

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

Brief Description of Courses in Biomedical Engineering, Bachelor's Program

Written by Parastu Rahgozar

- **General mathematics I**

Description: Introduction to Calculus, Cartesian coordinates, differentiation and limit functions, approximation of roots of equations- 48 hours-

- **General mathematics II**

Description: Introduction to differential calculus, integral double and triple, three-variable equations, and Matrix series analysis, partial derivative

Duration: 48 hours

Source: Calculus: Several Variables. Robert A. Adams. Prentice Hall. 2006

- **General Physics I**

Description: Familiarity with sorts of movements- Cinematic and Dynamic motion analysis. Measurement, motion in one dimension, motion in one page

Duration: 48 hours

- **Physics I Laboratory** - Related to the course

Duration: 48 hours

- **General Physics II**

Description: Understanding the principles and concepts of static electricity and magnetism, and magnetic field and electric potential

Duration: 48 hours

- **General Physics II Laboratory** - Related to the course source

Duration: 48 hours

Source: Fundamentals of Physics. D. Halliday and R. Resnick (1986). John Wiley & Sons. Inc.

- **Differential Equations**

Description: The use of second-order equations in physics, Laplace transforms, curves and vertical routes

Duration: 48 hours

Source: Elementary Differential Equations and Boundary Value Problems. 8th Edition. William E. Boyce and Richard C. DiPrima Wiley, 2004

- **Numerical Calculation**

Description: Calculation of Errors, Lagrange Method, Simson Method, Euler's Method, ...

Source: Numerical Methods and Software . Kahan, Moler and Nash, Prentice - Hall, 1981.

- **The principles and fundamental of computers and networks**

Description: Familiarity with computer hardware, software useful for medical research, computer networks and global communication medium

Duration: 32 hours

Source: Computer essentials for beginners. Springer press. 2005

- **Biostatistics and Probability**

Description: Statistical parameters, random sampling, sampling methods, ANOVA, regression and possibilities

Duration: 48 hours

Source: Probability and Statistics, Athanasios Papoulis. Prentice Hall. 1989

- **Algorithmic Calculation**

Description: Structure of programming, flowcharts and basic knowledge of rules in programming

Duration: 32 hours

Source: The Scheme Programming Language (3rd Edition). R.K. Dybvig. MIT Press, 2003

- **Physiology**

Description: Cardiovascular physiology, respiratory, gastrointestinal, central nervous system, kidney and urinary tract

Duration: 48 hours

- **Physiology Laboratory** - Related to the course source

Duration: 48 hours

Source: Textbook Of Medical Physiology, C. Guyton and John E. Hall, Elsevier. 2006 (11 th Edition)

- **Anatomy**

Description: Introduction to the anatomy of human body

Duration: 32 hours

Source: Gray's Anatomy for Students. Richard Drake, Wayne Vogl, Adam Mitchell. Churchill Livingstone, 2004

- **Medical Physics**

Description: Solid state physics, the physics of fluids in the body, pressure physics of sound in the ears and hearing, physics of vision - the use of ultrasound in medical diagnosis - use of electricity in the body

Duration: 48 hours

Source: Medical Physics, JR. Cameron and JG. Skofrnick. John Wiley and Sons. 1978

- **Introduction to Biomedical Engineering**

Description: Introduction to Bioelectrics, Biomaterials and Biomechanics, transducers and electrodes, biopotentials, amplify and filtering of biosignals

Duration: 48 hours

Source: introduction to Biomedical Engineering, Bronzino

- **Medical Informatics I**

Description: Medical Terminology, Factors to determine the patient's condition and the information extracted from them, how to record and archive patient information

Duration: 48 hours

Source: Handbook of Medical informatics. J.H. Yan BemmeL M.A. MU SEN. IC Helder Houten/Diegem. 1997

- **Research methodology and medical informatics**

Description: Various methods of searching databases, how to write a thesis proposal, description of subject and variables

Duration: 32 hours

- **Computer Programming (Web)**

Description: Introduction to Visual Studio, and programming with MATLAB

Duration: 32 hours

Source: Sams Teach Yourself C# in 24 Hours. J. Foxall and W. Haro-Chun. Sams Publishing, 2002

- **Hospital General Standards, Safety and Protection**

Description: Standards of safety, electrical safety tests, GFCI systems, physiological effects of current passing through the body, IEC standard systems, Isolation, Micro and Macro Shock

Duration: 32 hours

Source: Principles of Medical Equipment Design, Webster

- **Engineering Mathematics**

Description: Fourier series, Fourier integral, Fourier and wave equations

Duration: 48 hours

Source: Complex Variables and Applications, James Ward Brown, Ruel V. Churchill, McGraw-Hill Science, 2008

- **Hospital and Medical clinics general equipment**

Description: Brief introduction for medical equipment, categorized by invasive or non-invasive medical device based, imaging, diagnosis, treatment, laboratory use

Duration: 32 hours

Source: Joseph J. Carr and John M. Brown," Introduction to Biomedical Equipment Technology

- **General Equipment workshop of Hospitals and medical Clinics** - Related to the course source

Duration: 48 hours

- **General Public Health**

Description: The history of medical issues, health care, maternal and child health, environmental health, nutrition and eating habits

Duration: 16 hours

Source: WHO publications

- **Principles of Rehabilitation and its Equipment**

Description: Joints and kinesiology, orthotics and prosthetics, gait analysis, muscle biomechanics, Physiotherapy

Duration: 48 hours

Source: Essential Physical Medicine and Rehabilitation. G. Cooper and N.E. Strauss. Humana Press. 2006

- **Principles and Generalities of Health Services Management**

Description: Financial management, the various stages of planning in health care, hospital management systems, international organizations

Duration: 32 hours

- **Principles of Medical Imaging and Radiology**

Description: X-ray generator, X-ray tube, radiology history, physics of radiology, scattering and absorption of radiation, Sonography, MRI

Duration: 48 hours

Source: The Physics of Diagnostic Imaging. David J. Dowsett, Patrick A. Kenny and R. Eugene Johnston, Oxford University Press. 2006 (Second Edition)

- **Technical English Language**

Description: Medical Terminology, Suitable Translation and Pronunciation

Duration: 32 hours

Source: The Biomedical Engineering Handbook, J.D. Bronzino, CRC Press.

- **Biophysics**

Description: Introduction to Biology, Molecular Structures and Interaction, Cellular Membrane and role of Proteins, Carbohydrates, Nucleic Acids and Lipids in Body

Duration: 32 hours

- **Special Topic I (Ultrasound)**

Description: Physics of Mechanical and Sound Waves, Ways to produce these waves and their application in ultrasound, different modes of Imaging, Resolution, Doppler and Power Doppler Imaging, Cardiovascular Imaging, ...

Duration: 48 hours

Source: Diagnostic Ultrasound, Imaging and Blood flow Measurements, K. Kirk Shung, 2005

- **Educational and introductory workshop on health and treatment centers**

Duration: 32 hours

- **Educational and introductory practical workshop on health and treatment centers**

Description: 160 hours of Internship in a Hospital or Company

Duration: 48 hours

- **Electrical Circuits I**

Description: Compact circuits, KVL, KVL, Linear and nonlinear resistances, Operational Amplifiers, RL and RC Circuits

Duration: 48 hours

Source: C.A. Desoer, E.S. Kuh, "Basic Circuit Theory", McGraw-Hill. 1970

- **Electrical Circuits I Laboratory** - Related to the course

Duration: 48 hours

- **Electrical Circuits II**

Description: Linear and Nonlinear Circuits, Graphs, Mesh and Nodal analysis, Bipolar, State Equations in Circuits, Matrix

Duration: 48 hours

Source: C.A. Desoer, E.S. Kuh, "Basic Circuit Theory", McGraw-Hill, 1970

- **Electronics I**

Description: Introduction to Semi-conductors (Diodes) and their application, Design of Transistors (FET, JFET, MOS)

Duration: 48 hours

Source: Electronic devices and circuit theory, R. Boylestad, L. Nashlesky, 4th edition, Prentice-Hall, 1987

- **Electronics I Laboratory** - Related to the course

Duration: 48 hours

- **Electronics II**

Description: Differential amplifiers, positive and negative feedback, power amplifier applications in biomedical engineering, Structure of amplifiers

Duration: 48 hours

Source: Electronic Devices and Circuit Theory {91h Edition), R. L. Boylestad, L. Nashelsky, Prentice Hall, 2006

- **Bioelectric Phenomena**

Description: Production of biopotentials in excitable cells and strings, EEG, ECG and EMG receiving

Duration: 48 hours

Source: Bioelectricity: A Quantitative Approach. Third Edition, by Robert Plonsey and Roger C. Barr, ISBN 978-0-387-48864-6, e-ISBN 978-0-387-48865-3, Springer Science Business Media, LLC, 2007.

- **Logical Circuits**

Description: Numerical Systems, Codes, Logic gates, Simplify Boolean functions, Flip-flops, Combined Logical Circuits (Decoder, MUX, ..), ICs and ASM design

Duration: 48 hours

Source: Digital Design, M. Mano, Pearson/Prentice-Hall, 3rd Edition, 2008

- **Logical Circuits Lab** - Related to the course

Duration: 48 hours

- **Computer Architectures**

Description: Introduction to CPU, RISC, CISC, Assembly Language, Different types of Memories, Basic Design of a Computer

Duration: 32 hours

Source: Computer System Architecture, M. Mano, Prentice-Hall, 3rd Edition, 1993

- **Microprocessor I**

Description: AVR microprocessors, programming with Code-Vision and circuit design with Proteous

Duration: 48 hours

Source:1. Microprocessors and Interfacing, Programming and Hardware, Douglas Hall, McGraw-hill, 1997

2. IBM PC and Compatible Computers: Assembly Language, Design, and Interfacing Volumes I & II (41h Edition). Muhammad Ali Mazidi, Janice Gillispie-Mazidi,, Prentice-Hall, 2003

- **Microprocessor Lab** Related to the course

Duration: 48 hours

- **Electrical Machines (AC, DC)**

Description: Electromagnetic Circuits, Ideal and Real Transformers and their structure, DC machines, AC asynchronous and synchronous motors

Duration: 48 hours

Source: Principles of Electric Machines and Power Electronics, P.C Sen, 1993

- **Introduction to Biological and computational Intelligence**

Duration: 48 hours

Source: Neural Networks and Artificial Intelligence for Biomedical Engineering, D. L. Hudson, M. E. Cohen, Wiley-IEEE Press, 1999

- **Signals and Systems Analysis**

Description: Time Continuous and discrete signals, LTI systems, Fourier Conversion, Frequency response, phase and amplitude display

Duration: 48 hours

Source: A.V. Oppenheim, A.S. Willsku and S.H. Nawab , " Signals and Systems" . 2"d ed. Prentice-Hall ,1997

- **Linear Control systems**

Description: Analysis of Classic and Modern Control Systems, Phase and Time-based Control, Nyquist sampling, bode plot, Modeling linear systems

Duration: 48 hours

Source: R B.C. Kuo, F. Golnaraghy, "Automatic Control systems", 81h ed. ,Jog wiley, 2003

- **Electronic Measurement**

Description: Displacement Sensors such as: Laser, LVDT, Light Sensors and accelerometers such as Piezoelectric, stress-strain sensors and Temperature sensors

Duration: 32 hours