

Noorul Islam Centre for Higher Education

(Deemed to be University u/s 3 of the UGC Act 1956)

Kumaracoil, Thuckalay, Kanyakumari District - 629 180

Accredited by NAAC with 'A' Grade

AE25 M.E AERONAUTICAL ENGINEERING



Student Performance and Learning Outcomes

AE25 M.E AERONAUTICAL ENGINEERING.

Programme Outcome - PO	
PO-A	To apply the knowledge of mathematics, science and engineering.
PO-B	Ability to analyze, interpret and solve complex engineering problems.
PO-C	Ability to visualize and work on laboratory for multidisciplinary needs.
PO-D	Ability to integrate all the modes of analysis for accuracy solutions during arbitrary problems.
PO-E	Ability to demonstrate the skills using modern engineering tools and equipments.
PO-F	Ability to function on multidisciplinary teams.
PO-G	Graduates will be able to communicate effectively in both verbal and written form.
PO-H	Graduates will contribute to the needs of the society.
PO-I	Able to get broad education necessary to understand the impact of engineering solutions in Global economic and social content.
PO-J	Ability to demonstrate the knowledge of professional and ethical responsibilities.
PO-K	Graduates will achieve successful career in Global industry.
PO-L	Graduates will develop confidence for self-esteem and ability for lifelong learning.
PO-M	Ability to lead the future of Aeronautics.

PROGRAM SPECIFIC OUTCOMES (PSOs)	
PSO 1	The ability to analyze, design and implement the applications of Specific Aircraft systems for complex engineering problems for Structural , Propulsion , Fluid analysis and Heat transfer applications by applying the knowledge of Basic Sciences, Engineering, Mathematics and Engineering fundamentals.
PSO 2	The ability to adapt for rapid changes in Tools and Technology with an understanding of Societal and Ecological issues relevant to professional engineering practice through life-long learning.
PSO 3	Excellent adaptability to function in multi-disciplinary work environment, good interpersonal skills as a leader in a team in appreciation of professional ethics and societal responsibilities.

Sl.No	Subject Code	Subject Name
Course Code : SEMESTER- II		
1.	AE 2508	HIGH SPEED AERODYNAMICS.
2.	AE 2506	FINITE ELEMENT METHODS.
3.	AE2505	FLIGHT DYNAMICS.
4.	AE2509	AERO ELASTICITY.
5.	AE2507	COMPUTATIONAL FLUID DYNAMICS.
6.	AE25C2	AVIONICS.
7.	AE2572	CFD LAB
SEMESTER- IV		
8.	AE25P5	PROJECT WORK –PHASE II

AE 2508- HIGH SPEED AERODYNAMICS.	
CO1	To remember the basics of high speed aerodynamics.
CO2	To understand the concepts of boundary layer theory.
CO3	Implement the concepts of launch vehicle configuration and drag estimation theory.
CO4	Ability to analyze the slender and blunt body aerodynamics.
CO5	To analyze the various aerodynamic aspects of launching vehicle phases.

AE 2506- FINITE ELEMENT METHODS.	
CO1	Formulate and solve axially loaded bar problem
CO2	Implement numerical methods to solve mechanics of solid problem.
CO3	Ability to analyze and solve complex engineering problem.
CO4	Implement the formulation techniques to solve two dimensional problem
CO5	To apply the knowledge of mathematics and engineering.

AE2505- FLIGHT DYNAMICS.	
CO1	To understand the basic principles of aircraft performance
CO2	To apply the aircraft performance in level, climbing and gliding flight.
CO3	Ability to analyze the aircraft performance in accelerated flight.
CO4	To understand and analysis the aircrafts longitudinal stability and control.
CO5	To understand the lateral, directional stability and controllability of airplanes.

AE2509- AERO ELASTICITY.	
CO1	To Apply The Basic Knowledge Of Aero elastic Phenomina
CO2	To Understand The Theoretical Concepts Of Aeroelasticity
CO3	Ability To Solve And Analyse Aeroelastic Problem In Various Aspects
CO4	Ability to analyze the flutter concept through various phenomena
CO5	Ability to solve various aero elastic problems in aircraft.

AE2507-COMPUTATIONAL FLUID DYNAMICS.

CO1	To understand the basic concepts of computational fluid mechanics.
CO2	To understand the concepts of Grid generation in computational fluid dynamics.
CO3	To analyses the concepts of transonic relaxation techniques used in the computational fluid dynamics.
CO4	To understand and analysis the concepts of time dependent methods used in CFD analysis
CO5	Evaluate the concepts of panel methods in CFD analysis

AE25C2- AVIONICS.

CO1	Recognize avionics terminology, airplane structures, electrical theory and system.
CO2	Evaluate electrical malfunctions and problem solve repairs with appropriate utilization of trade tools.
CO3	Demonstrate all safety and regulation standards in a work environment.
CO4	Evaluate the various types of display technologies used in the aviation.
CO5	Understand the various design methodology and certification process of avionics systems.

AE2572- CFD LAB

CO1	Students will understand the principles of fluid dynamics and algorithms of CFD modeling.
CO2	Students will be able to employ commercial codes to develop CFD models and interpret the results into the physical process.
CO3	Understanding the underlying principles of CFD analysis and finite difference methods
CO4	Understand the numerical models in flow modeling.
CO5	The student will demonstrate the ability to use modern CFD software tools to get accurate solution.

AE25P5 PROJECT WORK –PHASE II

CO1	Demonstrate a sound technical knowledge of their selected project topic.
CO2	Undertake problem identification, formulation and solution.
CO3	Design engineering solutions to complex problems utilising a systems approach.
CO4	Conduct an engineering project
CO5	Demonstrate the knowledge, skills and attitudes of a professional engineer.