

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

The Course Description, Detailed Programs

General Courses

Physical Education (I) * Karate **(1 units)**
Quran Interpretation **(2 units)**
Introduction to Persian Literature **(3 units)**
English for the Students of Engineering **(3 units)**
The Analytic History of Early Islam **(2 units)**
The Political Thought of Imam Khomeini **(2 units)**
Rights in Islam **(2 units)**
Physical Education (II) * Badminton **(1 unit)**
Man in Islam **(2 units)**
Applied Ethics **(2 units)**

Basic Courses:

Math (I) **(3 units)**
General Physics (I) **(3 units)**
Math (II) **(3 units)**
Differential Equations **(3 units)**
General Physics (II) **(3 units)**
Numerical Analysis **(2 units)**
Engineering mathematics **(3 units)**

General Physics Lab (I) **(1 unit)**
Basic Electrical Eng. (I) **(3 units)**
General Physics Lab (II) **(1 unit)**
Basic Electrical Eng. Lab. (I) **(1 unit)**
Engineering Statistics **(3 units)**

Practical Courses:

Engineering Drawing (I) **(2 units)**
Engineering Drawing (II) **(2 units)**
Training **(2 units)**
Aircraft Instruct. & Measure. W. S **(2 units)**
General Workshop **(1 unit)**
Aircraft System Motor & Body W. S **(2 units)**
Fluid Mechanics Lab **(1 unit)**

Specialized Courses

Computer Program Fortran (3 units)

This course provides us with the basic computer programming language tools and principles.

Fundamentals of Aerospace Eng.(2 units)

This course provides us the basic concepts in various aspects and subjects of Aerospace engineering.

Reference: John David Anderson, Introduction to flight

Statics (3 units)

Knowledge of vector mechanics, grasp the meaning of magnitude and direction of a vector, master the mechanics of vector algebra, master the balance of forces and moments to ensure equilibrium for 2D and 3D structures, learn how to calculate the centroid and the moment of Inertia of lines and areas.

Thermodynamics (I) (3 units)

Fundamental concepts and definitions

- Properties of pure substances
- Work and heat
- The first law of Thermodynamics
- The second law of Thermodynamics
- Irreversibility and availability

References: Claus Borgnakke, Richard Edwin Sonntag, Fundamentals of thermodynamics

Fluid Mechanics (3 units)

Introduction

- Pressure Distribution in a Fluid
- Integral Relations for a Control Volume
- Differential Relations for a Fluid Particle
- Dimensional Analysis and Similarity
- Viscous Flow in Ducts
- Flow Past Immersed Bodies
- Open Channel Flow

Reference: Frank M. White, Fluid mechanics

Strength of Materials (3 units)

Concept of stress

- Stress and strain, axial loading
- Torsion

Reference: Beer, Johnston & Dewolf, Mechanics of Materials

Dynamic (I) (3 units)

Principles of Mechanics in Motion.

Mainly about kinematics and dynamics of mechanical systems.

Reference: James L. Meriam, L. Glenn Kraige, Engineering Mechanics and Dynamics

Thermodynamic (II) (3 units)

Introduction

- Power and refrigeration systems
- Analysis of gas turbine thermodynamic cycle
- Gas mixture
- Thermodynamic relations
- Chemical reactions

Reference: Claus Borgnakke, Richard Edwin Sonntag, Fundamentals of thermodynamics.

Aerodynamics (I) (3 units)

- Fundamental principles and equations
- Fundamental of in viscid, incompressible flow
- Incompressible flows over airfoils -Incompressible flow over finite wings -Three dimensional incompressible flow

Reference: John David Anderson, Fundamentals of Aerodynamics.

Aerodynamics (I, II) Lab. (2 unit)

Performing some fundamental experiments in aerodynamics by a subsonic and supersonic wind tunnel.

Workshop Engineer Notes

Dynamic (II) (2 units)

Introduction

- Angular momentum and impact
- Kinetics plane motion of rigid bodies
- Energy methods for rigid bodies
- The general equations of motion of rigid body
- The equations of motion using Euler angles

References::Henri Irving. Shymz, Greenwood, principles of dynamics and Merriam, dynamic, Sixth Edition

Aerodynamic (II) (3 units)

Introduction

- Compressible flow principles
- Normal and oblique shock wave and expansion wave
- Compressible flow through nozzles, diffusers and wind tunnels
- Subsonic incompressible flow over airfoil
- Supersonic and hypersonic flow
- Viscous flow

Reference: John David Anderson, Fundamentals of aerodynamics.

Material Science (3 units)

Getting familiar with materials which extensively used in manufacturing and engineering areas and also their behavior in case of fatigue, failure, etc.

Heat Transfer (3 units)

Introduction to heat transfer

- Conduction
- Convection
- Heat transfer in external and internal flow
- Free convection
- Radiation

Reference: Jack Philip Holman, Heat transfer

Structure Analysis (3 units)

Introduction

- Basic elasticity
- Torsion of solid section
- Energy method for structural Analysis
- Bending of thin plates
- Aircraft structure

Reference: Tomas Henry Gordon Megson, Aircraft structures for engineering students.

Flight Mechanics (I) (3 units)

Introduction

- Airplane aerodynamics
- Airplane propulsion system
- Airplane equation of motions
- Airplane Steady flight performance
- Airplane accelerated flight performance

Reference: John David Anderson, Aircraft Performance and Design.

Automatic Control (3 units)

- Introduction to Control Systems
- The Laplace Transform
- Mathematical Modeling of Dynamic Systems
- Mathematical Modeling of Fluid Systems and Thermal Systems -Transient and Steady-State Response Analyses
- Root-Locus Analysis.
- Control Systems Design by the Root-Locus Method -Frequency-Response Analysis.
- Control Systems Design by Frequency Response -PID Controls and Two-Degrees-of-Freedom -Control Systems.

Reference: Katsuhiko Ogata, Modern control engineering.

Principles of Propulsion (3 units)

Introduction

- Jet propulsion principle
- Parametric Cycle Analysis of Real Engines
- Engine Performance Analysis
- Inlets, Nozzles, and Combustion Systems
- Axial compressors
- Axial Turbines
- Centrifugal compressors

Reference: Philip Graham Hill, Carl R. Peterson, Mechanics and thermodynamics of propulsion .

Flight Mechanics (II) (3 units)

Introduction

- Stability and Control of Aircraft
- General Equations of Unsteady Motion
- The Stability Derivatives
- Stability of Uncontrolled Motion
- Response to Actuation of the Controls-Open Loop
- Closed-Loop Control
- Longitudinal motion
- Lateral Motion

Reference: Jan Roskam, Airplane flight dynamics and automatic flight controls.

Vibration (3 units)

Introduction

- Oscillatory Motion
- Free Vibration
- Harmonically Excited Vibration
- Systems with Two or More Degrees of Freedom
- Lagrange's Equation
- Vibration of Continuous Systems
- Introduction to the Finite Element Method

Reference: William Thomson, Theory of Vibration with Applications

Aircraft Design (I) (3 units)

Introduction

During this course we learn about aircraft conceptual and preliminary design based on Jan Roskam text book. The course contents are:

- Requirements development
- Weight estimation
- Cost estimation and constraint diagrams
- preliminary sizing - Design requirement sensitivities
- Weight estimation
- Wing area selection
- Power & propulsion system requirements

Reference: Jan Roskam, Airplane Design.

Research Method & Report Writings (2 units)

Introduction to write an academic paper, presentation and poster.

Experimental Aerodynamics (3 units)

Introduction

- Dimensionless numbers
- Types of wind tunnel
- Wind tunnel design methods
- Measuring instruments in the wind tunnel
- Find ways of streaming in the wind tunnel
- How to use the wind tunnel results

Thermodynamic & Heat Trans. Lab. (1 unit)

Contains experiments about thermodynamics systems i.e. Compressors, diesel engine, gas turbine, supersonic nozzle.

Engineer Workshop notes.

Aircraft Design (II) (3 units)

Continuing Aircraft Design (I) with more details.

Reference: Jan Roskam, Airplane Design.

Turbo machines (3 units)

Introduction

- Dimensionless number turbomachinery
- The governing equations turbomachinery
- Waste of energy and efficiency
- Cascades principles of two-dimensional
- Aerodynamic forces in Cascades
- In experiments measuring principle Cascades
- Fluid mechanics and thermodynamics axial compressors
- Compressor efficiency
- Reaction coefficient compressor
- Ideal characteristic curve and the actual turbine
- Fluid mechanics and thermodynamics axis wind turbines
- Turbine efficiency
- Coefficient of reaction turbine
- Ideal characteristic curve and the actual turbine
- Design of axial compressor
- Axial turbine design

Structural Design of Aircraft (3 units)

Includes loading and analysis of structures used in aerial vehicles (wings, empennage, fuselage ...)

Strength of Material Lab (1 unit)

Performing and analysis some fundamental experiments in Mechanics of materials (i.e. tension, fatigue and bending test). We also build a composite material sample.

Engineer Workshop notes

Final Project (3 units)