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

Industrial Training - 2 Credits

Full-time work experience in business, industry, government, and other areas of student career interest for 300 hours. The student and employer will be required to submit reports and evaluations on the experience to the departmental internship coordinator by the conclusion of the semester the student enrolled into the course.

Special Topics [FPGA] (Elective Course) – 3 Credits

This course provides an introduction to FPGAs as well as succinct overviews of fundamental concepts and basic programming. Architectures and configurations of FPGAs and other PLDs alongside of advantages and disadvantages, Basic design flows such as C/C++, DSP and HDL, Several programming technologies, presenting different ways of programming and an introduction to CADs, and finally, selecting the proper FPGA and peripheral devices for specific work are demonstrated. Simple practical project on Spartan II FPGA is a closure of this course.

Electric Installations (Elective Course) – 3 Credits

This course covers numerous issues including but not exclusive to: voltage drop, electrical wiring, electrical safety, cable sizing, electrical calculations, electrical standards, electrical design, electrical protection, safety, wiring and circuit breakers. Introduction to ETAP and Dialux softwares.

Television System (Elective Course) – 3 Credits

The course offers general knowledge regarding the structure of a television system. Firstly, Radio and TV broadcasting systems and frequencies are specified. Afterwards, internal circuits of a typical analog black and white television, with consideration of all the producing signals are surveyed. Finally, previous information is extended for a typical analog chromatic TV and image capture and display techniques are demonstrated.

B.Sc. Project - 3 Credits

Each individual or group will select, with faculty guidance and approval, a topic for independent research or investigation resulting in a thesis or project to be used to satisfy the requirement for the degree. An appropriate experimental or analytical thesis or project may be accepted.

Microprocessors – 3 Credits

Introduction to basic concepts in microprocessor systems. Architecture of microprocessor systems, and investigation of all phases of troubleshooting and implementation of reliable microprocessor systems. 8085 ,8086 and AVR ATmega8 microprocessors structure and operation. Hands-on experience, practical applications and projects. Teamwork, critical thinking and problem solving are emphasized.

Communication Circuits – 3 Credits

Analysis, design, and experimental evaluation of transistor-level communication circuits and micro-systems. Transmission lines, impedance matching, noise, distortion, tuned amplifiers, mixers, oscillators, phase-locked loops.

Industrial Electronics (Elective Course) – 3 Credits

A course on solid state power converters. Major topics include: switching devices (SCR, MOSFET, IGBT, GTO, etc.), dc-dc switch mode converters, diode and thyristor rectifiers, current and voltage source inverters, ac-ac converters and industry applications. Typical control, gating and protection schemes for these converters will also be discussed. Important concepts are illustrated through laboratory projects. Real-time DSP based experimental platform will be used in the projects.

Computer Architecture – 3 Credits

Number systems, codes and coding, minimization techniques applied to design of logic systems. Component specifications. Discussion of microprocessors, memory and I/O logic elements. Microcomputer structure and operation. I/O modes and interfacing. Machine language and Assembler programming. Design and application of digital systems for data collection and control of pneumatic hydraulic and machine systems. Laboratory work includes the use of microcomputers. Z80 microprocessor structure and operation.

Pulse Technique – 3 Credits

Basic Concepts (Switching Circuits, Ideal Pulse Signals, Ideal Switching Devices, Current Direction, Voltage Notation, Representing dc Source Voltages, Time-Varying Currents and Voltages); Pulse Waveform Analysis (Types of Pulse Distortion, tr-tf and tp, Tilt, Overshoot, Periodic Pulse Waveforms, Average Value (dc), Harmonic Content of Periodic Waveforms, Relationship between Harmonic Content and Shape, Effect of Linear Networks on Pulse Waveforms, Oscilloscope Effect on Pulse Measurements, Non-Periodic Pulses); RC Circuits With Pulse Inputs (Basic Capacitor Characteristics, Charging a Capacito, Discharging a Capacitor, The Exponential Form, RC Low-Pass & High-Pass Circuits, Low-Pass & High-Pass Circuit with Pulse Input, Natural and Forced Responses, RC Circuit Response to Periodic Inputs, Loading & Inductive Effects); Switching Devices (The Diode as a Switch, Analyzing Diode Circuits, Diode Switching Characteristics, The Bipolar Junction Transistor (BJT) as a Switch, Approximate Analysis of the Transistor Switch, Transistor Switching Times, Field-Effect Transistor (FET) Switches, Approximate Analysis of Switching Circuits); The Operational Amplifier (Basic Op-Amp Characteristics, Op-Amp Equivalent Circuit, Op-Amp Circuits: The Comparator, The Voltage-Follower, Non-Inverting Amplifier, The Inverting Amplifier, Variations in Open-Loop Gain, Avol, Op-Amp Frequency Response, Slew Rate, Offset Errors, Positive Feedback); Signal Conditioning Circuits (Diode Clipper (Limiter), Operational Amplifier Clipper Circuit, The Bipolar Transistor Inverter, Buffer Circuits, The Differential Comparator, The Schmitt Trigger); Logic Gates and Boolean Algebra (Diode OR Gate, Diode AND Gate, NOT, NOR, and NAND Gates, Boolean Algebra, The OR Operation, The AND Operation, The NOT Operation, Describing Logic Circuits Algebraically, Evaluating Logic-Circuit Outputs, Implementing Circuits from Boolean Expressions, NOR Gates and NAND Gates, The Power of Boolean Algebra, Boolean Theorems, Simplifying Logic Circuits, EXCLUSIVE-OR and EXCLUSIVE-NOR Circuits, Universality of NAND Gates and NOR Gates, Equivalent Logic Representations); Pulse Generating Circuits (Unijunction Transistor Operation, Unijunction Oscillator Operation, UJT Oscillator Circuit, Programmable UJT (PUT), Schmitt Trigger Oscillators, The 555 IC Timer, The 555 as a One-Shot, The 555 Oscillator, Oscillators Made from Inverters, Sweep-Voltage Waveform, Transistor Sweep Generator, Free-Running Sweep Generator, Oscilloscope Triggered Sweep Circuit)

Electronics III – 3 Credits

An advanced course on the analysis and design of electronic circuits. The topics to be studied include amplifier characteristics, amplifier design, amplifier applications, filters and tuned amplifiers, oscillators, power amplifiers and output stages, and signal generators. Circuit applications to such areas as instrumentation, signal processing and conditioning, communication, and control are considered. Important concepts are illustrated with laboratory experiments.

Physical Electronics – 3 Credits

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.

Electricity Workshop – 1 Credits

Fully practical course, which includes basic information about electrical wiring of apartments, demonstrating the concepts of control circuits for industrial uses and working with industrial motors.

Modern Physics – 3 Credits

This course studies the post-Newtonian conception of physics. Special theory of relativity, quantum phenomena related to electromagnetic radiation and material particles. The Bohr model of the hydrogen atom; the Schroedinger equation; the Heisenberg uncertainty principle. Selected topics in atomic and nuclear physics.

Power Systems Analysis I – 3 Credits

Overview of the power system; Introduction to Per Unit calculations; Power Generator and Transformer modeling and operation; Transmission line parameters and steady state operation of Transmission lines; Load Flow study and introduction to ETAP software; symmetrical and unsymmetrical fault analysis; introduction to protection schemes.

Communication Systems I – 3 Credits

Orthogonality and signal representation in continuous time. Fourier spectrum, Fourier transforms and applications to communications. Convolution. Transfer functions and filters. Power spectral density. Amplitude modulation and applications to techniques such as DSB, AM, SSB, etc. Angle modulation and the spectra of frequency modulated signals. Techniques for the generation and demodulation of FM signals. Introduction to noise and its effects in AM and FM systems.

Linear Control Systems – 3 Credits

Introductory course in control theory: system modeling, simulation, analysis and controller design. Description of linear, time-invariant, continuous time systems, differential equations, transfer function representation, block diagrams and signal flows. System dynamic properties in time and frequency domains, performance specifications. Basic properties of feedback. Stability analysis: Routh-Hurwitz criterion, Root Locus method, Bode gain and phase margins, Nyquist criterion. Classical controller design in time and frequency domain: lead, lag, lead-lag compensation, rate feedback, PID controller. Laboratory work consists of experiments with a DSP-based, computer-controlled servomotor positioning system, and MATLAB and Simulink assignments, reinforcing analytical concepts and design procedures.

Electronics II – 3 Credits

The course reviews the basic electronic concepts including analog and digital signals, rectifiers and wave shaping circuits, small-signal and large-signal analysis of amplifiers, differential and multistage amplifiers, amplifier frequency response, feedback and stability, etc. Short introduction to basics of semiconductor devices is given including junction diodes, bipolar transistors, and field effect transistors. The popular circuits using semiconductor devices are studied in details. Important concepts are illustrated with structured lab experiments and through the use of Electronic OrCAD circuit simulations

Electric Machines II – 3 Credits

Two main topics are detailed: Transformers and AC motors. Derivation of equivalent circuit Transformer performance, efficiency, Voltage regulation, per-unit values autotransformers, parallel operation, three-phase transformers all are discussed on transformers, and machine structure, AC machine windings, rotating field, equivalent circuit, speed-torque characteristics, speed control, starting methods, Introductions to single – phase induction motors, Introduction to synchronous machines in AC machines are surveyed.

Signals and Systems – 3 Credits

This course deals with the analysis of continuous-time and discrete-time signals and systems. Topics include: representations of linear time-invariant systems, representations of signals, Laplace transform, z-transform transfer function, impulse response, step response, the convolution integral and its interpretation, Fourier analysis for continuous-time signals and systems and an introduction to sampling.

Logic Circuits – 3 Credits

Boolean algebra, logic of propositions, minterm and maxterm expansions, Karnaugh maps, Quine-McCluskey method, melti-level circuits, combinational circuit design and simulation, multiplexers, decoders, programmable logic devices.

Electric Machines I – 3 Credits

This course firstly discusses about different aspects of magnetic circuits and provides fundamental information about DC motors, which are the main topic of this course. 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 are some of the subjects.

Electronics I – 3 Credits

Introduction to electronics, operational amplifiers, diodes, linear and non-linear circuit applications involving op-amps and diodes. Bipolar junction and field-effect transistors: physical structures and modes of operation. DC analysis of transistor circuits. The transistor as an amplifier and as a switch. Transistor amplifiers: small signal models, biasing of discrete circuits, and single-stage amplifier circuits. Biasing of BJT integrated circuits. Multi-stage and differential amplifiers. Frequency response of single-stage amplifiers. JFET and MOSFET transistors. Important concepts are illustrated with structured lab experiments and through the use of Electronic workbench circuit simulations.

Electrical Measurement – 3 Credits

Methods of measurements of basic electric and electronic parameters. Study of circuits and characteristics of major electronic instruments. Basic control circuits.

Electrical Circuits II – 3 Credits

AC power, 3-phase circuits. Mutual inductance, series and parallel resonance and two-port networks. Frequency response, including Bode plots.

Numerical Calculation – 2 Credits

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.

Electromagnetism – 3 Credits

Brief review of vector analysis, Time-varying fields and Maxwell's equations, Scalar and vector potentials, boundary conditions, retarded potentials. The wave equation. The uniform plane wave, wave polarization, wave reflection. Transmission lines, Smith chart. Rectangular waveguides. Radiation from short dipoles, half- and quarter-wavelength antennas, the radiation resistance.

Electrical Circuits I – 3 Credits

This course covers general electric circuit parameters and laws. Topics include: basic electric circuits, voltage and current sources, resistance, analysis of DC circuits, power considerations. Concepts of capacitance, inductance, and their transient behaviour. Introduction of AC sources, phasors, reactance and impedance, AC analysis of RC, RL, and RCL circuits, the effect of resonance, real and complex power in reactive loads.

Engineering mathematics – 3 Credits

Engineering applications of mathematical methods. Topics include ordinary differential equations, linear algebra, calculus, Fourier analysis, Laplace transform and partial differential equations.

English Language for Electrical Engineers – 2 Credits

Engineering technical words, especially in the major of Electrical Engineering for future use. Other skills such as Listening, Speaking and Reading are evaluated.

General Mathematics I & II – 3 Credits each

Mathematical principles such as Functions, Limits and Continuity, Polar Coordinates, Integral, Series and Advanced principles of mathematics and instructions for solving equations.

Statistics and Probability for Engineering – 3 Credits

Fundamentals of probability, conditional probability, Bayes rule, random variables, functions of random variables, expectation and high-order moments, Markov chains, hypothesis testing.

Physics II – 3 Credits

Electric charge and Coulomb's law, the electric field, Gauss' law, Electric Potential Energy and Potential, the electric properties of materials, Capacitance and Capacitors, DC Circuits, the magnetic field and magnetic field of a current, Faraday's law in induction, magnetic properties of materials, inductance, AC circuits, Ampere's law.

Differential Equations – 3 Credits

Analysis of engineering problems formulated in terms of partial differential equations. Solutions of these mathematical models by means of analytical and numerical methods.

Computer programming – 3 Credits

Introduces computer sciences and the use of the computer for solving scientific and engineering problems using the C/C++ programming language. Students gain experience using graphical interface and object-oriented programming concepts. Primarily for engineering students who are not planning to take advanced computer science courses.

Physics I– 3 Credits

Measurement, Motion in two and three dimensions, forces and Newton's laws and its application, momentum, systems of particles, rotational kinetics, rotational dynamics, angular momentum, work and kinetic energy, potential energy, conservation of energy, gravitation, Temperature, molecular properties of gasses, first law of thermodynamics, entropy and second law of thermodynamics.
