course description

Fly to Italy

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

اسفاده از این فایل در صفحات مجازی و وبسایت ها **با ذکر نام تهییه کننده** بلا مانع است.

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 خودشون 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

	Course Title	Credit	Hour				Description	Type* of Course
			Total	Theory	Practical	Design Workshop		
01	Calculus I	3	51	51	-	-	Introduction to Cartesian and Polar coordinates, Complex numbers, complex functions, limit and differential theories, average value theorem, complex integrals, furrier series and transforms, solving equations with furrier series (such as heat and wave equations)	B
02	General Physics I	3	51	51	-	-	Basic and advanced principles of Mechanical Physics.	B
03	Engineering Drawing	1	51	-	51	-	Draw and analyses of industrial parts. Drawing perspective, and draw views from an perspective shape.	P
04	Calculus II	3	51	51	-	-	Solving Parametric equations, introduction to spatial coordinates, vectors, matrixes theorem, equation solver systems, differential, gradient vector, curl and laplacian operator. Firs second and third order integrals. Cylindrical and spherical coordinates.	B

	Course Title	Credit	Hour				Description	Type* of Course
			Total	Theory	Practical	Design Workshop		
05	General Physics II	3	51	51	-	-	The principles of electricity physics, electrical devices and electrical distribution methods	B
06	General Physics I Lab	1	51	-	51	-	Implementing theoretical principles of Mechanical Physics in a physics laboratory in practical ways.	B
07	General Physics II Lab	1	51	-	51	-	Implementing theoretical principles of electricity physics, electrical devices and electrical distribution methods	B
08	Computer Programming	3	51	51	-	-	Introduction to computer history, hardware and software. Knowing programing languages and categories. Flowcharts and algoritms. Logic structures and subrutines. Work with a programming language.	B
09	Electromagnetic	3	51	51	-	-	Vector analysis, Coulomb's and Gauss' laws, electric potential, Laplace's and Poisson's equations, electrostatic fields in material media, electrostatic energy, electric current, Biot Savart's law, magnetic potentials, Faraday's law, magneto static fields In material media, magneto static energy, magnetic circuits, displacement current, Maxwell`s Equations .	P

10	Differential Equations	3	51	51	-	-	Introduction to Differential equations and how to solve them. curves categories, first order linear differential equations, second order, introduction to methods of solving these equations. Bessel and gamma function. Laplace transform and applications.	B
11	Electric Circuits I	3	51	51	-	-	Network graph-Kirchhoff's laws-Linear and nonlinear components-Dependent and independent sources-nodal and mesh analysis-Analysis of resistor circuits-Norton's and Thevenin's theorems -Equivalent resistance-Superposition theorem-Operational amplifier-Capacitor and inductor- RC, RL and RLC circuits- Step response-Impulse response-Transient and steady-state responses-Linear time-invariant circuits-Convolution integral-Sinusoidal steady-state analysis-Frequency response-Three-Phase circuits.	P
12	Electric Circuits and Measurement Lab	1	51	-	51	-		P
13	Electric Measurement	3	51	51	-	-	Concepts and importance of electrical measurements, primary definitions, components of measurement systems, errors and error analysis, classification of measurement equipment, ordinary oscilloscope, recorders, analog measuring equipment (with permanent magnets, moving coils, moving soft iron, electrodynamics, inductive Ferro dynamic, electrostatic), DC/AC ammeters and voltmeters, methods of measuring very low and very high values of voltage and current, measuring equipment with multipliers, single and three phase, active and reactive power meters, measurement of resistance, capacitance, and inductance, Q meters, bridges and their applications, Electric calibration, transducers, digital measuring equipment.	P

14	Numerical analysis	2	34	34	-	-	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.	B
15	Electric Circuits II	3	51	51	-	-	Coupling components and coupled circuits, nodal and mesh analysis, loop and cut-set analysis, natural frequencies, system function and frequency response of LIT Networks, state equations Analysis, network analysis in frequency domain, network theorems (Reciprocity, Thevenin, Norton, substitution, superposition, Telegan), two port networks (Impedance, AdmiHance, Hybrid and Transmission Matrixes), Graph theory in network analysis, Laplace transform and its application in LIT networks.	P
16	Engineering Mathematics	3	51	51	-	-	Engineering applications of mathematical methods. Topics include ordinary differential equations, linear algebra, calculus, Fourier analysis, Laplace transform and partial differential equations.	P

19	Electronics I	3	51	51	-	-	N and P type semiconductors, current and voltage equations, diode equivalent circuit, diode circuit, half-wave and full-wave rectifiers, clipping circuits, clamping circuits, multipliers, transistors and their biasing, operating points for various transistor circuit configurations, low frequency and small signal equivalent circuits of transistors, single stage transistor amplifier, transistors in switching circuits, Multi – stage amplifiers.	P
18	Electric Machines I	3	51	51	-	-	Magnetic circuits, magnetic field energy, force and torque in electromagnetic system, DC machines: machine construction, review and determination of electromotive force (emf), armature winding, armature reaction, compensating windings, types of machine excitations, load haracteristics of motor and generators. Control of DC motors, loss and efficiency, parallel connection of DC generators, various applications of DC machines.	P
19	Logic Circuits	3	51	51	-	-	Number systems, Boolean algebra and related rules, Logic functions and their reduction, Logic gates and logic families (such as RTL, DTL,TTL, ECL, CMOS). Combinatorial circuits (such as comparators, coders, code converters, combiners), Sequential circuits(such as flip flops, shift registers, counters, synchronous and synchronous logic circuits), study of various types of codes.	P

20	Engineering Probability and Statistics	3	51	51	-	-	Random experiment model, random variables, functions of random variables, and introduction to random processes.	P
21	Systems and Signals Analysis	3	51	51	-	-	Mathematical modeling of physical systems and signals. Representation of signals in terms of basis functions. Fourier series expansions, Fourier Transforms, Laplace and z-Transforms. Input-output relations, convolution. Transfer functions. Bode plots. Poles/zeros and s- and z-plane methods. Applications.	P
22	Electronics II	3	51	51	-	-	Physics of FET transistor, FET bias and amplification circuits, power amplifiers, current sources, feedback in amplifiers, DC amplifiers, differential amplifiers, operational amplifiers, offset in OP Amps and its compensation, various linear and nonlinear applications of OP Amps , regulated power supplies.	P
23	Computer Architecture	3	51	51	-	-	Principles of an assembly language programming, introduction to computer architecture, internal representation of data and instruction, memory organization, microprogramming multi-level machines, Control memory, common bus organization, stack organization and RISC and CICS structures, pipeline and basics of parallel machines.	S

	Course Title	Credit	Hour				Description	Type* of Course
			Total	Theory	Practical	Design Workshop		
24	Electric Machines II	3	51	51	-	-	Transformers: Derivation of equivalent circuit Transformer performance, efficiency, Voltage regulation, and per-unit values autotransformers, parallel operation, three-phase transformers. Three-phase induction motors: machine structure, AC machine windings, rotating field, , equivalent circuit, speed-torque characteristics, speed control, starting methods. Introduction to single – phase induction motors, Introduction to synchronous machines	P
25	Electronics I Lab	1	51	-	51	-	Familiarization with diodes and their volt-ampere characteristics, diode applications in rectifiers, diode applications as clipper ,clamper and limiter, voltage multipliers, familiarization with transistors, such as their types, measurement of leakage currents (ICBO,ICEO,ICES)and, input/output characteristics curves of transistors (such as PNP and NPN), determination of h parameters by transistor characteristics, investigation of active states of transistors (cut-off, saturation, operating point), transistor amplification in configurations of common-emitter, common-collector and common-base, Darlington amplifiers, two – stage amplifier, simple power supplies using Zener diode and transistors.	P

26	Logic Circuits Lab	1	51	-	51	-	Logic gates, familiarization with several logic circuits and determination of parameters of digital IC's, Several combinational circuits (decoder, multiplexer, parity generators and checkers), displays, Study of types of flip flops, asynchronous counters, synchronous counters, familiarization with several IC counters, shift registers.	P
27	Communication I	3	51	51	-	-	Short description of an analog communication system, analysis of deterministic signals in frequency domain, analysis of random signals, noise in communication systems, white noise, noise temperature, noise band-width, signal transmission in base band, linear distortion, nonlinear distortion, analog modulation systems, analysis of linear modulations such as AM, VSB, DSB, and SSB, linear modulation and demodulation techniques also combined with FDM, nonlinear modulation techniques such as PM and FM, noise and interference effects on various types of modulation, pulse modulation, survey of sampling techniques for analog pulse modulations such as PAM, PPM, and PDM, familiarity with digital modulation systems such as FSK, PSK, and ASK.	S

	Course Title	Credit	Hour				Description	Type* of Course
			Total	Theory	Practical	Design Workshop		
28	Linear Control Systems	3	51	51	-	-	Classical (transfer function) and modern (state variable) control techniques. Both time domain and frequency domain techniques are studied. Traditional proportional, lead, lag, and PID compensators are examined, as well as state variable feedback.	P
29	Power System Analysis	3	51	51	-	-	Symmetrical components and fault calculations, power system stability, generator modeling (circuit view point), voltage control system, high voltage DC transmission, and system protection.	P
30	Electric Machines I Lab	1	51	-	51	-	Work with DC machines such as motor and generators machine construction, review and determination of electromotive force (emf), armature winding, armature reaction, compensating windings, types of machine excitations, load characteristics of motor and generators. Control of DC motors, loss and efficiency	P
31	Microprocessors	3	51	51	-	-	Basic hardware and software concepts of embedded microprocessor systems (AVRs and ARMs) and interfacing with other hardware components. Simple circuits are designed and drivers to run them are written. Design and build hardware and write drivers in assembly or C programming languages.	S

32	Pulse Techniques	3	51	51	-	-	Pulse shaping by active and passive circuits, linear systems In pulse regimes, comparators, Schmitt triggers, single state and double state and oscillating multi vibrators, negative resistance and its uses, pulse amplifiers, circuits for linear voltage variation, triggering, operational amplifiers in pulse techniques	S
33	Modern Physics	3	51	51	-	-	Introduction and analyses of relativity and quantum theorem. Get knowing atoms structure and models.	S
34	Communication Circuits	3	51	51	-	-	Introduction to RF circuits, impedance matching circuit design. RF transistors and small signal RF amplifier design, LC oscillator design, introduction to phase locked loops (PLL), design and their application in RF circuits. Mixer, Modulator/ Demodulator circuits, architecture of transceivers.	S

35	Electronics III	3	51	51	-	-	Small signal models of field – effect transistors and Bipolar junction transistors at high frequencies, frequency response of the circuits, design and analyze of cascade amplifiers at low and high frequencies using open circuit and short circuit time constants, tuned amplifiers wideband amplifiers, feedback and stability, frequency compensation, high frequency oscillators, current mirrors and active loads, operational amplifier behavior at high frequency, unity gain compensation.	S
36	Industrial Electronics*	3	51	51	-	-	Introduction to power electronics, Power semiconductor devices : Diode, BJT, SCR, MOSFET, IGBT, DIAC, TRIAC, GTO, …, Rectifiers : Single phase, Three phase, Six phase, Controlled, Uncontrolled, Resistive load, Inductive load, Source inductance considerations, DC-DC switching converters : Linear regulators, Basic converters-Buck, Boost, Buck-Boost, Cuk, Isolated Buck type converters: Forward, Dual switch forward, Push-Pull, Half bridge, Full bridge, Flyback converter, Snubber circuits : Turn on snubber, Turn off snubber, Inverters : Half bridge and Full bridge inverters with inductive and resistive loads, Three phase, inverters (120 degrees conduction, 180 degrees conduction), AC-AC converters : Cycloconverters AC-DC-AC ,AC voltage controllers, Power electronics applications.	S

37	Electronics II Lab	1	51	-	51	-	Designing amplifiers, Power amplifires, Feedbacks work with Op-amps.	S
38	Linear Control Systems Lab	1	51	-	51	-	Familiarization with DC servo-motors, position and speed feedback control systems. Designing Lead, Lag controllers for improvement of response of a position control system, Time – delay systems, implementation PID controller for the improvement of the response of a third order system. AC servo motor systems, wotk with MATLAB and PLC	S
39	Microprocessors Lab	1	51	-	51	-	Work with some models of microprocessors (AVRs) learn how to program them.	S
40	B.Sc. Project						Final project	S
41	Physics of Electronics	3	51	51	-	-	Semiconductor device characteristics and applications. Physical models of electronic conduction in solids, p-n junctions, bipolar and field effect transistors and other solid-state devices.	S
42	Communication Circuits Lab	1	51	-	51	-	Modulation and demodulation, Transmitters and receivers, Frequency response of LC and ceramic filters, Tunable RF resonant circuits, Buffers and Antenna impedance matching, AM/FM super heterodyne receiver, FSK demodulator, FM quadrature detector, various types of oscillators, Vco and PLL.	S
43	Electronics III Lab	1	51	-	51	-	Designing high frequency amplifiers, Oscillators, calculating frequency response of circuits, design filters	S

44	Pulse Techniques Lab	1	51	-	51	-	Monostable multivibrator, stable multivibrator, Schmitt trigger, IC 55, free running sweep, two-tone generator, signal shaping, S & H circuits, voltage controlled oscillator, voltage controlled multivibrator, analog switch.	S
45	Filters and Network Synthesis*	3	51	51	-	-	Introduction to network functions and their reliability conditions, amplitude characteristics approximations ,synthesis of driving point functions, frequency transformation, transfer function realization with two ports network terminated in one and two resistors, synthesis of time – delay filters, sensitivity, introduction to active filters, active synthesis of second order transfer functions, synthesis procedures for high order transfer functions, active synthesis with element substitution, introduction to switched capacitor filters.	
46	Elective courses	6	306	306	-	-	-	

Abbreviations: **B**=Basic, **P**=Principle, **S**=Specialized

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.

***these courses are elective, student have to select sum up 11 credit from elective courses.**