SATHYABAMA
INSTITUTE OF SCIENCE AND TECHNOLOGY
(DEEMED TO BE UNIVERSITY)
Accredited with "A" Grade by NAAC
Jeppiaar Nagar, Rajiv Gandhi Salai, Chennai - 600 119.
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SCHOOL OF MECHANICAL ENGINEERING

DEPARTMENT OF AERONAUTICAL ENGINEERING

BOARD OF STUDIES MEETING HELD ON 15.12.2018

Members present:

External Members	Signature	Internal Members	Signature
Dr.Paramasivam, Professor, Madras Institute of Technology, Chennai		Dr.S.Prakash, Dean/Faculty of Mechanical	
Er. James Michael Amulu, Senior Product, Development Leader, SAP, Bangalore.		Dr.J.Alexander Head/Aeronautical, Engineering	
		Dr.A.Anderson, Associate Professor/ Aeronautical Engineering	
		Mr.S. Manigandan, Assistant Professor/ Aeronautical Engineering, Aeronautical Engineering	

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Minutes of the Board of Studies meeting

Board of Studies meeting for the Department of Aeronautical Engineering was held on 16th Dec 2016 in Aero CAD Lab with the following agenda:

1. Revision of Course "SAE1205 Aerodynamics - I"
2. Revision of Course "SAE4054 Aerodynamics Lab"

Welcome Address

At the outset, the Chair Person welcomed the members of BoS and placed the agenda for the deliberations of the members. The following deliberations were made as per the items of the circulated agenda.

Agenda item # 1

Modifications proposed for 2018 batch Bachelors of Engineering– Aeronautical Engineering students in SAE1205 – Aerodynamics - I.

Head of the department informed that the department teams have been working on the modification of curriculum and in this direction the following changes were made on SAE1205 – Aerodynamics -I.

(a)**Removal of the following topics in Unit V:** Flow over a flat plate, lift, drag and pitching moment estimation of a flat plate.

(b)**Inclusion of the following topics in Unit V:** Integral method, aspects of transition to turbulence, turbulent boundary layer properties over a flat plate at low speeds. Effect of turbulence and various turbulence modelling.

Resolutions: The External members considered the revision made and discussed regarding the revision. Dr. J. Alexandar pointed out that the removal of topics was necessary. These topics are covered in the course Introduction to Aerodynamics.

Agenda item # 2

Modifications proposed for 2018 batch Bachelors of Engineering– Aeronautical Engineering students in SAE4054 – Aerodynamics Lab.

Head of the department informed that the department teams have been working on the modification of curriculum and in this direction the following changes were made on SAE4054 – Aerodynamics Lab.

(a)**Removal of the following topics in experiment No. 9**: Measurement of boundary layer thickness and Experiment No. 10 - Force measurements using wind tunnel balances.

(b)**Inclusion of the following topics in experiment No. 9:** Calibration of supersonic wind tunnel and Experimental No. 10 - Supersonic flow visualization with Schlieren system.

Resolutions: The External members considered the revision made and discussed regarding the revision. Dr. J. Alexandar pointed out that the removal of topics was necessary. These experiments are highly essential for compressible flow studies.

This initiative is appreciated by BoS members and after a discussion about the contents of the syllabus; the course revision was approved for inclusion in the Curriculum.

BoS members accepted the changes and approved the syllabus.

The revised syllabus of the course is enclosed in Annexure-1.

Vote of Thanks

Dr.Alexander thanked the expert members for accepting the invitation for attending the BoS meeting. He thanked them for their valuable suggestions on the agenda items presented. He also thanked Dr.S.Prakash, Dean/Chair and Dr.A.Anderson, Associate Professor for their contribution towards the conduct of this BoS meeting.

Dean/CHAIR

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Agenda item # 1 Modifications proposed for SAE1205 – Aerodynamics - I.

S.No.	Existing Syllabus R2017	Corrected Syllabus
1	UNIT-V VISCOUS FLOWS 9 Hrs. Derivation of Navier-Stokes equation for two-dimensional flows, boundary layer approximations, laminar boundary equations and boundary conditions, Blasius solution, qualitative features of boundary layer flow under pressure gradients, Flow over a flat plate, lift, drag and pitching moment estimation of a flat plate.	UNIT-V VISCOUS FLOWS 9 Hrs. Derivation of Navier-Stokes equation for two-dimensional flows, boundary layer approximations, laminar boundary equations and boundary conditions, Blasius solution, qualitative features of boundary layer flow under pressure gradients, Integral method, aspects of transition to turbulence, turbulent boundary layer properties over a flat plate at low speeds. Effect of turbulence and various turbulence modeling.

Agenda item # 2 Modifications proposed for SAE4054 – Aerodynamics Lab

S.No.	Existing Syllabus R2017	Corrected Syllabus
1	Experiment No. 9 - Measurement of boundary layer thickness and Experiment No. 10 - Force measurements using wind tunnel balances.	Experiment No. 9 - Calibration of supersonic wind tunnel and Experimental No. 10 - Supersonic flow visualization with Schlieren system.

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SCHOOL OF MECHANICAL ENGINEERING

DEPARTMENT OF AERONAUTICAL ENGINEERING

BOARD OF STUDIES MEETING HELD ON 22.06.2017

Members present:

External Members	Signature	Internal Members	Signature
Dr.Paramasivam, Professor, Madras Institute of Technology, Chennai		Dr.S.Prakash, Dean/Faculty of Mechanical	
Er. James Michael Amulu, Senior Product, Development Leader, SAP, Bangalore.		Dr.J.Alexander Head/Aeronautical, Engineering	
		Dr.A.Anderson, Associate Professor/ Aeronautical Engineering	
		Mr. S. Manigandan, Assistant Professor/ Aeronautical Engineering, Aeronautical Engineering	

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Minutes of the Board of Studies meeting

Board of Studies meeting for the Department of Aeronautical Engineering was held on 22nd June 2017 in Aero CAD Lab with the following agenda:

1. Revision of Course "SAE1301 Aerodynamics - II"
2. Revision of Course "SAE1302 Aircraft Propulsion"

Welcome Address

At the outset, the Chair Person welcomed the members of BoS and placed the agenda for the deliberations of the members. The following deliberations were made as per the items of the circulated agenda.

Agenda item # 1

Modifications proposed for 2018 batch Bachelors of Engineering– Aeronautical Engineering students in SAE1301 Aerodynamics - II.

Head of the department informed that the department teams have been working on the modification of curriculum and in this direction the following changes were made on SAE1301 Aerodynamics - II.

(a)**Removal of the following topics in Unit IV:** Transonic, Supersonic and hypersonic wind tunnels and characteristic features, their operation and performance- Flow visualization methods of supersonic flows.

(b)**Inclusion of the following topics in Unit IV:** Small Perturbation Equation-Subsonic, Supersonic and Transonic flows, Prandtl-Glauert affine transformation relations for subsonic flows, linearized subsonic and supersonic flow theory, Ackeret's problem; Lift, drag pitching

moment and centre of pressure of supersonic profiles-thin flat plate, Double wedged airfoils and Double concave aerofoils.

Resolutions: The External members considered the revision made and discussed regarding the revision. Dr. J. Alexandar pointed out that the removal of topics was necessary. These topics are covered in the course Experimental Aerodynamics.

Agenda item # 2

Modifications proposed for 2018 batch Bachelors of Engineering– Aeronautical Engineering students in SAE1302 Aircraft Propulsion.

Head of the department informed that the department teams have been working on the modification of curriculum and in this direction the following changes were made on SAE1302 Aircraft Propulsion.

(a)**Removal of the following topics in Unit V:** Ideal momentum theory and blade element theory and their relative merits, numerical problems on the performance of propellers using propeller charts, selection of propellers, fixed, variable and constant speed propellers, prop-fan, material for propellers, shrouded propellers helicopter, rotor in hovering.

(b)**Inclusion of the following topics in Unit V:** Impulse and reaction blading of gas turbines – Velocity triangles and power output – Elementary theory – Choice of blade profile pitch and chord – Estimation of stage performance – Limiting factors in gas turbine design-Overall turbine performance –Methods of blade cooling – Matching of turbine and compressor.

Resolutions: The External members considered the revision made and discussed regarding the revision. Dr. J. Alexandar pointed out that the removal of topics was necessary. These topics are covered in Unit – IV compressors of the same course and the course Unmanned Aerial Systems.

This initiative is appreciated by BoS members and after a discussion about the contents of the syllabus; the course revision was approved for inclusion in the Curriculum.

BoS members accepted the changes and approved the syllabus.

The revised syllabus of the course is enclosed in Annexure-1.

Vote of Thanks

Dr.Alexander thanked the expert members for accepting the invitation for attending the BoS meeting. He thanked them for their valuable suggestions on the agenda items presented. He also thanked Dr.S.Prakash, Dean/Chair and Dr.A.Anderson, Associate Professor for their contribution towards the conduct of this BoS meeting.

Dean/CHAIR

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Agenda item # 1 Modifications proposed for SAE1301 – Aerodynamics - II.

S.No.	Existing Syllabus R2017	Corrected Syllabus
1	UNIT-IV EXPERIMENTAL METHODS 14 Hrs. Transonic, Supersonic and hypersonic wind tunnels and characteristic features, their operation and performance- Flow visualization methods of supersonic flows.	UNIT-IV LINEARIZED THEORY 14 Hrs. Small Perturbation Equation-Subsonic, Supersonic and Transonic flows, Prandtl-Glauert affine transformation relations for subsonic flows, Linearized subsonic and supersonic flow theory, Ackeret's problem; Lift, drag pitching moment and center of pressure of supersonic profiles-thin flat plate, Double wedged airfoils and Double concave airfoils.

Agenda item # 2 Modifications proposed for SAE1302 – Aircraft Propulsion

S.No.	Existing Syllabus R2017	Corrected Syllabus
1	UNIT V – PROPELLERS 10 HRS. Ideal momentum theory and blade element theory and their relative merits, numerical problems on the performance of propellers using propeller charts, selection of propellers, fixed, variable and constant speed propellers, prop-fan, material for propellers, shrouded propellers helicopter, rotor in hovering.	UNIT V – TURBINES 10 HRS. Impulse and reaction blading of gas turbines – Velocity triangles and power output – Elementary theory – Choice of blade profile pitch and chord – Estimation of stage performance – Limiting factors in gas turbine design-Overall turbine performance –Methods of blade cooling – Matching of turbine and compressor.