Nitte Meenakshi Institute of Technology, Bangalore
Department of Aeronautical Engineering
New Courses Introduced from the department during last five years

Name of the Course	Course Code	Name of the Programme	Weather this course is a new course introduced duriing the last five years (Yes/No)	Year of introduction
WIND TUNNEL TECHNIQUES	14AEO661	B E Aeronautical Engineering	YES	2015-16
INTRODUCTION TO VIBRATION AND AEROELASTICITY	14AE54	B E Aeronautical Engineering	YES	2015-16
AIRCRAFT MATERIALS	14AEE561	B E Aeronautical Engineering	YES	2015-16
INTRODUCTION TO HELICOPTER AERODYNAMICS	14AEE564	B E Aeronautical Engineering	YES	2015-16
HYDRAULICS AND PNEUMATICS	14AEE653	B E Aeronautical Engineering	YES	2015-16
FATIGUE AND FRACTURE MECHANICS	14AEE654	B E Aeronautical Engineering	YES	2015-16
AIRCRAFT MAINTENANCE, REPAIR AND OVERHAUL	14AEO662	B E Aeronautical Engineering	YES	2015-16
AIRWORTHINESS AND CERTIFICATION	14AEO663	B E Aeronautical Engineering	YES	2015-16
ELEMENTS OF ROCKET PROPULSION	14AEO665	B E Aeronautical Engineering	YES	2015-16
INTRODUCTION TO HEAT AND MASS TRANSFER	14AEE751	B E Aeronautical Engineering	YES	2015-16
THEORY OF PLATES AND SHELLS	14AEE753	B E Aeronautical Engineering	YES	2015-16
INTRODUCTION TO AIRCRAFT AND ITS SYSTEMS	14AEO761	B E Aeronautical Engineering	YES	2015-16
HELICOPTER THEORY	14AEO763	B E Aeronautical Engineering	YES	2015-16
INTERNSHIP/SELF STUDY/MINOR PROJECT	14AE81	B E Aeronautical Engineering	YES	2015-16
INTRODUCTION TO BOUNDARY LAYER THEORY	14AEE833	B E Aeronautical Engineering	YES	2015-16
INDUSTRIAL AERODYNAMICS	14AEE835	B E Aeronautical Engineering	YES	2015-16

20/07/19
Professor and Head

Dr. P. K. Dash
Professor & Head,
Department of Aeronautical Engineering
Nitte Meenakshi Institute of Technology,
Bangalore - 560 064.

NITTE MEENALSHI INSTITUTE POF TECHNOLOGY

(An Autonomous Institution under Visvesvaraya Technology Univeersity)

Department of Aeronautical Engineering

Board of Studies (AeronauticalEngineering)

Held on 20 July 2013 at 10.00h

In the office of HoD Aeronautical Engineering, NMIT

Agenda

1. Approval of syllabus for III and V semester of Aeronautical Engineering.
2. Approval of Revision made to syllabus of IV and VI semesters of Aeronautical Engineering.
3. Approval of Panel of BOE with external examiners.
4. Any other with the permission of chairman

BOS PANEL FOR THE ACADEMIC YEAR 2013-14:

EXTERNAL MEMBERS:

Sl No	Name	Designation
1	Dr. J. NAGABHUSHANAM	Professor (Retd). Department of Aeronautical Engineering. IISC, Bangalore.
2	WgCdr (Retd) M P BENJAMIN	Additional Manager, Engine Overhaul Division, HAL, Bangalore.

INTERNAL MEMBERS:

Sl No	Name	Designation
1	AirrCmde (Retd) R Jayakumar	Prof. and HOD (Aeronautical Engineering)
2	Mahendra M A	Lecturer (Aeronautical Engineering)
3	Santhosh N	Lecturer (Aeronautical Engineering)

All internal and external members were present for meeting.

Minutes of Board of studies meeting held on 20/07/2013 at 10.30h

1. The board of studies recommended the syllabi of III and V semesters of Aeronautical Engineering for approval by Academic council from the academic year 2013-14.
2. The board of studies recommended the revised syllabi of IV and VI semesters of Aeronautical engineering for approval by Academic council from the academic year 2013-14.
3. The BoS approved the proposed panel of Board of examiners.
4. The members of board of studies had discussions on the syllabi and gave valuable suggestions.
5. The board of studies resolved to consider these suggestions given by members for consideration during further revision of syllabus.

Jayakumar 22-Jul13

Air Cmde R JAYAKUMAR,
Chairman, BoS
Department of Aeronautical Engineering

Santhosh N

SANTHOSH N
Member secretary, BoS
Department of
Aeronautical Engineering

Copy To: Principal, NMIT
Dean (Academic), NMIT

NITTE MEENALSHI INSTITUTE POF TECHNOLOGY

(An Autonomous Institution under Visvesvaraya Technology Univeersity)

Department of Aeronautical Engineering

Board of Studies (AeronauticalEngineering)

Held on 20 July 2013 at 10.00h

In the office of HoD Aeronautical Engineering, NMIT

Agenda

1. Approval of syllabus for III and V semester of Aeronautical Engineering.
2. Approval of Revision made to syllabus of IV and VI semesters of Aeronautical Engineering.
3. Approval of Panel of BOE with external examiners.
4. Any other with the permission of chairman

BOS PANEL FOR THE ACADEMIC YEAR 2013-14:

EXTERNAL MEMBERS:

Sl No	Name	Designation
1	Dr. J. NAGABHUSHANAM	Professor (Retd). Department of Aeronautical Engineering. IISC, Bangalore.
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Minutes of Board of studies meeting held on 20/07/2013 at 10.30h

1. The board of studies recommended the syllabi of III and V semesters of Aeronautical Engineering for approval by Academic council from the academic year 2013-14.
2. The board of studies recommended the revised syllabi of IV and VI semesters of Aeronautical engineering for approval by Academic council from the academic year 2013-14.
3. The BoS approved the proposed panel of Board of examiners.
4. The members of board of studies had discussions on the syllabi and gave valuable suggestions.
5. The board of studies resolved to consider these suggestions given by members for consideration during further revision of syllabus.

Jayakumar 22-Jul13

Air Cmde R JAYAKUMAR,
Chairman, BoS
Department of Aeronautical Engineering

Santhosh N

SANTHOSH N
Member secretary, BoS
Department of Aeronautical Engineering

Copy To: Principal, NMIT
Dean (Academic), NMIT

NITTE MEENAKSHI INSTITUTE OF TECHNOLOGY, BANGALORE

CHANGES IN SCHEME AND SYLLABI EFFECTIVE FROM 2013-14

AERONAUTICAL ENGINEERING DEPARTMENT

The following changes are proposed to be made to existing scheme and syllabus for the BE Programme of Aeronautical Engineering from the academic year 2013-14

Semester 3

1.As the load on the Material Testing Lab has increase due to the increased intake in Mechanical Engg Dept, it is proposed to shift Lab from 3 sem to 4 semester. In its place, **Metrology and Measurements lab** is proposed in 3 semester without any change in the existing syllabus or credits. The new subject code for **Metrology and Measurements lab is 11AEL37.**

2. As Metrology and Measurement Lab is proposed to be introduced in 3 semester, the corresponding theory subject needs to be taught in 3 semester. Hence, **Engineering Metrology and Measurement (11AE36)** is proposed to be introduced in 3 semester without any change in the syllabus or credits.

3.As the existing syllabus did not have any aeronautical related subject in the third semester hence, it is proposed to include **Element of Aeronautics (11AE32)** with out any change in the existing syllabus or credits.

4.In order accommodate the two new subject introduced in 3 semester, the subjects **Material Science and metallurgy** and **Computer aided Machine Drawing** are moved to the 4 semester and the new subject codes are **11AE45** and **11AE46 respectively.**

5.No other change is proposed in the scheme & syllabus of 3 semester.

Semester 4

6. The existing syllabus was found to be deficient of aircraft related subjects. Hence, it is proposed to include three new subjects in the programme as core subjects and one more subject as an elective subject. To accommodate these addition subject and one more subject as an elective subject. In order to accommodate these additional subjects, some subjects were modified. The specific details are given in succeeding paragraphs.

7. The existing subject Theory of Machine – 2 were merged as **Theory of Machine (11AE43)** with 4 credits. The details of merging are separately annexed.

8. The existing subject **Fluid Mechanics (11AE44)** is modified and its credits reduce from 4 to 3. The details of modification are separately annexed.

9. Similarly, the existing subject **Material Science & Metallurgy (11AE45)** is modified and its credit reduced from 4 to 3. The **details of modification are separately annexed.**

10. Similarly, the existing subject **Computer Aided Machine Drawing (11AE46)** is modified and its credits reduced from 4 to 3. The details of modification are separately annexed.

11. In the subject, **Applied Thermodynamics (11AE42)** the portions relating to steam turbine and Thermal power plat are removed, as they are not relevant to Aeronautical Engineering.

12. As the **Metrology and Measurement Lab** has been shifted to semester 3, **Material Testing Lab** is introduced in semester4 without any change in the syllabus or credits. The new subject code for **Material Testing Lab** is **11AEL47**

13. No other change is proposed in the scheme & syllabus of 4 semester, With these modification, the total number of credit for semester 4 will now increase from 26 to 27

Semester 5

14. A new subject **Aircraft electrical system (11AE52)**with 3 credits has been proposed to be included in semester 5 in place of **Theory of machines-II**

15. The credit of program elective (group A) has been proposed to be increased from three to 4. In addition, the existing subject welding technology is proposed to be removed from group A and introduced as an elective under Group-B without any change in syllabus. Similarly, the subject **Introduction to composite materials** is proposed to be removed from group-A and introduced as an elective under group D without any change in syllabus.

16. No other change is proposed in the scheme and syllabus of V semester.

Semester 6

17. A new subject **Aircraft instruments (11AE64)** has been proposed to be included in semester VI in place of theory of vibrations.

18. Subject Operations management is proposed to be removed from group B and introduced as a humanities subject in semester VII without any change in syllabus, but the credits reduced from 4 to 3. The subject hydraulic and pneumatic is proposed to be removed from the list of electives under group B. The subject finite element analysis is proposed to be renamed as **Finite element methods (11AEE653)** without any change in syllabus or credits.

19. The mini project/internship is undertaken by the students during summer vacation, the credit of the same is proposed to be removed from semester VI and is to be moved to semester VIII. With these proposals the total number of credits for semester VI will now decrease from 27 to 25.

20. No other change is proposed in the scheme and syllabus of VI semester.

Air Cmde (Retd) R. JAYAKUMAR
Professor and HOD
Aeronautical Engineering
NMIT, Bangalore-560 064.

NITTE MEENAKSHI INSTITUTE OF TECHNOLOGY

(AN AUTONOMOUS INSTITUTION, ACCREDITED BY NBA (AICTE) NEW DELHI)

COURSE CONTENT, SCHEME AND EXAMINATION, FOR 2011 BATCH

Aeronautical Engineering

III- VIII SEMESTER

SEMESTER: III

Sl No	Subject Code	Subject Name	Teaching Dept.	Teaching Hours/week			Examination			Credits
				L#	T#	P#	CIE*	SEE**	Total	
1	11MAT31	ENGINEERING MATHEMATICS –III	Math	3	2	-	50	50	100	4
2	11AE32	ELEMENTS OF AERONAUTICS	AE/ME	4	-	-	50	50	100	4
3	11AE33	BASIC THERMODYNAMICS	AE/ME	3	2	-	50	50	100	4
4	11AE34	MECHANICS OF MATERIALS	AE/ME	3	2	-	50	50	100	4
5	11AE35	MANUFACTURING TECHNOLOGY	AE/ME	3	1	-	50	50	100	3
6	11AE36	ENGINEERING METROLOGY AND MEASUREMENTS	AE/ME	2	-	4	50	50	100	4
7	11AEL37	METROLOGY & MEASUREMENTS LAB	AE/ME	-	-	3	50	50	100	1.5
8	11AEL38	MACHINE SHOP	AE/ME	-	-	3	50	50	100	1.5
						TOTAL	400	400	800	25

SEMESTER: IV

Sl No	Subject Code	Subject Name	Teaching Dept.	Teaching Hours/week			Examination			Credits
				L#	T#	P#	CIE*	SEE**	Total	
1	11AE41	ENGINEERING MATHEMATICS –IV	Math	3	2	-	50	50	100	4
2	11AE42	APPLIED THERMODYNAMICS	AE/ME	3	2	-	50	50	100	4
3	11AE43	THEORY OF MACHINES	AE/ME	3	2	-	50	50	100	4
4	11AE44	FLUID MECHANICS	AE/ME	4	-	-	50	50	100	3
5	11AE45	MATERIAL SCIENCE AND METROLOGY	AE	4	-	-	50	50	100	3
6	11AE46	COMPUTER AIDED MACHINE DRAWING	AE/ME	3	-	-	50	50	100	3
	11AE47	AIRCRAFT SYSTEMS		3	-	-	50	50	100	3
7	11AEL48	MATERIAL TESTING LAB	AE/ME	-	-	3	50	50	100	1.5
8	11AEL49	FOUNDRY AND FORGING LAB	AE/ME	-	-	3	50	50	100	1.5
						TOTAL	400	400	800	27

*Continuous Internal Evaluation ** Semester End Examination # L- Lecture, T- Tutorial, P- Practical

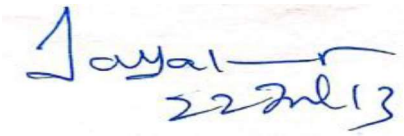
SEMESTER: V

Sl No	Subject Code	Subject Name	Teaching Dept.	Teaching Hours/week			Examination			Credits
				L#	T#	P#	CIE*	SEE**	Total	
1	11AEH51	Management and Entrepreneurship	AE	3	-	-	50	50	100	3
2	11AE52	Aircraft Electrical System	AE	2	2	-	50	50	100	3
3	11AE53	Aircraft Structures – I	AE	3	2	-	50	50	100	4
4	11AE54	Aerodynamics – I	AE	3	2	-	50	50	100	4
5	11AE55	Aircraft Propulsion	AE	3	2	-	50	50	100	4
6	11AEE56X	Elective (Group A)	AE	4	-	-	50	50	100	4
7	11AEL57	Aerodynamics Laboratory	AE	-	-	3	50	50	100	1.5
8	11AEL58	Energy Conversion Laboratory	AE	-	-	3	50	50	100	1.5
						TOTAL	400	400	800	25

SEMESTER: VI

Sl No	Subject Code	Subject Name	Teaching Dept.	Teaching Hours/week			Examination			Credits
				L#	T#	P#	CIE*	SEE**	Total	
1	11AE61	Applied Gas Dynamics	AE	3	2	-	50	50	100	4
2	11AE62	Aircraft Performance	AE	3	2	-	50	50	100	4
3	11AE63	Aerodynamics – II	AE	3	2	-	50	50	100	4
4	11AE64	Aircraft Instruments	AE	2	2	-	50	50	100	3
5	11AEE65X	Elective (Group B)	AE	3	2	-	50	50	100	4
6	11AEO66X	Open Elective (Group C)	AE	3	-		50	50	100	3
7	11AEL67	Structures Laboratory	AE	-	-	3	50	50	100	1.5
8	11AEL68	Propulsion Laboratory	AE	-		3	50	50	100	1.5
						TOTAL	450	450	900	25

*Continuous Internal Evaluation ** Semester End Examination # L- Lecture, T- Tutorial, P- Practical



SEMESTER: VII

Sl No	Subject Code	Subject Name	Teaching Dept.	Teaching Hours/week			Examination			Credits
				L#	T#	P#	CIE*	SEE**	Total	
1	11AE71	Control Engineering	AE	3	2	-	50	50	100	4
2	11AE72	Aircraft Structures - II	AE	3	2	-	50	50	100	4
3	11AE73	Aircraft Stability & Control	AE	2	2	-	50	50	100	3
4	11AE74	Gas Turbine Technology	AE	4	-	-	50	50	100	4
5	11AEE75X	Electives (Group D)	AE	4	-	-	50	50	100	4
6	11AEO76X	Open Electives (Group E)	AE	3	-	-	50	50	100	3
7	11AEL77	Design, Modeling and Analysis Laboratory	AE	-	-	3	50	50	100	1.5
8	11AEL78	Simulation Laboratory	AE	-	-	3	50	50	100	1.5
9	11AEP79	Project preliminaries and Technical Seminars	AE	-	1	-	-	-	-	-
						TOTAL	400	400	800	25

SEMESTER: VIII

Sl No	Subject Code	Subject Name	Teaching Dept.	Teaching Hours/week			Examination			Credits
				L#	T#	P#	CIE*	SEE**	Total	
1	11AEH81	Operations Management	AE	3	-	-	50	50	100	3
2	11AE82	Aircraft Radar System	AE	2	2	-	50	50	100	3
3	11AEE83X	Elective (Group F)	AE	4	-	-	50	50	100	4
4	11AEP84	Project Work	AE	-	-	-	100	100	200	13
5	11AEP85	Mini Project/Internship/Self Study	AE	-	-	-	50	50	100	2
6	11AEP85	Seminars on current topics	AE	-	-	3	-	-	-	-
						TOTAL	200	200	400	25

*Continuous Internal Evaluation ** Semester End Examination # L- Lecture, T- Tutorial, P- Practical

Elective Group A **Credits 4**

Sl. No.	Subject Code	Subject Name
1.	11AEE561	Theory of Elasticity
2.	11AEE562	Internal Combustion Engines
3.	11AEE563	Non Traditional Machining
4.	11AEE564	Industrial Engineering & Management
5.	11AEE565	Turbo-machinery
6.	11AEE566	Cryogenics

Elective Group B **Credits 4**

Sl. No.	Subject Code	Subject Name
1.	11AEE651	Theory of Plasticity & Metal Forming Processes
2.	11AEE652	Refrigeration & Air conditioning
3.	11AEE653	Finite Element Methods
4.	11AEE654	Energy Engineering
5.	11AEE655	Automotive Engineering
6.	11AEE656	Welding Technology

Elective Group C (Open Elective) **Credits 3**

Sl. No.	Subject Code	Subject Name
1.	11AEO661	Numerical Methods
2.	11AEO662	MEMS
3.	11AEO663	Organizational Behavior
4.	11AEO664	TQM
5.	11AEO665	Essentials of Information System
6.	11AEO666	Solar energy

Elective Group D **Credits 4**

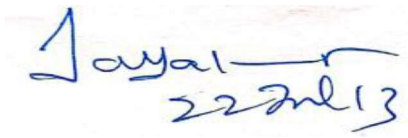
Sl. No.	Subject Code	Subject Name
1.	11AEE751	Smart Materials
2.	11AEE752	Tribology
3.	11AEE753	Statistical Quality Control
4.	11AEE754	Introduction to Composite Materials
5.	11AEE755	Renewable Energy resources
6.	11AEE756	Flight Testing

Elective Group E (open Elective) **Credits 3**

Sl. No.	Subject Code	Subject Name
1.	11AEO761	Computer Graphics
2.	11AEO762	Nano Technology
3.	11AEO763	Management Information System
4.	11AEO764	Project Management
5.	11AEO765	Non Destructive Testing
6.	11AEO766	Computational Fluid Dynamics

Elective Group F **Credits 4**

Sl. No.	Subject Code	Subject Name
1.	11AEE831	Experimental Stress Analysis
2.	11AEE832	Machine Tool design
3.	11AEE833	Foundry Technology
4.	11AEE834	Bio Mass Energy System
5.	11AEE835	Computer Integrated Manufacturing
6.	11AEE836	Aircraft Communication System



NITTE MEENAKSHI INSTITUTE OF TECHNOLOGY

(An Autonomous Institution under Visvesvaraya Technological University)

Department of Aeronautical Engineering

Board of Studies
Date: 24 June 2014
at
Office of HoD
Department of Aeronautical Engineering NMIT

KNOWLEDGE • CHARACTER • UNITY

COMPREHENSIVE REPORT

of Proceedings and Curriculum Revision

for Academic Year 2014-15

Chairman, BoS
Air Cmde R Jayakumar
Professor & Head
Department of Aeronautical Engineering

NITTE MEENAKSHI INSTITUTE OF TECHNOLOGY

(An Autonomous Institution under Visvesvaraya Technological University)

Accredited By NAAC, New Delhi,

Department of Aeronautical Engineering

Board of studies meeting on 24 June 2014

Office of HoD Aeronautical Engineering, NMIT

Agenda

1. Approval of syllabus for III and IV semesters of Aeronautical Engineering for students admitted in 2012.
2. Approval of revision made to syllabus of VII and VIII semesters Aeronautical Engineering for students of 2011-15 batch.
3. Approval of panel of BoE with external examiners.

BoS Panel for the Academic year 2014-2015

Sl No.	Name	Designation	Organization	Position
1	Air Cmde R Jayakumar	Prof. &HoD	NMIT, Bangalore	Chairman
2	Dr. J. Nagabhushananam	Professor Emeritus	IISc	Member, VTU Nominee
3	WgCdr (Retd) M P Benjamin	Additional Manager	Engine Overhaul Division HAL, Bangalore	Member
4	Mr. Mahendra M A	Assistant professor	NMIT, Bangalore	Member
5	Mr. Harish H V	Assistant professor	NMIT, Bangalore	Member
6	Mr. Santhosh N	Assistant professor	NMIT, Bangalore	Member Secretary

NITTE MEENAKSHI INSTITUTE OF TECHNOLOGY

(An Autonomous Institution under Visvesvaraya Technological University)

Accredited By NAAC, New Delhi,

Department of Aeronautical Engineering

Proceedings of The Board of Studies In Aeronautical Engineering Meeting Held on 24 June 2014 In The Department of Aeronautical Engineering

MEMBERS PRESENT

Sl No.	Name	Designation	Organization	Position
1	Air. Cmde R Jayakumar	Prof. &HoD	NMIT, Bangalore	Chairman
2	Dr. J. Nagabhushananam	Professor Emerotus	IISc	Member, VTU Nominee
3	WgCdr (Retd) M P Benjamin	Additional Manager	Engine Overhaul Division HAL, Bangalore	Member
4	Mr. Mahendra M A	Assistant professor	NMIT, Bangalore	Member
5	Mr. Harish H V	Assistant professor	NMIT, Bangalore	Member
6	Mr. Santhosh N	Assistant professor	NMIT, Bangalore	Member Secretary

Minutes of board of studies meeting held on 24 June 2014 at 10:30 Am.

1. The board of studies recommended the syllabi of III and IV semesters of aeronautical engineering for the batch 2012-16.
2. The board of studies recommended the revised syllabi of VII and VIII semesters for the academic year 2014-15.
3. The BoS approved the proposed panel of board of examiners.
4. The board of studies resolved to consider these suggestions given by members for consideration during further revision of syllabus.

Modifications made in the syllabus of III and IV semester of 2012 admitted batch

1. Elements of aeronautics has been shifted from fourth semester to third semester.
2. The fourth semester course Theory of machines-I has been modified and named as theory of machines.
3. Computer aided machine drawing has been shifted from third semester to fourth semester.
4. The course Aircraft systems has been introduced in fourth semester.

Jaya I/c 22 June 14

Air Cmde R Jayakumar

Chairman,BoS

Department of Aeronautical engineering

Santhosh N

Santhosh N

Member Secretary,BoS

Department of Aeronautical engineering

NITTE MEENAKSHI INSTITUTE OF TECHNOLOGY

(AN AUTONOMOUS INSTITUTION, ACCREDITED BY NBA (AICTE) NEW DELHI)

COURSE CONTENT, SCHEME OF TEACHING AND EXAMINATION, FOR 2012 BATCH

Aeronautical Engineering

III- VIII SEMESTER

SEMESTER: III

Sl No	Subject Code	Subject Name	Teaching Dept.	Teaching Hours/week			Examination			Credits
				L#	T#	P#	CIE*	SEE**	Total	
1	13MAT31	ENGINEERING MATHEMATICS –III	Mathematics	3	2	-	50	50	100	4
2	13AE32	ELEMENTS OF AERONAUTICS	AE	4	-	-	50	50	100	4
3	13AE33	BASIC THERMODYNAMICS	AE/ME	3	2	-	50	50	100	4
4	13AE34	MECHANICS OF MATERIALS	AE/ME	3	2	-	50	50	100	4
5	13AE35	MANUFACTURING TECHNOLOGY	AE/ME	2	2	-	50	50	100	3
6	13AE36	ENGINEERING METROLOGY AND MEASUREMENTS	AE/ME	2	2	-	50	50	100	3
7	13AEL37	METROLOGY AND MEASUREMENTS LAB	AE/ME	-	-	3	50	50	100	1.5
8	13AEL38	MACHINE SHOP LAB	AE/ME	-	-	3	50	50	100	1.5
						TOTAL	400	400	800	25

SEMESTER: IV

Sl No	Subject Code	Subject Name	Teaching Dept.	Teaching Hours/ week			Examination			Credits
				L#	T#	P#	CIE*	SEE**	Total	
1	13MAT41	ENGINEERING MATHEMATICS –IV	Mathematics	3	2	-	50	50	100	4
2	13AE42	APPLIED THERMODYNAMICS	AE/ME	3	2	-	50	50	100	4
3	13AE43	THEORY OF MACHINES	AE	3	2	-	50	50	100	4
4	13AE44	FLUID MECHANICS	AE	2	2	-	50	50	100	3
5	13AE45	MATERIAL SCIENCE	AE	2	2	-	50	50	100	3
6	13AE46	COMPUTER AIDED MACHINE DRAWING	AE	2	-	3	50	50	100	3
7	13AE47	AIRCRAFT SYSTEMS	AE	3		-	50	50	100	3
8	13AEL48	MATERIAL TESTING LAB	AE	-	-	3	50	50	100	1.5
9	13AEL49	FOUNDRY AND FORGING LAB	AE	-	-	3	50	50	100	1.5
						TOTAL	450	450	900	27

*Continuous Internal Evaluation

** Semester End Examination

L- Lecture, T- Tutorial, P- Practical

SEMESTER: V

Sl No	Subject Code	Subject Name	Teaching Dept.	Teaching Hours/week			Examination			Credits
				L#	T#	P#	CIE*	SEE**	Total	
1	13AEH51	Management and Entrepreneurship	AE	3	-	-	50	50	100	3
2	13AE52	Aircraft Electrical System	AE	2	2	-	50	50	100	3
3	13AE53	Aircraft Structures – I	AE	3	2	-	50	50	100	4
4	13AE54	Aerodynamics – I	AE	3	2	-	50	50	100	4
5	13AE55	Aircraft Propulsion	AE	3	2	-	50	50	100	4
6	13AEE56X	Elective (Group A)	AE	4	-	-	50	50	100	4
7	13AEL57	Aerodynamics Laboratory	AE	-	-	3	50	50	100	1.5
8	13AEL58	Energy Conversion Laboratory	AE	-	-	3	50	50	100	1.5
						TOTAL	400	400	800	25

SEMESTER: VI

Sl No	Subject Code	Subject Name	Teaching Dept.	Teaching Hours/week			Examination			Credits
				L#	T#	P#	CIE*	SEE**	Total	
1	13AE61	Applied Gas Dynamics	AE	3	2	-	50	50	100	4
2	13AE62	Aircraft Performance	AE	3	2	-	50	50	100	4
3	13AE63	Aerodynamics – II	AE	3	2	-	50	50	100	4
4	13AE64	Aircraft Instruments	AE	2	2	-	50	50	100	3
5	13AEE65X	Elective (Group B)	AE/ME	3	2	-	50	50	100	4
6	13AEO66X	Open Elective (Group C)	AE/ME	3	-		50	50	100	3
7	13AEL67	Structures Laboratory	AE	-	-	3	50	50	100	1.5
8	13AEL68	Propulsion Laboratory	AE	-		3	50	50	100	1.5
						TOTAL	450	450	900	25

*Continuous Internal Evaluation

** Semester End Examination

L- Lecture, T- Tutorial, P- Practical

SEMESTER: VII

Sl No	Subject Code	Subject Name	Teaching Dept.	Teaching Hours/week			Examination			Credits
				L#	T#	P#	CIE*	SEE**	Total	
1	13AE71	Control Engineering	AE	3	2	-	50	50	100	4
2	13AE72	Aircraft Structures - II	AE	3	2	-	50	50	100	4
3	13AE73	Aircraft Stability & Control	AE	2	2	-	50	50	100	3
4	13AE74	Gas Turbine Technology	AE	4	-	-	50	50	100	4
5	13AEE75X	Electives (Group D)	AE	4	-	-	50	50	100	4
6	13AEO76X	Open Electives (Group E)	AE	3	-	-	50	50	100	3
7	13AEL77	Design, Modeling and Analysis Laboratory	AE	-	-	3	50	50	100	1.5
8	13AEL78	Simulation Laboratory	AE	-	-	3	50	50	100	1.5
9	13AEP79	Project preliminaries and Technical Seminars	AE	-	1	-	-	-	-	-
						TOTAL	400	400	800	25

SEMESTER: VIII

Sl No	Subject Code	Subject Name	Teaching Dept.	Teaching Hours/week			Examination			Credits
				L#	T#	P#	CIE*	SEE**	Total	
1	13AEH81	Operations Management	AE	3	-	-	50	50	100	3
2	13AE82	Aircraft Radar System	AE	2	2	-	50	50	100	3
3	13AEE83X	Elective (Group F)	AE	4	-	-	50	50	100	4
4	13AEP84	Project Work	AE	-	-	-	100	100	200	13
5	13AEP85	Mini Project/Internship/Self Study	AE	-	-	-	50	50	100	2
6	13AEP85	Seminars on current topics	AE	-	-	3	-	-	-	-
						TOTAL	200	200	400	25

*Continuous Internal Evaluation ** Semester End Examination # L- Lecture, T- Tutorial, P- Practical

Elective Group A — Credits 4

Sl. No.	Subject Code	Subject Name
1.	13AEE561	Theory of Elasticity
2.	13AEE562	Internal Combustion Engines
3.	13AEE563	Non Traditional Machining
4.	13AEE564	Industrial Engineering & Management
5.	13AEE565	Turbo-machinery
6.	13AEE566	Cryogenics

Elective Group B — Credits 4

Sl. No.	Subject Code	Subject Name
1.	13AEE651	Theory of Plasticity & Metal Forming Processes
2.	13AEE652	Refrigeration & Air conditioning
3.	13AEE653	Finite Element Methods
4.	13AEE654	Energy Engineering
5.	13AEE655	Automotive Engineering
6.	13AEE656	Welding Technology

Elective Group C (Open Elective) — Credits 3

Sl. No.	Subject Code	Subject Name
1.	13AEO661	Numerical Methods
2.	13AEO662	MEMS
3.	13AEO663	Organizational Behavior
4.	13AEO664	TQM
5.	13AEO665	Essentials of Information System
6.	13AEO666	Solar energy

Elective Group D — Credits 4

Sl. No.	Subject Code	Subject Name
1.	13AEE751	Smart Materials
2.	13AEE752	Tribology
3.	13AEE753	Statistical Quality Control
4.	13AEE754	Introduction to Composite Materials
5.	13AEE755	Renewable Energy resources
6.	13AEE756	Flight Testing

Elective Group E (open Elective) — Credits 3

Sl. No.	Subject Code	Subject Name
1.	13AEO761	Computer Graphics
2.	13AEO762	Nano Technology
3.	13AEO763	Management Information System
4.	13AEO764	Project Management
5.	13AEO765	Non Destructive Testing
6.	13AEO766	Computational Fluid Dynamics

Elective Group F — Credits 4

Sl. No.	Subject Code	Subject Name
1.	13AEE831	Experimental Stress Analysis
2.	13AEE832	Machine Tool design
3.	13AEE833	Foundry Technology
4.	13AEE834	Bio Mass Energy System
5.	13AEE835	Computer Integrated Manufacturing
6.	13AEE836	Aircraft Communication System

NITTE MEENAKSHI INSTITUTE OF TECHNOLOGY

(An Autonomous Institution under Visvesvaraya Technological University)

Accredited By NAAC, New Delhi,

Department of Aeronautical Engineering

Board of studies meeting on 07-03-2015

Office of HoD Aeronautical Engineering, NMIT

Agenda

1. Approval of scheme and syllabus for III and IV semesters of Aeronautical Engineering for students of 2014-15 batch.
2. Approval of revision made to syllabus of V and VI semesters Aeronautical Engineering for students of 2013-17 batch.
3. Approval of panel of BoE with external examiners.

BoS Panel for the Academic year 2015-2016

Sl No.	Name	Designation	Organization	Position
1	Dr. M V Reddy	Prof. &HoD	NMIT, Bangalore	Chairman
2	Dr. B Subba Reddy	Fellow	Honeywell	Member
3	Dr. J. Nagabhushananam	Professor Emerotus	IISc	Member, VTU Nominee
4	Mr. S. Parthan	Professor and HOD (retd)	Dept of aerospace engineering, IIT, kharagpur	Member
5	Dr.A A Pashilkar	Deputy Head,FMC Division	NAL,Bangalore	Member
6	Mr. Jayasimha	General Manager	HAL Engine division	Member
7	Dr. Vivek sanghi	Professor	NMIT, Bangalore	Member
8	Wg Cdr Mati	Associate professor	NMIT, Bangalore	Member
9	Mr. Mahendra M A	Assistant professor	NMIT, Bangalore	Member
10	Mr. Harish H V	Assistant professor	NMIT, Bangalore	Member
11	Mr. Santhosh N	Assistant professor	NMIT, Bangalore	Member

NITTE MEENAKSHI INSTITUTE OF TECHNOLOGY

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Accredited By NAAC, New Delhi,

Department of Aeronautical Engineering

PROCEEDINGS OF THE BOARD OF STUDIES IN AERONAUTICAL ENGINEERING MEETING HELD ON 07-03-2015 IN THE DEPARTMENT OF AERONAUTICAL ENGINEERING

MEMBERS PRESENT

Sl No.	Name	Designation	Organization	Position
1	Dr. M V Reddy	Prof. &HoD	NMIT, Bangalore	Chairman
2	Dr. B Subba Reddy	Fellow	Honeywell	Member
3	Dr. J. Nagabhushananam	Professor Emerotus	IISc,Bangalore	Member, VTU Nominee
4	Mr. S. Parthan	Professor and HOD (retd)	Dept of aerospace engineering, IIT, kharagpur	Member
5	Dr.A A Pashilkar	Deputy Head,FMC Division	NAL,Bangalore	Member
6	Mr. Jayasimha	General Manager	HAL Engine division	Member
7	Dr. Vivek sanghi	Professor	NMIT, Bangalore	Member
8	Wg Cdr Mati	Associate professor	NMIT, Bangalore	Member
9	Mr. Mahendra M A	Assistant professor	NMIT, Bangalore	Member
10	Mr. Harish H V	Assistant professor	NMIT, Bangalore	Member
11	Mr. Santhosh N	Assistant professor	NMIT, Bangalore	Member

The chairman welcomed all the members of the board. The subjects listed in the agenda were deliberated and proceedings are as follows:

1. The complete scheme for the batch 2014-18 and syllabus of V and VI Semesters of 2017-2021 batch has been approved and is enclosed herewith as Appendix-I.
2. The highlights of modifications made in scheme of batch 2014-2018 in comparison with scheme of 2013-2017 batch is as given below.

2013-17 Batch	2014 -18 Batch	Remarks
Semester- III & IV		
Basic thermodynamics & Applied thermodynamics	Engineering thermodynamics	Basic and Applied thermodynamics have been combined and named it as Engineering thermodynamics.
Manufacturing Technology	Production Technology	Manufacturing Technology Course name has been changed to Production Technology
Semester-V & VI		
Management and Entrepreneurship	Entrepreneurship development, management & IPR	Management and Entrepreneurship course has been revised as Entrepreneurship development, management & IPR and introduced in 7 semester
	Introduction to vibrations and aero elasticity	Introduction to vibrations and aero elasticity course has been introduced in semester-V
Turbo machinery (Program Elective)	Turbo machinery	Introduced Turbo machinery as core course for semester-V
Aircraft instruments	Aircraft system and instruments	Aircraft instruments course has been revised and named it as aircraft systems and instruments.
Aircraft Electrical system	-	The course has been removed
Applied gas dynamics	-	The course has been removed
The Elective courses in Group-A such as, Theory of elasticity, Internal combustion engines, Nontraditional machining, Industrial engineering & management and turbo machinery	The Elective courses in Group-A Aircraft materials, Total Quality management, Non destructive testing, Introduction to helicopter aerodynamics, industrial engineering management.	The group A elective courses have been changed.
-	Wind Tunnel Techniques	Wind Tunnel Techniques course has been introduced in open elective for semester-VI
-	Hydraulics and Pneumatics	Hydraulics and Pneumatics course has been introduced in program elective for semester-VI
-	Fatigue and Fracture Mechanics	Fatigue and Fracture Mechanics

		course has been introduced in program elective for semester-VI
-	Aircraft maintenance, repair and overhaul	Aircraft maintenance, repair and overhaul course has been introduced in program elective for semester-VI
-	Airworthiness and ceritification	Airworthiness and ceritification course has been introduced in program elective for semester-VI
-	Element of rocket propulsion	Element of rocket propulsion course has been introduced in program elective for semester-VI
Semester- VII & VIII		
Control engineering	Control engineering	The course Control engineering has been shifted from semester VII to Semester-VI
Operation management	-	The course has been removed
Introduction to heat and mass transfer	Introduction to heat and mass transfer	Introduction to heat and mass transfer has been shifted from Semester-VIII to program elective group-D, for semester-VII without any modifications in course content.
The program elective courses in Group-D such as, Smart materials, tribology, statistical quality control, introduction to composite materials, renewable energy resources flight testing	The program elective courses in Group-D such as, Introduction to heat and mass transfer, flight testing, theory of plates and shells,experimental stress analysis, introduction to cryogenics.	The program elective courses in Group-D have been replaced with new courses in semester-VII
The Open Elective-E courses in Group-E such as, computer graphics,nano technology, management information system, project management, non destructive testing and computational fluid dynamics.	The Open elective e courses in Group-E , introduction to aircraft and its systems, introduction to composite materials, helicopter theory, renewable energy resources and instruction to multi disciplinary design optimization	The open elective courses in Group-E have been replaced with new courses in semester-VII
Operations management	Flight vehicle design	The core course operation management in semester-VII has been replaced by Flight vehicle design in semester-VIII
The program elective courses in Group-F such as, experimental stress analysis, machine tool design , flight vehicle design, biomass engineering system, computer integrated manufacturing and foundry technology	The program elective courses in Group-F computational fluid dynamics, computer integrated manufacturing, introduction to boundary layer theory, smart materials and industrial aerodynamics	The program elective courses in Group-F have been replaced with new courses in semester-VIII

Details of modifications made in the scheme and syllabus.

Semester- III & IV

1. Basic thermodynamics & Applied thermodynamics

   The Basic and Applied thermodynamics have been combined and named it as Engineering thermodynamics. The three units such as fundamentals of thermodynamics, first law of thermodynamics, second law of thermodynamics and entropy concepts are retained from basic thermodynamics. The topics such as IC Engines, air standards cycles and psychometric have been introduced in the syllabus.

2. Production technology

   Manufacturing Technology Course name has been changed to Production Technology as suggested by BoS members without modifying the course contents.

Semester-V & VI

1. Entrepreneurship development, management & IPR

   Management and Entrepreneurship course has been revised as Entrepreneurship development, management & IPR and introduced in 7 semester. The topics such as intellectual property rights, patents, IPR Governance, copyrights concepts have been included in the 4th and 5 th units.

2. Introduction to vibrations and aero elasticity

   Introduction to vibrations and aero elasticity course has been introduced in semester-V.

3. Turbo machinery

   Turbo machinery course has been introduced as core course instead of program elective for semester-V without any modifications in the syllabus content.

4. Aircraft systems and instruments.

   Aircraft instruments course has been revised and named it as aircraft systems and instruments. The topics such as flight control systems, aircraft fuel and hydraulic systems and aircraft communication and radar systems have been introduced in unit-1, unit-2 and unit-3 along with aircraft instruments concepts.

5. Group –A (Program Electives)

The Elective courses in Group-A such as, Theory of elasticity, Internal combustion engines, Nontraditional machining, Industrial engineering & management and turbo machinery have been replaced by Total Quality management, Non destructive testing, Introduction to helicopter aerodynamics, industrial engineering management.

Semester- VII & VIII

1. Control engineering

   The course Control engineering has been shifted from semester VII to Semester-VI without any modifications in the course content.

2. Introduction to heat and mass transfer

   Introduction to heat and mass transfer has been shifted from Semester-VIII to program elective group-D, for semester-VII without any modifications in course content.

3. Program Electives Group-D

   The program elective courses in Group-D such as, Smart materials, tribology, statistical quality control, introduction to composite materials, renewable energy resources flight testing have been replaced by Introduction to heat and mass transfer, flight testing, theory of plates and shells,experimental stress analysis, introduction to cryogenics.

4. Open Elective Group-E

   The Open Elective-E courses in Group-E such as, computer graphics,nano technology, management information system, project management, non destructive testing and computational fluid dynamics have been replaced by introduction to aircraft and its systems, introduction to composite materials, helicopter theory, renewable energy resources and instruction to multi disciplinary design optimization for semester-VII.

5. Flight vehicle design

   The core course operation management in semester-VII has been replaced by Flight vehicle design in semester-VIII.

6. Program Elective Group-F

   The program elective courses in Group-F such as, experimental stress analysis, machine tool design, flight vehicle design, biomass engineering system, computer integrated manufacturing and foundry technology have been replaced by computational fluid

dynamics, computer integrated manufacturing, introduction to boundary layer theory, smart materials and industrial aerodynamics for semester- VIII.

Dr. M.V.R. REDDY
Professor & Head
Department of Aeronautical Engineering
NMIT, Bangalore-560 064

Dr Shaik Ismail S., Ph.D.
Chairman, BoS
Department of Aeronautical Engineering

Santhosh N
Member secretary, BoS
Department of
Aeronautical Engineering

Proposed Course Curriculum for Semester III to Semester VIII [2014-2018 BATCH]

SEMESTER: III

Sl No	Subject Code	Subject Name	Course Type	Teaching Dept.	Teaching Hours/week			Examination			Credits
					L#	T#	P#	CIE*	SEE**	Total	
1	14MAT31	ENGINEERING MATHEMATICS - III	BS	MAT	4	1	-	50	50	100	4
2	14AE32	ELEMENTS OF AERONAUTICS	PC	AE	4	-	-	50	50	100	4
3	14AE33	ENGINEERING THERMODYNAMICS	PC	AE/ME	3	2	-	50	50	100	4
4	14AE34	MECHANICS OF MATERIALS	PC	AE/ME	3	2	-	50	50	100	4
5	14AE35	METROLOGY AND MEASUREMENTS	PC	AE/ME	4	-	-	50	50	100	4
6	14AE36	FLUID MECHANICS	PC	AE/ME	3	2	-	50	50	100	4
7	14AEL37	FLUID MECHANICS LAB	PL	AE/ME	-	-	2	50	50	100	1
8	14AEL38	METROLOGY AND MEASUREMENTS LAB	PL	AE/ME	-	-	3	50	50	100	1.5
9	14AEL39	MATERIAL TESTING LAB	PL	AE/ME	-	-	3	50	50	100	1.5
				TOTAL				450	450	900	28

SEMESTER: IV

Sl No	Subject Code	Subject Name	Course Type	Teaching Dept.	Teaching Hours/week			Examination			Credits
					L#	T#	P#	CIE*	SEE**	Total	
1	14MAT41	ENGINEERING MATHEMATICS - IV	BS	MAT	3	2	-	50	50	100	4
2	14AE42	THEORY OF MACHINES	PC	AE/ME	3	2	-	50	50	100	4
3	14AE43	MATERIAL SCIENCE AND METALLURGY	PC	AE/ME	3	1	-	50	50	100	3
4	14AE44	COMPUTER AIDED MACHINE DESIGN	PC	AE/ME	3	-	3	50	50	100	4
5	14AE45	AIRCRAFT PROPULSION	PC	AE	3	2	-	50	50	100	4
6	14AE46	PRODUCTION TECHNOLOGY	PC	AE/ME	4	-	-	50	50	100	4
7	14AEL47	MACHINE SHOP LAB	PL	AE/ME	-	-	3	50	50	100	1.5
8	14AEL48	FOUNDARY AND FORGING LAB	PL	AE/ME	-	-	3	50	50	100	1.5
				TOTAL				400	400	800	26

SEMESTER: V

Sl No	Subject Code	Subject Name	Course Type	Teaching Dept.	Teaching Hours/week			Examination			Credits
					L#	T#	P#	CIE*	SEE**	Total	
1	14AE51	AIRCRAFT SYSTEMS AND INSTRUMENTS	PC	AE	4	-	-	50	50	100	4
2	14AE52	AIRCRAFT STRUCTURES-I	PC	AE	3	2	-	50	50	100	4
3	14AE53	AERODYNAMICS-I	PC	AE	3	2	-	50	50	100	4
4	14AE54	INTRODUCTION TO VIBRATION AND AEROELASTICITY	PC	AE/ME	3	2	-	50	50	100	4
5	14AE55	TURBOMACHINARY	PC	AE	3	2	-	50	50	100	4
6	14AEE56X	PROGRAM ELECTIVE-A	PE	AE	3	1	-	50	50	100	4
7	14AEL57	ENERGY CONVERSION LAB	PL	AE	-	-	3	50	50	100	1.5
8	14AEL58	AERODYNAMICS LAB	PL	AE	-	-	3	50	50	100	1.5
							TOTAL	400	400	800	27

SEMESTER: VI

Sl No	Subject Code	Subject Name	Course Type	Teaching Dept.	Teaching Hours/week			Examination			Credits
					L#	T#	P#	CIE*	SEE**	Total	
1	14AE61	AERODYNAMICS-II	PC	AE	3	2	-	50	50	100	4
2	14AE62	CONTROL ENGINEERING	PC	AE/ME	3	2	-	50	50	100	4
3	14AE63	AIRCRAFT PERFORMANCE	PC	AE	4	-		50	50	100	4
4	14AE64	MANAGEMENT FUNCTIONS AND ORGANISATIONAL BEHAVIOR	HU	AE/ME	3	-	-	50	50	100	3
5	14AEE65X	PROGRAM ELECTIVE-B	PE	AE	4	-	-	50	50	100	4
6	14AEO66X	OPEN ELECTIVE-C	OE	AE	3	-	-	50	50	100	3
7	14AEL67	AIRCRAFT PROPULSION LAB	PL	AE/ME	-	-	3	50	50	100	1.5
8	14AEL68	STRUCTURES LAB	PL	AE	-	-	3	50	50	100	1.5
9	14AEP69	SEMINAR	PP	AE	-	-	3	25@	-	25@	-
							TOTAL	400	400	800	25

@Marks carried to VIII sem.

SEMESTER: VII

Sl No	Subject Code	Subject Name	Course Type	Teaching Dept.	Teaching Hours/week			Examination			Credits
					L#	T#	P#	CIE*	SEE**	Total	
1	14AE71	AIRCRAFT STRUCTURES-II	PC	AE	3	2	-	50	50	100	4
2	14AE72	AIRCRAFT STABILITY AND CONTROL	PC	AE	3	1	-	50	50	100	3
3	14AE73	ENTREPRENEURSHIP DEVELOPMENT, MANAGEMENT & IPR	HU		4	-	-	50	50	100	3
4	14AE74	GAS TURBINE TECHNOLOGY	PC	AE	3	1	-	50	50	100	3
5	14AEE75X	PROGRAM ELECTIVE-D	PE	AE	4	-	-	50	50	100	4
6	14AEO76X	OPEN ELECTIVE-E	OE	AE	4	-	-	50	50	100	3
7	14AEL77	DESIGN, MODELLING AND ANALYSIS LAB	PL	AE	-	-	3	50	50	100	1.5
8	14AEL78	SIMULATION LAB	PL	AE	-	-	3	50	50	100	1.5
9	14AEP79	MAJOR PROJECT-PHASE 1	PP	AE	-	-	3	25@	-	25@	-
							TOTAL	400	400	800	23

@Marks carried to VIII sem

SEMESTER: VIII

Sl No	Subject Code	Subject Name	Course Type	Teaching Dept.	Teaching Hours/week			Examination			Credits
					L#	T#	P#	CIE*	SEE**	Total	
1	14AE81	INTERNSHIP/SELF STUDY/MINOR PROJECT$	PC		-	-	3	50	50	100	2
2	14AE82	FLIGHT VEHICLE DESIGN	PE		4	-	-	50	50	100	4
3	14AEE83X	PROGRAM ELECTIVE -F			4	-	-	50	50	100	4
4	14AEP84	MAJOR PROJECT-FINAL SUMISSION & EVALUATION	PP		-	-	15	50+50 ^	100	200	15
							TOTAL	200	200	400	25

^Marks carried from VI and VII sem to VIII sem.

PROGRAM ELECTIVE-A

SL. NO.	SUBJECT CODE	SUBJECT NAME
1	14AEE561	AIRCRAFT MATERIALS
2	14AEE562	TOTAL QUALITY MANAGEMENT (TQM)
3	14AEE563	NON-DESTRUCTIVE TESTING
4	14AEE564	INTRODUCTION TO HELICOPTER AERODYNAMICS
5	14AEE565	INDUSRTIAL ENGINEERING AND MANAGEMENT

PROGRAM ELECTIVE-B

SL. NO.	SUBJECT CODE	
1	14AEE651	FINITE ELEMENT METHOD
2	14AEE652	AIRCRAFT COMMUNICATION SYSTEM
3	14AEE653	HYDRAULICS AND PNEUMATICS
4	14AEE654	FATIGUE AND FRACTURE MECHANICS
5	14AEE655	PROJECT MANAGEMENT

OPEN ELECTIVE-C

		SUBJECT NAME
1	14AEO661	WIND TUNNEL TECHNIQUES
2	14AEO662	AIRCRAFT MAINTENANCE, REPAIR AND OVERHAUL
3	14AEO663	AIRWORTHINESS AND CERTIFICATION
4	14AEO664	AIRCRAFT MATERIALS
5	14AEO665	ELEMENTS OF ROCKET PROPULSION

PROGRAM ELECTIVE-D

SL. NO.	SUBJECT CODE	SUBJECT NAME
1	14AEE751	INRODUCTION TO HEAT AND MASS TRANSFER
2	14AEE752	FLIGHT TESTING
3	14AEE753	THEORY OF PLATES AND SHELLS
4	14AEE754	EXPERIMENTAL STRESS ANALYSIS
5	14AEE755	INTRODUCTION TO CRYOGENICS

OPEN ELECTIVE -E

SL. NO.	SUBJECT CODE	SUBJECT NAME
1	14AEO761	INTRODUCTION TO AIRCRAFT AND ITS SYSTEMS
2	14AEO762	INTRODUCTION TO COMPOSITE MATERIALS
3	14AEO763	HELICOPTER THEORY
4	14AEO764	RENEWABLE ENERGY RESOURCES
5	14AEO765	INTRODUCTION TO MULTI DISCIPLINARY DESIGN OPTIMIZATION

PROGRAM ELECTIVE -F

SL. NO.	SUBJECT CODE	SUBJECT NAME
1	14AEE831	COMPUTATIONAL FLUID DYNAMICS
2	14AEE832	COMPUTER INTEGRATED MANUFACTURING
3	14AEE833	INTRODUCTION TO BOUNDARY LAYER THEORY
4	14AEE834	SMART MATERIALS
5	14AEE835	INDUSTRIAL AERODYNAMICS

SL. NO.	BS. SC (BS)	ENGG. CORE (EC)	PROG. CORE (PC)	CORE. ELE (PE)	OPE. ELE (OE)	HUM (HU)	PROJ/INT /SEMINAR	
1	9.5	13.5						23
2	9.5	13.5				2		25
3	4	6	16					26
4	4		22					26
5			23	4				27
6			15	4	3	3		25
7			13	4	3	3		23
8			4	4			17	25
	27	33	93	16	06	08	17	200

NITTE MEENAKSHI INSTITUTE OF TECHNOLOGY

DEPARTMENT OF AERONAUTICAL ENGINEERING

KNOWLEDGE + CHARACTER + UNITY

PROCEEDINGS OF BOS MEETING

12 MAY 2016

CHAIRMAN, BoS

Professor & Head,
Department of Aeronautical Engineering,
Nitte Meenakshi Institute of Technology,
Bangalore - 560 064.

PRINCIPAL

PRINCIPAL
NITTE MEENAKSHI INSTITUTE OF TECHNOLOGY
GKVK CAMPUS, GOLLAHALLI
YELAHANKA, BANGALORE - 64.

DEAN (ACADEMIC)

NITTE MEENAKSHI INSTITUTE OF TECHNOLOGY
YELAHANKA
BANGALORE

NITTE MEENAKSHI INSTITUTE OF TECHNOLOGY

(An Autonomous Institution under Visvesvaraya Technological University)

Department of Aeronautical Engineering

Board of Studies (Aeronautical Engineering)

Date: 12-05-2016

Office of HoD Aeronautical Engineering, NMIT

Agenda

1. Approval of Scheme and syllabus for VII and VIII Semesters of Aeronautical Engineering for students of 2013 – 2017 batch.
2. Approval of revision made to scheme of V and VI semester Aeronautical Engineering for students of 2014 – 2018 batch.
3. Approval of panel of B O E with external examiners.
4. Any other matter with the permission of the Chairman.

BOS PANEL FOR THE ACADEMIC YEAR 2016-2017:

BOARD OF STUDIES

Sl No	Name	Designation	Organization	Position
1	Dr S Venkateswaran	Professor & Head	NMIT	Chairman
2	Dr B K Muralidhara	Professor	UVCE	Member
3	Dr J Nagabhushanam	Professor Emeritus	IISc	Member, VTU Nominee
4	Santhosh N	Assistant Professor	NMIT	Member Secretary
5	Mahendra M A	Assistant Professor	NMIT	Member
6	Harish H V	Assistant Professor	NMIT	Member
7	Siddanlingappa P K	Asisstant Professor	NMIT	Member

Dr S Venkateswaran,
Chairman, BoS
Department of Aeronautical Engineering

Santhosh N
Member secretary, BoS
Department of Aeronautical Engineering

Dr. S. Venkateswaran
Ph.D.(IISc), Dr.(Techn.)TU-Vienna
Professor & Head,
Department of Aeronautical Engineering,
Nitte Meenakshi Institute of Technology,
Bangalore - 560 064.

NITTE MEENAKSHI INSTITUTE OF TECHNOLOGY

(An Autonomous Institution under Visvesvaraya Technological University)

Department of Aeronautical Engineering

Board of Studies (Aeronautical Engineering)

Date: 12-05-2016

Office of HoD Aeronautical Engineering, NMIT

COMPREHENSIVE REPORT

of Proceedings & Curriculum Revision

for Academic Year 2016 – 2017

Chairman, BoS
(Dr S Venkateswaran)
Professor & Head,
Department of Aeronautical Engineering

NITTE MEENAKSHI INSTITUTE OF TECHNOLOGY

(An Autonomous Institution under Visvesvaraya Technological University)

PROCEEDINGS OF THE BOARD OF STUDIES IN AERONAUTICAL ENGINEERING MEETING HELD ON 12/05/2016 IN THE DEPARTMENT OF AERONAUTICAL ENGINEERING

MEMBERS PRESENT

1	Dr S Venkateswaran	Professor & Head	NMIT	Chairman
2	Dr J Nagabhushanam	Professor Emeritus	IISc	Member, VTU Nominee
3	Dr B K Muralidhara	Professor	UVCE	Member
4	Mahendra M A	Assistant Professor	NMIT	Member
5	Harish H V	Assistant Professor	NMIT	Member
6	Santhosh N	Asisstant Professor	NMIT	Member Secretary

The chairman welcomed all the members of the board. The subjects listed in the agenda were deliberated and proceedings are as follows:

1. The revision of the scheme and syllabus of studies of VII and VIII Semester pertaining to 2013 to 2017 batch has been approved. The subject Aircraft Radar System in the 8th semester of 2013 – 2017 scheme has been deleted and the

12/5/16 J. Nagabhushanam 12/5/16 Santhosh N 12/5/16 12/5/16 12/5/16 12/5/16

subject Heat and Mass transfer has been introduced in the 8th semester of 2013 – 2017 scheme. The scheme and syllabus of Heat and Mass Transfer has been approved. The approved syllabus has been enclosed herewith as Appendix – I

2. The Scheme of studies for all the semesters of 2014 – 2018 batch has been already approved in the earlier BOS meeting. In continuation, in this meeting, the syllabus for V and VI semester subjects pertaining to 2014 – 2018 batch has been approved. The details are given in Appendix – II

3. The Panel of Examiners for the academic year 2016 – 2017 has been approved. The details are given in Appendix – III.

4. The meeting ended with thanks to the Chair

Dr S Venkateswaran,
Chairman, BoS
Department of Aeronautical Engineering

Appendix –I

NITTE MEENAKSHI INSTITUTE OF TECHNOLOGY

(An Autonomous Institution, Affiliated to VTU, Belgaum and Accredited by NAAC, UGC)

DEPARTMENT OF AERONAUTICAL ENGINEERING

Approved Syllabus for VII and VIII semester of B.E. Aeronautical Engineering course 2014-2018 Batch

In the BoS meeting held on 12/05/2016

Approved

APPENDIX - I
INTRODUCTION TO HEAT AND MASS TRANSFER

Sub Code :	18AE82	Credits : 04
Hours/Week :	4+0+0	CIE Marks :50
Total Hours :	48	SEE Marks : 50
Exam Hours :	03	

UNIT I

Introduction: Units, definitions, Basic modes of Heat transfer, Thermal conductivity for various types of materials, convection heat transfer co-efficient, Stefan Boltzman's law of Thermal radiation.
One Dimensional Steady State Heat Conduction : Thermal conductivity and other relevant properties, Heat diffusion equation in Cartesian coordinates, boundary and initial conditions. One dimensional, steady state heat conduction without and with heat generation through plane slabs, cylinders and spheres, Concept of thermal resistance. Electrical analogy. Heat transfer through composite slabs, cylinders and spheres, contact resistance. Critical thickness of insulation for cylinder and sphere. Steady state heat conduction through fins of uniform cross section, fin effectiveness and fin efficiency.

09 Hours

UNIT II

Multi-dimensional Steady State Heat Conduction: Two-dimensional steady state conduction, analytical solution, conduction shape factor, finite difference and finite volume methods
Unsteady State Heat Conduction: Transient conduction in solids with negligible internal temperature gradients (lumped parameter), Biot number and Fourier number. One-dimensional transient conduction in slab and radial systems: exact and approximate solutions. Finite difference methods: explicit and implicit formulations.

08 Hours

UNIT III

Convection: Flow over a body, velocity and thermal boundary layers, drag-co-efficient and heat transfer coefficient. Flow inside a duct: hydrodynamics and thermal entry lengths; fully developed and developing flow. Use of various correlations in forced convection heat transfer, flow over a flat plate, and flow across a single cylinder and tube bundles. Free convection heat transfer from vertical surface and vertical cylinder, horizontal surface and horizontal cylinders.

08 Hours

UNIT IV

Heat Exchangers: Heat exchanger types, flow arrangements, overall heat transfer coefficient, fouling factor, LMTD for parallel flow and counter flow heat exchangers. Effectiveness-NTU method, expression for effectiveness of a parallel flows and counter flow heat exchangers. Multi-pass and cross flow heat exchangers **Boiling and Condensation:** Different regimes of boiling, mechanism of condensation, Nusselt's theory of film condensation on a vertical surface, use of correlations in solving film wise condensation on plane surfaces, horizontal tubes and tube banks.

08 Hours

UNIT V

Radiation Heat Transfer: Definitions, concept of a black body, Kirchoff's law, Lambert's Cosine Law, Stefan-Boltzman's law, Plank's distribution law, Wein's displacement law, configuration factor. Radiation heat exchange between two parallel plates, radiation shielding, radiation heat exchange in an enclosure. **Mass Transfer:** Fick's law of diffusion. Mass transfer coefficient, Evaporation of water into air, Schmidt number, Sherwood number.

08 Hours

Text Books:

1. Heat & Mass Transfer, by Tirumaleshwar, Pearson-2006
2. Heat Transfer, by P.K. Nag, Tata Mc Graw Hill 2002

Reference Books:

1. Heat Transfer, a Practical Approach, Yunus A- Cengel Tata Mc Graw Hill
2. Principles of Heat Transfer by Kreith Thomas Learning 2001
3. Fundamentals of Heat and Mass Transfer by Frenk P. Incropera and David P. Dewitt, John

12/5/16 · T. Nagabhushanam 12/5/16 · 12/5/16 · 12/5/16 · 12/5/16 · 12/5/16 · 12/5/16

Appendix - II

NITTE MEENAKSHI INSTITUTE OF TECHNOLOGY

(An Autonomous Institution, Affiliated to VTU, Belgaum and Accredited by NAAC, UGC)

DEPARTMENT OF AERONAUTICAL ENGINEERING

KNOWLEDGE * CHARACTER * UNITY

Approved Syllabus for V and VI Semester of B.E. Aeronautical Engineering Course 2014-2018 Batch
In the BOS Meeting held on 12/05/2016

NITTE MEENAKSHI INSTITUTE OF TECHNOLOGY

YELAHANKA, BANGALORE

Proposed Scheme for Higher Semester (III to VIII semester)-2014 SCHEME

SEMESTER: III

Sl No	Subject Code	Subject Name	Course Type	Teaching Dept.	Teaching Hours/week			Examination			Credits
					L#	T#	P#	CIE*	SEE**	Total	
1	14AE31	ENGINEERING MATHEMATICS - III	BS	MAT	4	1	-	50	50	100	4
2	14AE32	ELEMENTS OF AERONAUTICS	PC		3			50	50	100	3
3	14AE33	ENGINEERING THERMODYNAMICS	PC		4			50	50	100	4
4	14AE34	MECHANICS OF MATERIALS	PC		4			50	50	100	4
5	14AE35	METROLOGY AND MEASUREMENTS	PC		4			50	50	100	3
6	14AE36	FLUID MECHANICS	PC		4			50	50	100	4
7	14AEL37	FLUID MECHANICS LAB	PC		-	-	3	50	50	100	1
8	14AEL38	METROLOGY AND MEASUREMENTS LAB	PC		-	-	3	50	50	100	1.5
9	14AEL39	MATERIAL TESTING LAB									1.5
							TOTAL	400	400	800	26

SEMESTER: IV

Sl No	Subject Code	Subject Name	Course Type	Teaching Dept.	Teaching Hours/week			Examination			Credits
					L#	T#	P#	CIE*	SEE**	Total	
1	14AE41	ENGINEERING MATHEMATICS - III	BS	MAT	4	1	-	50	50	100	4
2	14AE42	THEORY OF MACHINES	PC		3			50	50	100	3
3	14AE43	MATERIAL SCIENCE & METALLURGY	PC		4			50	50	100	4
4	14AE44	COMPUTER AIDED MACHINE DRAWING	PC		4			50	50	100	4
5	14AE45	AIRCRAFT PROPULSION	PC		4			50	50	100	4
6	14AE46	PRODUCTION TECHNOLOGY	PC		4			50	50	100	4
7	14AEL47	MACHINE SHOP LAB	PC		-	-	3	50	50	100	1.5
8	14AEL48	FOUNDRY & FORGING LAB	PC		-	-	3	50	50	100	1.5
							TOTAL	400	400	800	26

SEMESTER: V

Sl No	Subject Code	Subject Name	Course Type	Teaching Dept.	Teaching Hours/week			Examination			Credits
					L#	T#	P#	CIE*	SEE**	Total	
1	14AE51	AIRCRAFT SYSTEMS AND INSTRUMENTS	PC	AE	4	-	-	50	50	100	4
2	14AE52	AIRCRAFT STRUCTURES-I	PC	AE	3	2	-	50	50	100	4
3	14AE53	AERODYNAMICS-I	PC	AE	3	2	-	50	50	100	4
4	14AE54	INTRODUCTION TO VIBRATION AND AEROELASTICITY	PC	AE/ME	3	2	-	50	50	100	4
5	14AE55	TURBOMACHINARY	PC	AE	3	2	-	50	50	100	4
6	14AEE56X	PROGRAM ELECTIVE-A	PE	AE	3	1	-	50	50	100	4
7	14AEL57	ENERGY CONVERSION LAB	PL	AE	-	-	3	50	50	100	1.5
8	14AEL58	AERODYNAMICS LAB	PL	AE	-	-	3	50	50	100	1.5
				TOTAL				400	400	800	27

SEMESTER: VI

Sl No	Subject Code	Subject Name	Course Type	Teaching Dept.	Teaching Hours/week			Examination			Credits
					L#	T#	P#	CIE*	SEE**	Total	
1	14AE61	AERODYNAMICS-II	PC	AE	3	2	-	50	50	100	4
2	14AE62	CONTROL ENGINEERING	PC	AE/ME	3	2	-	50	50	100	4
3	14AE63	AIRCRAFT PERFORMANCE	PC	AE	4	-		50	50	100	4
4	14AE64	MANAGEMENT FUNCTIONS AND ORGANISATIONAL BEHAVIOR	HU	AE/ME	3	-	-	50	50	100	3
5	14AEE65X	PROGRAM ELECTIVE-B	PE	AE	4	-	-	50	50	100	4
6	14AEO66X	OPEN ELECTIVE-C	OE	AE	3	-	-	50	50	100	3
7	14AEL67	AIRCRAFT PROPULSION LAB	PL	AE/ME	-	-	3	50	50	100	1.5
8	14AEL68	STRUCTURES LAB	PL	AE	-	-	3	50	50	100	1.5
9	14AEP69	SEMINAR	PP	AE	-	-	3	25@	-	25@	-
				TOTAL				400	400	800	25

@Marks carried to VIII sem.

PROGRAM ELECTIVE-A

SL. NO.	SUBJECT CODE	SUBJECT NAME
1	14AEE561	AIRCRAFT MATERIALS
2	14AEE562	TOTAL QUALITY MANAGEMENT (TQM)
3	14AEE563	NON-DESTRUCTIVE TESTING
4	14AEE564	INTRODUCTION TO HELICOPTER AERODYNAMICS
5	14AEE565	INDUSRTIAL ENGINEERING AND MANAGEMENT

PROGRAM ELECTIVE-B

SL. NO.	SUBJECT CODE	
1	14AEE651	FINITE ELEMENT METHOD
2	14AEE652	AIRCRAFT COMMUNICATION SYSTEM
3	14AEE653	HYDRAULICS AND PNEUMATICS
4	14AEE654	FATIGUE AND FRACTURE MECHANICS
5	14AEE655	PROJECT MANAGEMENT

OPEN ELECTIVE-C

		SUBJECT NAME
1	14AEO661	WIND TUNNEL TECHNIQUES
2	14AEO662	AIRCRAFT MAINTENANCE, REPAIR AND OVERHAUL
3	14AEO663	AIRWORTHINESS AND CERTIFICATION
4	14AEO664	AIRCRAFT MATERIALS
5	14AEO665	ELEMENTS OF ROCKET PROPULSION

PROGRAM ELECTIVE-D

SL. NO.	SUBJECT CODE	SUBJECT NAME
1	14AEE751	INRODUCTION TO HEAT AND MASS TRANSFER
2	14AEE752	FLIGHT TESTING
3	14AEE753	THEORY OF PLATES AND SHELLS
4	14AEE754	EXPERIMENTAL STRESS ANALYSIS
5	14AEE755	INTRODUCTION TO CRYOGENICS

OPEN ELECTIVE -E

SL. NO.	SUBJECT CODE	SUBJECT NAME
1	14AEO761	INTRODUCTION TO AIRCRAFT AND ITS SYSTEMS
2	14AEO762	INTRODUCTION TO COMPOSITE MATERIALS
3	14AEO763	HELICOPTER THEORY
4	14AEO764	RENEWABLE ENERGY RESOURCES
5	14AEO765	INTRODUCTION TO MULTI DISCIPLINARY DESIGN OPTIMIZATION

PROGRAM ELECTIVE -F

SL. NO.	SUBJECT CODE	SUBJECT NAME
1	14AEE831	COMPUTATIONAL FLUID DYNAMICS
2	14AEE832	COMPUTER INTEGRATED MANUFACTURING
3	14AEE833	INTRODUCTION TO BOUNDARY LAYER THEORY
4	14AEE834	SMART MATERIALS
5	14AEE835	INDUSTRIAL AERODYNAMICS

SL. NO.	BS. SC (BS)	ENGG. CORE (EC)	PROG. CORE (PC)	CORE. ELE (PE)	OPE. ELE (OE)	HUM (HU)	PROJ/INT /SEMINAR	
1	9.5	13.5						23
2	9.5	13.5				2		25
3	4	6	16					26
4	4		22					26
5			23	4				27
6			15	4	3	3		25
7			13	4	3	3		23
8			4	4			17	25
	27	33	93	16	06	08	17	200

NITTE MEENAKSHI INSTITUTE OF TECHNOLOGY

An Autonomous Institution,
Approved by UGC/AICTE/Govt. of Karnataka
Accredited by NBA (Tier-1), NAAC ('A' Grade)
and
Affiliated to Visvesvaraya Technological University,
Belagavi.

DEPARTMENT OF AERONAUTICAL ENGINEERING

PROCEEDINGS of BoS MEETING
05 June 2017

CHAIRMAN, BoS
Professor & Head,
Department of Aeronautical Engineering,
Nitte Meenakshi Institute of Technology,
Bangalore - 560 064.

PRINCIPAL
Principal
Nitte Meenakshi Institute of Technology
Govindapura, Yelahanka,
BANGALORE-560 064.

DEAN (ACADEMICS)

NITTE MEENAKSHI INSTITUTE OF TECHNOLOGY

A unit of Nitte Education Trust(R), Mangalore,
An Autonomous Institution
Approved by UGC/AICTE/Govt. of Karnataka; accredited by NBA (Tier-1)
and NAAC ('A' Grade) UGC,
Affiliated to Visvesvaraya Technological University, Belagavi
P.B.No.6429, Govindapura, Gollahalli, Yelahanka,
- Bengaluru-560 064. Karnataka. India.
Phone: 080-22167800
www.nmit.ac.in

DEPARTMENT OF AERONAUTICAL ENGINEERING

Board of Studies

Date: 05-06-2017

at

Office of HoD

Aeronautical Engineering NMIT

COMPREHENSIVE REPORT

of Proceedings & Curriculum Revision

for Academic Year 2017-18

Chairman, BoS
Dr. S Venkateswaran
Professor & Head,
Department of Aeronautical Engineering

J. Nagabhushanam

5/6/2017

NITTE MEENAKSHI INSTITUTE OF TECHNOLOGY

(An Autonomous Institution under Visvesvaraya Technological University)

Accredited By NAAC, New Delhi

Department of Aeronautical Engineering

Board of studies (Aeronautical Engineering)

Date: 05-06-2017

Office of HoD Aeronautical Engineering, NMIT

Agenda

1. Approval of scheme and syllabus for VII and VIII semesters of Aeronautical Engineering for students of 2014-2018 batch.
2. Approval of panel of B.O.E. with external examiners.
3. Any other matter with the permission of the chairman.

BOS PANEL FOR THE ACADEMIC YEAR 2017-2018:
BOARD OF STUDIES

Sl No.	Name	Designation	Organization	Position
1	Dr S Venkateswaran	Professor & Head	NMIT	Chairman
2	Dr J Nagabhushanam	Professor Emeritus	IISc	Member, VTU Nominee
3	Dr. A. ArokkiaSwamy	Professor & Head	DSCE	Expert Member
4	Dr. S.K. Maharana	Professor & Head	AIT	Expert Member
5	Mr. Sathisha Anantha	Program Manager	Capgemini	Industry Representative
6	M.A.Mahendra	Asst. Prof.	NMIT	Member
7	H.V Harish.	Asso. Prof.	NMIT	Member
8	P.K.Siddalingappa	Asst. Prof.	NMIT	Member
9	L.Vinod	Asst. Prof.	NMIT	Member
10	H.V. Srikanth	Asst. Prof.	NMIT	Member secretary

Dr. S Venkateswaran
Chairman, BoS
Department of Aeronautical Engineering

H.V. Srikanth
Member secretary, BoS
Department of Aeronautical Engineering

5/6/2017

NITTE MEENAKSHI INSTITUTE OF TECHNOLOGY

(An Autonomous Institution under Visvesvaraya Technological University)

Accredited By NAAC, New Delhi,

Department of Aeronautical Engineering

PROCEEDINGS OF THE BOARD OF STUDIES IN AERONAUTICAL ENGINEERING MEETING HELD ON 05-06-2017 IN THE DEPARTMENT OF AERONAUTICAL ENGINEERING -

MEMBERS PRESENT

Sl No.	Name	Designation	Organization	Position
1	Dr S Venkateswaran	Professor & Head	NMIT	Chairman
2	Dr J Nagabhushanam	Professor Emeritus	IISc	Member, VTU Nominee
3	Dr. A. Arokkia Swamy	Professor & Head	DSCE	Expert Member
4	Dr. S.K. Maharana	Professor & Head	AIT	Expert Member
5	Mr. SathishaAnantha	Program Manager	Capgemini	Industry Representative
6	M.A.Mahendra	Asst. Prof.	NMIT	Member
7	H.V Harish.	Asso. Prof.	NMIT	Member
8	P.K.Siddalingappa	Asst. Prof.	NMIT	Member
9	L.Vinod	Asst. Prof.	NMIT	Member
10	H.V. Srikanth	Asst. Prof.	NMIT	Member secretary

The chairman welcomed all the members of the board. The subjects listed in the agenda were deliberated and proceedings are as follows:

1. The revision of the scheme and syllabus of studies of VII and VIII Semester pertaining to 2014 to 2018 batch has been approved, as detailed below:

Sl No	SEM VII	Status
1.	Aircraft Structure-II	Syllabus Modified
2.	Aircraft Stability & Control	Syllabus Modified
3.	Entrepreneurship development & IPR	No Changes
4.	Gas Turbine Technology	No Changes
5.	Program Elective-D	
	(i) Introduction to Heat & Mass Transfer	Syllabus Modified

	(ii) Flight testing (iii)Theory of Plates & Shell (iv) Experimental Stress Analysis (v) Introduction to Cryogenics	No Changes No Changes No Changes No Change
6.	Open Elective-E	
	(i) Introduction to aircraft and its systems (ii)Introduction to Composite Materials (iii) Helicopter Theory (iv) Renewable energy resources (v) Introduction to multi-disciplinary design optimization	New Subject Introduced No Changes No Changes No Changes No Changes
7.	Design Modelling and Analysis Lab	No Changes
8.	Simulation Lab	Syllabus Modified
9.	Major Project Phase-I	No Changes

Sl No	SEM VIII	Status
1.	Flight Vehicle Design	No Change
2.	Program Elective-F (i) Computer Integrated Manufacturing (ii) Introduction to Computational fluid dynamics (iii)Introduction to Boundary Layer Theory (iv) Industrial Aerodynamics (v)Smart Materials	 No Changes New Subject Introduced No Changes No Changes No Changes
3.	Internship/Self-Study/ minor Project	No Changes
4.	Major Project-Final Submission and Evaluation	No Changes

The detail of the changes is indicated below:

- **AIRCRAFT STRUCTURES II**

  In unit 1 some topics was removed and replaced by unit 5.

  Unit 2 was split into unit 2 and unit 3 to maintain uniformity in each unit of the course.

- **AIRCRAFT STABILITY AND CONTROL**

  Ratio of units dealing with static stability and dynamics stability was changed to 60:40 from 50:50 to enable better understanding of the subject by the students.

- **INTRODUCTION TO HEAT AND MASS TRANSFER**

  In unit 4 the topic boiling condensation was replaced by mass transfer from unit 5.

- **INTRODUCTION TO AIRCRAFT AND ITS SYSTEM**

  New subject was introduced as open elective covering basics of aircraft and its system.

- **SIMULATION LAB**

  In part A experiment No. 3 & 4 (simulation of simple servo mechanism and feedback system in 't' &'s' domain) was replaced by simulation of landing run.

  In part B experiment No.1 (simulation of analog computation) was replaced by simulation of range of aircraft and experiment No. 4 (simulate runway) was replaced by point take off from runway.

- **INTRODUCTION COMPUTATIONAL FLUID DYNAMICS**

  New subject was introduced as program elective in 8th semester.

The approved syllabus has been enclosed herewith as Appendix – I

2. Scheme of studies for the semesters III to VI and VII and VIII,of 2014 – 2018 batch, as approved in the BoS meetings dated 12/05/16 and 05/06/17 respectively is enclosed in Appendix – II.

3. The Panel of Examiners for the academic year 2017 – 2018 has been approved. The details are given in Appendix – III.

4. The meeting ended with thanks to the Chair.

Srikanth H V
Member secretary,BoS
Aeronautical Engineering, NMIT

Dr. S Venkateswaran
Chairman,BoS
Aeronautical Engineering,NMIT

Sl No.	Name	Signature
1	Dr J Nagabhushanam Member, VTU Nominee	J. Nagabhushanam.
2	Dr. A. ArokkiaSwamy Expert Member	5/6/2017
3	Dr. S.K. Maharana Expert Member	
4	Mr.Sathisha Anantha Industry Representative	Sathisha
5	M.A.Mahendra Member	5/6/17
6	H.V Harish. Member	5/6/17
7	P.K.Siddalingappa Member	5/6/17
8	L.Vinod Member	5.6.17

Appendix –II

NITTE MEENAKSHI INSTITUTE OF TECHNOLOGY

(An Autonomous Institution, Affiliated to VTU, Belgaum and Accredited by NAAC, UGC)

DEPARTMENT OF AERONAUTICAL ENGINEERING

Approved Syllabus for III to VIII semester of B.E. Aeronautical Engineering course 2014-2018 Batch

In the BoS meeting held on 05/06/2017

J. Nagabhushanam

5/6/2017

Proposed Course Curriculum for Semester III to Semester VIII [2014-2018 BATCH]

SEMESTER: III

Sl No	Subject Code	Subject Name	Course Type	Teaching Dept.	Teaching Hours/week			Examination			Credits
					L#	T#	P#	CIE*	SEE**	Total	
1	14MAT31	ENGINEERING MATHEMATICS - III	BS	MAT	4	1	-	50	50	100	4
2	14AE32	ELEMENTS OF AERONAUTICS	PC	AE	4	-	-	50	50	100	3
3	14AE33	ENGINEERING THERMODYNAMICS	PC	AE/ME	3	2	-	50	50	100	4
4	14AE34	MECHANICS OF MATERIALS	PC	AE/ME	3	2	-	50	50	100	4
5	14AE35	METROLOGY AND MEASUREMENTS	PC	AE/ME	4	-	-	50	50	100	3
6	14AE36	FLUID MECHANICS	PC	AE/ME	3	2	-	50	50	100	4
7	14AEL37	FLUID MECHANICS LAB	PL	AE/ME	-	-	2	50	50	100	1
8	14AEL38	METROLOGY AND MEASUREMENTS LAB	PL	AE/ME	-	-	3	50	50	100	1.5
9	14AEL39	MATERIAL TESTING LAB	PL	AE/ME	-	-	3	50	50	100	1.5
							TOTAL	450	450	900	26

SEMESTER: IV

Sl No	Subject Code	Subject Name	Course Type	Teaching Dept.	Teaching Hours/week			Examination			Credits
					L#	T#	P#	CIE*	SEE**	Total	
1	14MAT41	ENGINEERING MATHEMATICS - IV	BS	MAT	3	2	-	50	50	100	4
2	14AE42	THEORY OF MACHINES	PC	AE/ME	4	-	-	50	50	100	3
3	14AE43	MATERIAL SCIENCE AND METALLURGY	PC	AE/ME	4	1	-	50	50	100	4
4	14AE44	COMPUTER AIDED MACHINE DRAWING	PC	AE/ME	3	-	3	50	50	100	4
5	14AE45	AIRCRAFT PROPULSION	PC	AE	3	2	-	50	50	100	4
6	14AE46	PRODUCTION TECHNOLOGY	PC	AE/ME	4	-	-	50	50	100	4
7	14AEL47	MACHINE SHOP LAB	PL	AE/ME	-	-	3	50	50	100	1.5
8	14AEL48	FOUNDARY AND FORGING LAB	PL	AE/ME	-	-	3	50	50	100	1.5
							TOTAL	400	400	800	26

SEMESTER: V

Sl No	Subject Code	Subject Name	Course Type	Teaching Dept.	Teaching Hours/week			Examination			Credits
					L#	T#	P#	CIE*	SEE**	Total	
1	14AE51	AIRCRAFT SYSTEMS AND INSTRUMENTS	PC	AE	4	-	-	50	50	100	4
2	14AE52	AIRCRAFT STRUCTURES-I	PC	AE	3	2	-	50	50	100	4
3	14AE53	AERODYNAMICS-I	PC	AE	3	2	-	50	50	100	4
4	14AE54	INTRODUCTION TO VIBRATION AND AEROELASTICITY	PC	AE/ME	3	2	-	50	50	100	4
5	14AE55	TURBOMACHINARY	PC	AE	3	2	-	50	50	100	4
6	14AEE56X	PROGRAM ELECTIVE-A	PE	AE	3	1	-	50	50	100	4
7	14AEL57	ENERGY CONVERSION LAB	PL	AE	-	-	3	50	50	100	1.5
8	14AEL58	AERODYNAMICS LAB	PL	AE	-	-	3	50	50	100	1.5
				TOTAL				400	400	800	27

SEMESTER: VI

Sl No	Subject Code	Subject Name	Course Type	Teaching Dept.	Teaching Hours/week			Examination			Credits
					L#	T#	P#	CIE*	SEE**	Total	
1	14AE61	AERODYNAMICS-II	PC	AE	3	2	-	50	50	100	4
2	14AE62	CONTROL ENGINEERING	PC	AE/ME	3	2	-	50	50	100	4
3	14AE63	AIRCRAFT PERFORMENCE	PC	AE	4	-		50	50	100	4
4	14AE64	MANAGEMENT FUNCTIONS AND ORGANISATIONAL BEHAVIOR	HU	AE/ME	3	-	-	50	50	100	3
5	14AEE65X	PROGRAM ELECTIVE-B	PE	AE	4	-	-	50	50	100	4
6	14AEO66X	OPEN ELECTIVE-C	OE	AE	3	-	-	50	50	100	3
7	14AEL67	AIRCRAFT PROPULSION LAB	PL	AE/ME	-	-	3	50	50	100	1.5
8	14AEL68	STRUCTURES LAB	PL	AE	-	-	3	50	50	100	1.5
9	14AEP69	SEMINAR	PP	AE	-	-	3	25#	-	25#	-
				TOTAL				400	400	800	25

#Marks carried to VIII sem.

SEMESTER: VII

Sl No	Subject Code	Subject Name	Course Type	Teaching Dept.	Teaching Hours/week			Examination			Credits
					L#	T#	P#	CIE*	SEE**	Total	
1	14AE71	AIRCRAFT STRUCTURES-II	PC	AE	3	2	-	50	50	100	4
2	14AE72	AIRCRAFT STABILITY AND CONTROL	PC	AE	3	1	-	50	50	100	3
3	14AE73	ENTREPRENEURSHIP DEVELOPMENT, MANAGEMENT & IPR	HU		4	-	-	50	50	100	3
4	14AE74	GAS TURBINE TECHNOLOGY	PC	AE	3	1	-	50	50	100	3
5	14AEE75X	PROGRAM ELECTIVE-D	PE	AE	4	-	-	50	50	100	4
6	14AEO76X	OPEN ELECTIVE-E	OE	AE	4	-	-	50	50	100	3
7	14AEL77	DESIGN, MODELLING AND ANALYSIS LAB	PL	AE	-	-	3	50	50	100	1.5
8	14AEL78	SIMULATION LAB	PL	AE	-	-	3	50	50	100	1.5
9	14AEP79	MAJOR PROJECT-PHASE 1	PP	AE	-	-	3	25#	-	25#	-
							TOTAL	400	400	800	23

#Marks carried to VIII sem

SEMESTER: VIII

Sl No	Subject Code	Subject Name	Course Type	Teaching Dept.	Teaching Hours/week			Examination			Credits
					L#	T#	P#	CIE*	SEE**	Total	
1	14AE81	INTERNSHIP/SELF STUDY/MINOR PROJECT$	PC		-	-	3	50	50	100	2
2	14AEE82	FLIGHT VEHICLE DESIGN	PE		4	-	-	50	50	100	4
3	14AEE83X	PROGRAM ELECTIVE -F			4	-	-	50	50	100	4
4	14AEP84	MAJOR PROJECT-FINAL SUMISSION & EVALUATION	PP		-	-	15	50+50 ^	100	200	15
							TOTAL	200	200	400	25

Marks carried from VI and VII sem to VIII sem.

$Internship of 4-6 weeks in an approved Industry/R&D organization/Reputed academic Institution during summer semester after IV or VI semester.

PROGRAM ELECTIVE-A

SL. NO.	SUBJECT CODE	SUBJECT NAME
1	14AEE561	AIRCRAFT MATERIALS
2	14AEE562	TOTAL QUALITY MANAGEMENT (TQM)
3	14AEE563	NON-DESTRUCTIVE TESTING
4	14AEE564	INTRODUCTION TO HELICOPTER AERODYNAMICS
5	14AEE565	INDUSRTIAL ENGINEERING AND MANAGEMENT

PROGRAM ELECTIVE-B

SL. NO.	SUBJECT CODE	
1	14AEE651	FINITE ELEMENT METHOD
2	14AEE652	AIRCRAFT COMMUNICATION SYSTEM
3	14AEE653	HYDRAULICS AND PNEUMATICS
4	14AEE654	FATIGUE AND FRACTURE MECHANICS
5	14AEE655	PROJECT MANAGEMENT

OPEN ELECTIVE-C

		SUBJECT NAME
1	14AEO661	WIND TUNNEL TECHNIQUES
2	14AEO662	AIRCRAFT MAINTENANCE, REPAIR AND OVERHAUL
3	14AEO663	AIRWORTHINESS AND CERTIFICATION
4	14AEO664	AIRCRAFT MATERIALS
5	14AEO665	ELEMENTS OF ROCKET PROPULSION

PROGRAM ELECTIVE-D

SL. NO.	SUBJECT CODE	SUBJECT NAME
1	14AEE751	INRODUCTION TO HEAT AND MASS TRANSFER
2	14AEE752	FLIGHT TESTING
3	14AEE753	THEORY OF PLATES AND SHELLS
4	14AEE754	EXPERIMENTAL STRESS ANALYSIS
5	14AEE755	INTRODUCTION TO CRYOGENICS

OPEN ELECTIVE -E

SL. NO.	SUBJECT CODE	SUBJECT NAME
1	14AEO761	INTRODUCTION TO AIRCRAFT AND ITS SYSTEMS
2	14AEO762	INTRODUCTION TO COMPOSITE MATERIALS
3	14AEO763	HELICOPTER THEORY
4	14AEO764	RENEWABLE ENERGY RESOURCES
5	14AEO765	INTRODUCTION TO MULTI DISCIPLINARY DESIGN OPTIMIZATION

PROGRAM ELECTIVE -F

SL. NO.	SUBJECT CODE	SUBJECT NAME
1	14AEE831	COMPUTATIONAL FLUID DYNAMICS
2	14AEE832	COMPUTER INTEGRATED MANUFACTURING
3	14AEE833	INTRODUCTION TO BOUNDARY LAYER THEORY
4	14AEE834	SMART MATERIALS
5	14AEE835	INDUSTRIAL AERODYNAMICS

SL. NO.	BS. SC (BS)	ENGG. CORE (EC)	PROG. CORE (PC)	CORE. ELE (PE)	OPE. ELE (OE)	HUM (HU)	PROJ/INT /SEMINAR	
1	9.5	13.5						23
2	9.5	13.5				2		25
3	4	6	16					26
4	4		22					26
5			23	4				27
6			15	4	3	3		25
7			13	4	3	3		23
8			4	4			17	25
	27	33	93	16	06	08	17	200

NITTE
EDUCATION TRUST

NITTE MEENAKSHI INSTITUTE OF TECHNOLOGY

(An Autonomous Institution under Visvesvaraya Technological University)

Department of Aeronautical Engineering

Proceedings of Board of Studies Meeting

Date: 30 June 2018

at

Office of HoD

Department of Aeronautical Engineering, NMIT

Chairman, BoS

Professor & Head,
Department of Aeronautical Engineering,
Nitte Meenakshi Institute of Technology,
Bangalore - 560 064.

Principal

PRINCIPAL
NITTE MEENAKSHI INSTITUTE OF TECHNOLOGY
P.B. 6429, GOVINDAPURA, GOLLAHALLI
YELAHANKA, BENGALURU - 560 064.

NITTE MEENAKSHI INSTITUTE OF TECHNOLOGY

(An Autonomous Institution under Visvesvaraya Technological University)

Department of Aeronautical Engineering

Board of Studies
Date: 30 June 2018
at
Office of HoD
Department of Aeronautical Engineering NMIT

KNOWLEDGE • CHARACTER • UNITY

COMPREHENSIVE REPORT

of Proceedings and Curriculum Revision

for Academic Year 2018-19

Chairman, BoS
Dr P. K. Dash
Professor & Head
Department of Aeronautical Engineering

NITTE MEENAKSHI INSTITUTE OF TECHNOLOGY

(An Autonomous Institution under Visvesvaraya Technological University)

Accredited By NAAC, New Delhi,

Department of Aeronautical Engineering

Board of studies meeting on 30-06-2018

Office of HoD Aeronautical Engineering, NMIT

Agenda

1. Approval of scheme and syllabus for III and IV semesters of Aeronautical Engineering for students of 2017-2021 batch.
2. Approval of revision made to syllabus of V and VI semesters Aeronautical Engineering for students of 2016-2020 batch.
3. Approval of panel of BoE with external examiners.

BoS Panel for the Academic year 2018-2019

Sl No.	Name	Designation	Organization	Position
1	Dr P. K. Dash	Prof. &HoD	NMIT, Bangalore	Chairman
2	Dr. S Gopalakrishnan	Professor	IISc, Bangalore	Member, VTU Nominee
3	Dr. S.K. Maharana	Prof. & HoD	AIT, Bangalore	Expert Member
4	Mr. Srinivasan Ramprasad	Staff Engineer	Honeywell Technology Solutions	Industry Representative
5	Mr. Harshith Somaiah BT	Analyst	Acumen Aviation Bangalore	Alumni
6	Mr. H V Srikanth	Asst.Prof.	NMIT, Bangalore	Member Secretary
7	Dr. S Venkateswaran	Professor	NMIT, Bangalore	Member
8	Dr. Kishore Brahma	Professor	NMIT, Bangalore	Member
9	Mr. N Vinayaka	Asso. Prof.	NMIT, Bangalore	Member
10	Mr. M A Mahendra	Asst.Prof.	NMIT, Bangalore	Member
11	Mr. L Vinod	Asst.Prof.	NMIT, Bangalore	Member
12	Mr. P K Siddalingappa	Asst.Prof.	NMIT, Bangalore	Member
13	Ms. Sonali Gupta	Asst.Prof.	NMIT, Bangalore	Member

Dr P. K. Dash
Chairman, BoS
Department of Aeronautical Engineering

H.V. Srikanth
Member secretary, BoS
Department of Aeronautical Engineering

NITTE MEENAKSHI INSTITUTE OF TECHNOLOGY

(An Autonomous Institution under Visvesvaraya Technological University)
Accredited By NAAC, New Delhi.

Department of Aeronautical Engineering

PROCEEDINGS OF THE BOARD OF STUDIES IN AERONAUTICAL ENGINEERING MEETING HELD ON 30-06-2018 IN THE DEPARTMENT OF AERONAUTICAL ENGINEERING

MEMBERS PRESENT

Sl No.	Name	Designation	Organization	Position
1	Dr. P. K. Dash	Prof. &HoD	NMIT, Bangalore	Chairman
2	Dr. S Gopalakrishnan	Professor	IISc, Bangalore	Member, VTU Nominee
3	Dr. S.K. Maharana	Prof. &HoD	AIT,Bangalore	Expert Member
4	Mr.SrinivasanRamprasad	Staff Engineer	Honeywell Technology Solutions	Industry Representative
5	Mr.HarshithSomaiah BT	Analyst	Acumen Aviation Bangalore	Alumni
6	Mr. H V Srikanth	Asst.Prof.	NMIT,Bangalore	Member Secretary
7	Dr. S Venkateswaran	Professor	NMIT,Bangalore	Member
8	Dr. Kishore Brahma	Professor	NMIT,Bangalore	Member
9	Mr. N Vinayaka	Asso. Prof.	NMIT,Bangalore	Member
10	Mr. M A Mahendra	Asst.Prof.	NMIT,Bangalore	Member
11	Mr. L Vinod	Asst.Prof.	NMIT,Bangalore	Member
12	Mr. P K Siddalingappa	Asst.Prof.	NMIT,Bangalore	Member
13	Ms.Sonali Gupta	Asst.Prof.	NMIT,Bangalore	Member

The chairman welcomed all the members of the board. The subjects listed in the agenda were deliberated and proceedings are as follows:

1. The complete scheme for the batch 2017-2021 and syllabus of III and IV Semesters of 2017-2021 batch has been approved and is enclosed herewith as Appendix-I.
   The highlights of modifications made in scheme of batch 2017-2021 in comparison with scheme of 2016-2020 batch is as given below.

Highlights of modifications made for the curriculum for the batch 2017-2021 in comparison with curriculum of batch 2016-2020.

Semester-III		
Batch 2016-2020	**Batch 2017-2021**	**Remarks**
Elements of Aeronautics	Introduction to Aircraft Engineering & Design	Name and syllabus content has been modified.
Engineering Thermodynamics	Aero Engineering Thermodynamics	Name of the course has been changed
Mechanics of Materials	Solid mechanics	Name of the course has been changed
Metrology and Measurements	Metrology and Measurements	Shifted from program core subject to program elective
No Program elective-A	Program elective-A • Computer Integrated Aircraft Drawing • Introduction to Space Technology • Mechanical Measurements & Metrology • Airport planning & Maintenance • Environmental Science and Technology • Non-Conventional Energy Resources	Program elective-A has been introduced in semester-III
Semester-IV		
Material Science and Metallurgy	----	Subject has been removed from program core
Production Technology	Aircraft Materials & Manufacturing	Name and syllabus content has been modified.
Machine Shop Lab Foundary and Forging Lab	Manufacturing process Lab	Combined both the labs with modifications in syllabus
No program elective -B	Program elective –B • Airworthiness & Certification • Turbo machinery & Dynamics • Computer Integrated Manufacturing • Experimental Stress Analysis • Wind Tunnel Techniques • Design of Machine Elements	Program elective-B has been introduced in semester-IV

Semester-V		
Program elective-A • Aircraft Materials • Total Quality Management • Non-Destructive Testing • Introduction To Helicopter Aerodynamics • Industrial Engineering and Management	Program elective-C • Fuels and Combustion • Control Engineering • Non Destructive Testing • Industrial Aerodynamics • Industrial Engineering & Management • Aircraft Maintenance & Practice	• Control engineering has been shifted from 6th semester program core to 5th semester program elective. • Fuels and Combustion, Industrial Aerodynamics and Aircraft Maintenance & Practice have been introduced as program elective.
Semester-VI		
Gas turbine technology	Space Flight & Space Dynamics	Introduced Space Flight & Space Dynamics in place of Gas turbine technology
Control engineering	Advanced propulsion	Introduced Advanced propulsion in place of control engineering
	Computer Aided Aircraft Engineering Drawing & Analysis	Name of the lab has been modified and introduced in 6th semester instead of 7th semester.
Program elective-B • Finite Element Method • Aircraft Communication System • Hydraulics And Pneumatics • Fatigue And Fracture Mechanics • Project Management	Program elective-D • Optimization Techniques • Rockets & Missiles • Finite Element Method • Hypersonic Vehicle Design • Theory of Combustion • Aero Engine Design	New electives have been introduced as program elective-D in 6th semester
Open elective-C • Wind Tunnel Techniques • Aircraft Maintenance, Repair and Overhaul • Airworthiness And Certification • Aircraft Materials • Elements of Rocket Propulsion	Open elective-I • Mechanics of Flight • Aircraft Materials • Basics of Aerodynamics • Introduction to Aerospace propulsion • Rockets and Missiles	Mechanics of Flight, Basics of Aerodynamics, Introduction to Aerospace propulsion, Rockets and Missiles have been newly introduced as Open elective-I

2. The revision of syllabus of V and VI semesters Aeronautical Engineering for students of 2016-2020 batch has been revised and approved, as detailed below.

Sl No	SEM V	Status
1.	Aircraft Systems and Instruments	No Changes
2.	Aircraft Structures-I	Syllabus Modified
3.	Aerodynamics-I	No Changes
4.	Introduction to Vibration and Aeroelasticity	No Changes
5.	Turbomachinary	No Changes
8.	**Program Elective-A**	
	i. Aircraft Materials	No Changes
	ii. Total Quality Management	No Changes
	iii. Non-Destructive Testing	Syllabus Modified
	iv. Introduction to Helicopter Aerodynamics	No Changes
	v. Industrial Engineering and Management	No Changes
6.	Energy Conversion Lab	No Changes
7.	Aerodynamics Lab	No Changes
Sl No	**SEM VI**	**Status**
1.	Aerodynamics-II	No Changes
2.	Control Engineering	No Changes
3.	Aircraft Performance	No Changes
4.	Management Functions and Organisational Behavior	No Changes
5.	**Program Elective-B**	
	i. Finite Element Method	No Changes
	ii. Aircraft Communication System	No Changes
	iii. Hydraulics-and-pneumatics	No Changes
	iv. Fatigue And Fracture Mechanics	Syllabus Modified
	v. Project Management	No Changes
6.	**Open Elective-C**	
	i. Wind Tunnel Techniques	Syllabus Modified
	ii. Aircraft Maintenance, Repair and Overhaul	No Changes
	iii. Airworthiness and Certification	No Changes
	iv. Aircraft Materials	No Changes
	v. Elements of Rocket Propulsion	Syllabus Modified
7.	Aircraft Propulsion Lab	No Changes
8.	Structures Lab	No Changes
9.	Identification of Project (Phase-I)	No Changes

The approved scheme and syllabus of the batch 2016-2020 is enclosed herewith as Appendix-II.

3. The Panel of Examiners for the academic year 2018 – 2019 has been approved. The details are given in Appendix – III.
4. The meeting ended with thanks to the Chair.

30/6/18

Dr P. K. Dash
Chairman, BoS
Department of Aeronautical Engineering

H.V. Srikanth
Member secretary, BoS
Department of Aeronautical Engineering

Sl No.	Name	Position	Signature
1	Dr. S Gopalakrishnan	Member, VTU Nominee	
2	Dr. S.K. Maharana	Expert Member	
3	Mr. Srinivasan Ramprasad	Industry Representative	
4	Mr. Harshith Somaiah BT	Alumni	30/Jun/18
5	Dr. S Venkateswaran	Member	
6	Dr. Kishore Brahma	Member	
7	Mr. N Vinayaka	Member	
8	Mr. M A Mahendra	Member	
9	Mr. L Vinod	Member	
10	Mr. P K Siddalingappa	Member	
11	Ms. Sonali Gupta	Member	

Appendix-I

NITTE MEENAKSHI INSTITUTE OF TECHNOLOGY

(An Autonomous Institution under Visvesvaraya Technological University)

Accredited By NAAC, New Delhi,

Department of Aeronautical Engineering

KNOWLEDGE • CHARACTER • UNITY

Board of Studies
Date: 30 June 2018
at
Office of HoD
Department of Aeronautical Engineering, NMIT

The scheme and syllabus of III and IV Semesters of Aeronautical Engineering for students of 2017-2021

NITTE MEENAKSHI INSTITUTE OF TECHNOLOGY

(AN AUTONOMOUS INSTITUTION, ACCREDITED BY NBA (AICTE) NEW DELHI)

COURSE CONTENT, SCHEME OF TEACHING AND EXAMINATION, FOR 2017-2021 BATCH

Department of Aeronautical Engineering

Semester: III

Sl No	Subject Code	Subject Name	Course Type	Teaching Dept.	Teaching Hours/week			Examination			Credits
					L#	T#	P#	CIE*	SEE**	Total	
1	17MAT31	Engineering Mathematics –III	BS	MAT	3	2	-	50	50	100	4
2	17AE32	Introduction to Aircraft Engineering & Design	PC	AE	4	-	-	50	50	100	3
3	17AE33	Aero Engineering Thermodynamics	PC	AE	3	2	-	50	50	100	4
4	17AE34	Solid Mechanics	PC	AE	4	-	-	50	50	100	4
5	17AE35	Fluid mechanics	PC	AE	4	-	-	50	50	100	4
6	17AEE36X	Program Elective-A	PE	AE	4	-	-	50	50	100	3
7	17AEL37	Solid Mechanics Lab	PL	AE	1	-	2	50	50	100	2
8	17AEL38	Fluid Mechanics Lab	PL	AE	1	-	2	50	50	100	2
							Total	400	400	800	26

Semester: IV

Sl No	Subject Code	Subject Name	Course Type	Teaching Dept.	Teaching Hours/week			Examination			Credits
					L#	T#	P#	CIE*	SEE**	Total	
1	17MAT41	Engineering Mathematics –IV	BS	MAT	3	2	-	50	50	100	4
2	17AE42	Aerodynamics-I	PC	AE	4	-	-	50	50	100	4
3	17AE43	Aircraft Structures-I	PC	AE	3	2	-	50	50	100	4
4	17AE44	Theory of Machines	PC	AE	4	-	-	50	50	100	3
5	17AE45	Aircraft Materials & Manufacturing	PC	AE	4	-	-	50	50	100	4
6	17AEE46X	Program Elective-B	PE	AE	4	-	-	50	50	100	3
7	17AE47	Mechanical Measurements & Metrology lab	PL	AE	1	-	2	50	50	100	2
8	17AEL48	Manufacturing Process Lab	PL	AE	1	-	2	50	50	100	2
							Total	400	400	800	26

*Continuous Internal Evaluation ** Semester End Examination # L- Lecture, T- Tutorial, P- Practical

Semester: V

Sl No	Subject Code	Subject Name	Course Type	Teaching Dept.	Teaching Hours/week			Examination			Credits
					L#	T#	P#	CIE*	SEE**	Total	
1	17AE51	Aircraft Performance	PC	AE	4	-	-	50	50	100	4
2	17AE52	Aerodynamics-II	PC	AE	4	-	-	50	50	100	4
3	17AE53	Aircraft Structures-II	PC	AE	3	2	-	50	50	100	4
4	17AE54	Aircraft Propulsion	PC	AE	3	2	-	50	50	100	4
5	17AEH55	Management Functions & Organizational Behavior	HU	AE	4	-	-	50	50	100	4
6	17AEE56X	Program Elective- C	PE	AE	4	-	-	50	50	100	3
7	17AEL57	Propulsion Lab	PL	AE	1	-	2	50	50	100	2
8	17AEL58	Aerodynamics Lab	PL	AE	1	-	2	50	50	100	2
							Total	400	400	800	25

Semester: VI

Sl No	Subject Code	Subject Name	Course Type	Teaching Dept.	Teaching Hours/week			Examination			Credits
					L#	T#	P#	CIE*	SEE**	Total	
1	17AE61	Aircraft Stability & Control	PC	AE	4	-	-	50	50	100	4
2	17AE62	Advanced Propulsion	PC	AE	3	2	-	50	50	100	4
3	17AE63	Aircraft Systems & Instruments	PC	AE	4	-	-	50	50	100	3
4	17AE64	Space Flight & Space Dynamics	PC	AE	4	-	-	50	50	100	4
5	17AEE65X	Program Elective-D	PE	AE	4	-	-	50	50	100	3
6	17AEO66X	Open Elective - I	PE	AE	4	-	-	50	50	100	4
7	17AEL67	Computer Aided Aircraft Engineering Drawing & Analysis	PL	AE	1	-	2	50	50	100	2
8	17AEL68	Structures Lab	PL	AE	1		2	50	50	100	2
9	17AEP69	Identification of Project (Phase-I)	PP				4	-	-	-	-
							Total	450	450	900	24

*Continuous Internal Evaluation

** Semester End Examination

L- Lecture, T- Tutorial, P- Practical

Semester: VII

Sl No	Subject Code	Subject Name	Course Type	Teaching Dept.	Teaching Hours/week				Examination			Credits
					L#	T#	P#	S#	CIE*	SEE**	Total	
1	17AE71	Vibration & Aeroelasticity	PC	AE	3	2	-		50	50	100	4
2	17AE72	CFD in Aerospace Engineering	PC	AE	4	-	-		50	50	100	4
3	17AE73	Introduction to composite materials & structures	PC	AE	4	-	-		50	50	100	4
4	17AEH74	Entrepreneurship development & IPR	HU	AE	4	-	-		50	50	100	4
5	17AEE75X	Program Elective- E	PE	AE	4	-	-		50	50	100	3
6	17AEO76X	Open Electives- II	PE	AE	4	-	-		50	50	100	4
7	17AEL77	Aircraft Systems Laboratory	PL	AE	1	-	2		50	50	100	2
8	17AEL78	Simulation Laboratory	PL	AE	1	-	2		50	50	100	2
9	17AEI/S/P79	Internship/Self-study/Minor project	IN/SS//MP	AE	-	-	-	8	50	50	100	2
10	17AEP710	Project Evaluation (Phase-II)	PP	AE			2		50^	-	-	-
								TOTAL	500	500	1000	27

Semester: VIII

Sl No	Subject Code	Subject Name	Course Type	Teaching Dept.	Teaching Hours/week			Examination			Credits
					L#	T#	P#	CIE*	SEE**	Total	
1	17AE81	Aircraft Design & Analysis	PC	AE	4	-	-	50	50	100	4
2	17AEE82X	Program Elective-F	PE	AE	4	-	-	50	50	100	4
3	17AEP83	Project Work	PR	AE	-	-	28	50+50^	100	200	14
							TOTAL	200	200	400	22

*Continuous Internal Evaluation ** Semester End Examination # L- Lecture, T- Tutorial, P- Practical, S-Self Study

Semester-3

Program Elective- A

Sl. No.	Subject Code	Subject Name
1.	17AEE361	Computer Integrated Aircraft Drawing
2.	17AEE362	Introduction to Space Technology
3.	17AEE363	Mechanical Measurements & Metrology
4.	17AEE364	Airport planning & Management
5.	17AEE365	Environmental Science and Technology
6.	17AEE366	Non-Conventional Energy Resources

Semester-4

Program Elective- B

Sl. No.	Subject Code	Subject Name
1.	17AEE461	Airworthiness & Certification
2.	17AEE462	Turbo-machinery
3.	17AEE463	Computer Integrated Manufacturing
4.	17AEE464	Experimental Stress Analysis
5.	17AEE465	Wind Tunnel Techniques
6.	17AEE466	Design of Machine Elements

Semester-5

Program Elective -C

Sl. No.	Subject Code	Subject Name
1.	17AEE551	Fuels and Combustion
2.	17AEE552	Control Engineering
3.	17AEE553	Non Destructive Testing
4.	17AEE554	Industrial Aerodynamics
5.	17AEE555	Industrial Engineering & Management
6.	17AEE556	Aircraft Maintenance & Practice

Semester-6

Program Elective-D

Sl. No.	Subject Code	Subject Name
1.	17AEE651	Optimization Techniques
2.	17AEE652	Rockets & Missiles
3.	17AEE653	Finite Element Method
4.	17AEE654	Hypersonic Vehicle Design
5.	17AEE655	Theory of Combustion
6.	17AEE656	Aero Engine Design

Semester 7

Program Elective -E

Sl. No.	Subject Code	Subject Name
1.	17AEE661	Introduction to Heat and Mass transfer
2.	17AEE662	Fatigue and Fracture
3.	17AEE663	Theory of Plates and shells
4.	17AEE664	Launch Vehicle dynamics
5.	17AEE665	Advance Aero Dynamics
6.	17AEE666	Reliability Engineering

Semester 8

Program Elective- F

Sl. No.	Subject Code	Subject Name
1.	17AEE821	Design of Gas Turbine
2.	17AEE822	Missile Technology
3.	17AEE823	High Temperature Materials
4.	17AEE824	Avionics & Instrumentations
5.	17AEE825	Introduction to Smart & Nano Technology
6.	17AEE826	Helicopter Aerodynamics

Semester 6

Open elective-I

Sl. No.	Subject Code	Subject Name
1.	17AEO661	Mechanics of Flight
2.	17AEO662	Aircraft Materials
3.	17AEO663	Basics of Aerodynamics
4.	17AEO664	Introduction to Aerospace propulsion
5.	17AEO665	Rockets and Missiles

Semester 7

Open elective-II

Sl. No.	Subject Code	Subject Name
1.	17AEO761	Unmanned Aerial Vehicles and it's Applications
2.	17AEO762	Cryogenic Propulsion
3.	17AEO763	Flight Testing
4.	17AEO764	Guidance, Navigation and Control
5.	17AEO765	Ceramic Technology

APPENDIX-II

NITTE MEENAKSHI INSTITUTE OF TECHNOLOGY

(AN AUTONOMOUS INSTITUTION, ACCREDITED BY NBA (AICTE) NEW DELHI)

COURSE CONTENT, SCHEME OF TEACHING AND EXAMINATION, FOR 2016-2020 BATCH

Aeronautical Engineering

III- VIII SEMESTER

SEMESTER: III

Sl No	Subject Code	Subject Name	Course Type	Teaching Dept.	Teaching Hours/week			Examination			Credits
					L*	T*	P*	CIE*	SEE**	Total	
1	14MAT31	ENGINEERING MATHEMATICS - III	BS	MAT	4	1	-	50	50	100	4
2	14AE32	ELEMENTS OF AERONAUTICS	PC	AE	4	-	-	50	50	100	3
3	14AE33	ENGINEERING THERMODYNAMICS	PC	AE	4	1	-	50	50	100	4
4	14AE34	MECHANICS OF MATERIALS	PC	AE	4	1	-	50	50	100	4
5	14AE35	METROLOGY AND MEASUREMENTS	PC	AE	4	-	-	50	50	100	3
6	14AE36	FLUID MECHANICS	PC	AE	4	1	-	50	50	100	4
7	14AEL37	FLUID MECHANICS LAB	PL	AE	-	-	2	50	50	100	1
8	14AEL38	METROLOGY AND MEASUREMENTS LAB	PL	AE	-	-	3	50	50	100	1.5
9	14AEL39	MATERIAL TESTING LAB	PL	AE	-	-	3	50	50	100	1.5
							TOTAL	450	450	900	26

SEMESTER: IV

Sl No	Subject Code	Subject Name	Course Type	Teaching Dept.	Teaching Hours/week			Examination			Credits
					L#	T#	P#	CIE*	SEE**	Total	
1	14MAT41	ENGINEERING MATHEMATICS - IV	BS	MAT	4	1	-	50	50	100	4
2	14AE42	THEORY OF MACHINES	PC	AE	4	1	-	50	50	100	3
3	14AE43	MATERIAL SCIENCE AND METALLURGY	PC	AE	4	1	-	50	50	100	4
4	14AE44	COMPUTER AIDED MACHINE DRAWING	PC	AE	2	-	4	50	50	100	4
5	14AE45	AIRCRAFT PROPULSION	PC	AE	4	1	-	50	50	100	4
6	14AE46	PRODUCTION TECHNOLOGY	PC	AE	4	-	-	50	50	100	4
7	14AEL47	MACHINE SHOP LAB	PL	AE	-	-	3	50	50	100	1.5
8	14AEL48	FOUNDARY AND FORGING LAB	PL	AE	-	-	3	50	50	100	1.5
				TOTAL				400	400	800	26

SEMESTER: V

Sl No	Subject Code	Subject Name	Course Type	Teaching Dept.	Teaching Hours/week			Examination			Credits
					L#	T#	P#	CIE*	SEE**	Total	
1	14AE51	AIRCRAFT SYSTEMS AND INSTRUMENTS	PC	AE	4	-	-	50	50	100	4
2	14AE52	AIRCRAFT STRUCTURES-I	PC	AE	4	1	-	50	50	100	4
3	14AE53	AERODYNAMICS-I	PC	AE	4	1	-	50	50	100	4
4	14AE54	INTRODUCTION TO VIBRATION AND AEROELASTICITY	PC	AE	4	1	-	50	50	100	4
5	14AE55	TURBOMACHINARY	PC	AE	4	1	-	50	50	100	4
6	14AEE56X	PROGRAM ELECTIVE-A	PE	AE	4	-	-	50	50	100	4
7	14AEL57	ENERGY CONVERSION LAB	PL	AE	-	-	3	50	50	100	1.5
8	14AEL58	AERODYNAMICS LAB	PL	AE	-	-	3	50	50	100	1.5
				TOTAL				400	400	800	27

SEMESTER: VI

Sl No	Subject Code	Subject Name	Course Type	Teaching Dept.	Teaching Hours/week			Examination			Credits
					L#	T#	P#	CIE*	SEE**	Total	
1	14AE61	AERODYNAMICS-II	PC	AE	4	1	-	50	50	100	4
2	14AE62	CONTROL ENGINEERING	PC	AE	4	1	-	50	50	100	4
3	14AE63	AIRCRAFT PERFORMENCE	PC	AE	4	-		50	50	100	4
4	14AE64	MANAGEMENT FUNCTIONS AND ORGANISATIONAL BEHAVIOR	HU	AE	4	-	-	50	50	100	3
5	14AEE65X	PROGRAM ELECTIVE-B	PE	AE	4	-	-	50	50	100	4
6	14AEO66X	OPEN ELECTIVE-C	OE	AE	4	-	-	50	50	100	3
7	14AEL67	AIRCRAFT PROPULSION LAB	PL	AE	-	-	3	50	50	100	1.5
8	14AEL68	STRUCTURES LAB	PL	AE	-	-	3	50	50	100	1.5
9	14AEP69	IDENTIFICATION OF PROJECT (PHASE-I)	PP	AE	-	-	4	-	-	-	-
							TOTAL	400	400	800	25

@**Marks carried to VIII sem.**

SEMESTER: VII

Sl No	Subject Code	Subject Name	Course Type	Teaching Dept.	Teaching Hours/week			Examination			Credits
					L#	T#	P#	CIE*	SEE**	Total	
1	14AE71	AIRCRAFT STRUCTURES-II	PC	AE	4	1	-	50	50	100	4
2	14AE72	AIRCRAFT STABILITY AND CONTROL	PC	AE	4	1	-	50	50	100	3
3	14AE73	ENTREPRENEURSHIP DEVELOPMENT, MANAGEMENT & IPR	HU		4	-	-	50	50	100	3
4	14AE74	GAS TURBINE TECHNOLOGY	PC	AE	4	-	-	50	50	100	3
5	14AEE75X	PROGRAM ELECTIVE-D	PE	AE	4	-	-	50	50	100	4
6	14AEO76X	OPEN ELECTIVE-E	OE	AE	4	-	-	50	50	100	3
7	14AEL77	DESIGN, MODELLING AND ANALYSIS LAB	PL	AE	-	-	3	50	50	100	1.5
8	14AEL78	SIMULATION LAB	PL	AE	-	-	3	50	50	100	1.5
9	14AEP791	INTERNSHIP/MINIPROJET	PP	AE	-	-	3	50	50	100	2
10	14AEP792	PROJECT PRELIMANARIES (PHASE-II)	PP	AE	-	-	2	50^	-	-	-
							TOTAL	400	400	800	25

SEMESTER: VIII

Sl No	Subject Code	Subject Name	Course Type	Teaching Dept.	Teaching Hours/week			Examination			Credits
					L#	T#	P#	CIE*	SEE**	Total	
1	14AE81	FLIGHT VEHICLE DESIGN	PC		4	-	-	50	50	100	4
2	14AE82	PROGRAM ELECTIVE -F	PE		4	-	-	50	50	100	4
3	14AEP83	MAJOR PROJECT-FINAL SUMISSION & EVALUATION			-	-	26	50+50^	100	200	15
							TOTAL	200	200	400	23

^Marks carried from VI and VII sem to VIII sem.

$Internship of 4-6 weeks in an approved Industry/R&D organization/Reputed academic Institution during summer semester after IV or VI semester.

PROGRAM ELECTIVE-A

SL. NO.	SUBJECT CODE	SUBJECT NAME
1	14AEE561	AIRCRAFT MATERIALS
2	14AEE562	TOTAL QUALITY MANAGEMENT
3	14AEE563	NON-DESTRUCTIVE TESTING
4	14AEE564	INTRODUCTION TO HELICOPTER AERODYNAMICS
5	14AEE565	INDUSTRIAL ENGINEERING AND MANAGEMENT

PROGRAM ELECTIVE-B

SL. NO.	SUBJECT CODE	
1	14AEE651	FINITE ELEMENT METHOD
2	14AEE652	AIRCRAFT COMMUNICATION SYSTEM
3	14AEE653	HYDRAULICS AND PNEUMATICS
4	14AEE654	FATIGUE AND FRACTURE MECHANICS
5	14AEE655	PROJECT MANAGEMENT

OPEN ELECTIVE-C

		SUBJECT NAME
1	14AEO661	WIND TUNNEL TECHNIQUES
2	14AEO662	AIRCRAFT MAINTENANCE, REPAIR AND OVERHAUL
3	14AEO663	AIRWORTHINESS AND CERTIFICATION
4	14AEO664	AIRCRAFT MATERIALS
5	14AEO665	ELEMENTS OF ROCKET PROPULSION

PROGRAM ELECTIVE-D

SL. NO.	SUBJECT CODE	SUBJECT NAME
1	14AEE751	INRODUCTION TO HEAT AND MASS TRANSFER
2	14AEE752	FLIGHT TESTING
3	14AEE753	THEORY OF PLATES AND SHELLS
4	14AEE754	EXPERIMENTAL STRESS ANALYSIS
5	14AEE755	INTRODUCTION TO CRYOGENICS

OPEN ELECTIVE -E

SL. NO.	SUBJECT CODE	SUBJECT NAME
1	14AEO761	INTRODUCTION TO AIRCRAFT AND ITS SYSTEMS
2	14AEO762	INTRODUCTION TO COMPOSITE MATERIALS
3	14AEO763	HELICOPTER THEORY
4	14AEO764	RENEWABLE ENERGY RESOURCES
5	14AEO765	INTRODUCTION TO MULTI DISCIPLINARY DESIGN OPTIMIZATION

PROGRAM ELECTIVE -F

SL. NO.	SUBJECT CODE	SUBJECT NAME
1	14AEE821	COMPUTATIONAL FLUID DYNAMICS
2	14AEE822	COMPUTER INTEGRATED MANUFACTURING
3	14AEE823	INTRODUCTION TO BOUNDARY LAYER THEORY
4	14AEE824	SMART MATERIALS
5	14AEE825	INDUSTRIAL AERODYNAMICS