variety of fitness habits that promote a healthy lifestyle.	26	G
60	Microprocessor I Lab	-	1	32	This course is offered according to the Microprocessor course.	44 & 54	M
61	Advanced topics in software-engineering	3	-	32	The course covers advanced theoretical and technical issues of software engineering. It will focus on some selected topics, such as software refactoring, code review, dependency analysis, software analysis and testing, debugging, fault localization and repair, continuous integration.	-	E
62	Project	-	3	48	This course is intended to complement the theory and to provide an in-depth, hands-on experience in all aspects of software engineering. The students will work in teams on projects of interest to industry and will be involved in analysis of requirements, architecture and design, implementation, testing and validation, project management, software process, software maintenance, and software reengineering.	28 & 40	M

Remarks:

In University Educational System during each academic semester for each Theoretical Credit 16 hours, Practical 32 hours and Workshop Operations 48 hours of educational is offered.