

**Dr.Ambedkar Institute of Technology, Bengaluru-560056**  
**Outcome Based Education(OBE) and Choice Based Credit System(CBCS)(AsperNEP2020)**  
**B.E. AERONAUTICAL ENGINEERING**  
**Tentative Scheme of Teaching and Examination effective from the Academic Year 2021-22**

<b>III Semester</b>														
Sl. No.	Course Category	Course Code	CourseTitle	Teaching Department (TD)/ Paper setting Board(PSB)	TeachingHrs/ Week					Examination				Credits
					L	T	P	S	Total	Duratio n (Hrs)	CIE Mar ks	SEE Mar ks	Tot alM arks	
1	BSC	21MAT301AE	Transforms & Boundary Value Problems	Mathematics						03	50	50	100	3
2	IPCC	21AET302	Mechanics of Materials (+Material Testing Lab)	AE	3	0	2	0	05	03	50	50	100	4
3	IPCC	21AET303	Mechanics of Fluids (+ Fluid Mechanics Lab)	AE	3	0	2	0	05	03	50	50	100	4
4	PCC	21AET304	Elements of Aeronautics	AE	3	0	0	0	03	03	50	50	100	3
5	PCC	21AEL305	Computer Aided Aircraft Drawing	AE	0	0	2	0	02	03	50	50	100	1
6	UHV	21HST306	Social Connect and Responsibility	Any Department	0	0	1	0	01	01	50	50	100	1
7	HSSC	21HST3S07	Samskrutika Kannada	HSS	1	0	0	1	02	01	50	50	100	1
		21HST3B07	Balake Kannada											
		OR												
		21HST307	Constitution of India & Professional Ethics(CIP)											
8	AEC	21AET308X	Ability Enhancement Course – III	AE	If offered as Theory Course				01	01	50	50	100	1
					1	0	0	0						
					If offered as Lab. Course									
0	0	2	0											
9	HSSC	21HSN309	Professional skills	HSS	1	0	1	0		02	50	---	PP/NP	0
										<b>Total</b>	<b>400</b>	<b>400</b>	<b>800</b>	<b>18</b>

10	Scheduled activities for III to VIII semesters	21HSNS803	National Service Scheme (NSS)	NSS	All students have to register for any one of the courses namely National Service Scheme, Physical Education(PE)(Sports and Athletics), and Yoga with the concerned coordinator of the course during the first week of III semester. The activities shall be carried out between III semesters to VIII semester (for 5 semesters). SEE in the above courses shall be conducted during VIII semester examinations and the accumulated CIE marks shall be added to the SEE marks. Success full completion of the registered course is mandatory for the award of the degree. The events shall be appropriately scheduled by the colleges and the same shall be reflected in the calendar prepared for the NSS, PE, and Yoga activities.									
		21HSN803	Physical Education(PE) (Sports and Athletics)	PE										
		21HSN803	Yoga	Yoga										

**Course prescribed to lateral entry Diploma holders admitted to III semester B.E. programs**

11	21MAD310	Additional Mathematics-I	Maths	02	02	--	--	--	50	---	50	PP/NP
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**Note:** **BSC:** Basic Science Course, **IPCC:** Integrated Professional Core Course, **PCC:** Professional Core Course, **INT**–Internship, **HSSC:** Humanity and Social Science Courses,

**AEC**–Ability Enhancement Courses .**UHV:** Universal Human Value Course.

**L**–Lecture, **T**–Tutorial, **P**-Practical/Drawing, **S**–Self Study Component, **CIE:** Continuous Internal Evaluation, **SEE:** Semester End Examination.

**TD**-Teaching Department, **PSB:** Paper Setting department.

21HST307/407 Samskrutika Kannada is for students who speak ,read and write Kannada/Balake Kannada is for non-Kannada speaking, reading, and writing students.

**Integrated Professional Core Course (IPCC):** Refers to Professional Theory Core Course Integrated with practical of the same course. Credit for IPCC can be 04 and its Teaching–Learning hours (L:T:P) can be considered as (3:0:2)or(2:2:2).The theory part of the IPCC shall be evaluated both by CIE and SEE. The practical part shall be evaluated by only CIE (no SEE). However, questions from the practical part of IPCC shall be Included in these question paper.

**21XXI413 Inter/Intra Institutional Internship:** All the students admitted to engineering programs under the lateral entry category shall have to undergo a mandatory **21XXI413 Inter/Intra Institutional Internship of 03 weeks** during the intervening period of III and IV semesters. The internship shall be slated for CIE only and will not have SEE. The letter grade earned through CIE shall be included in the IV semester grade card. The internship shall be considered as a head of passing and shall be considered for vertical progression and for the award of degree. Those, who do not take up /complete the internship shall be declared fail and shall have to complete during subsequently after satisfying the internship requirements. The faculty coordinator or mentor shall monitor the students 'internship progress and interact with them for the successful completion of the internship.

**Non–credit mandatory courses(NCMC):**

**(A) Additional Mathematics I and II:**

**(1)** These courses are prescribed for III and IV semesters respectively to lateral entry Diploma holders admitted to III semester of B.E./B.Tech., programs. They shall attend the classes during the respective semesters to complete all the formalities of the course and appear for the Continuous Internal Evaluation (CIE). In case, any

student fails to register for the said course/fails to secure the minimum 40 % of the prescribed CIE marks,he/she shall be deemed to have secured an F grade. In such a case, the student has to fulfill the course requirements during subsequent semester/s to earn the qualifying CIE marks. These courses are slated for CIE only and have no SEE.

(2) Additional Mathematics I and II shall not be considered for vertical progression as well as for the calculation of SGPA and CGPA, but completion of the courses shall be mandatory for the award of degree.

(3) Successful completion of the courses Additional Mathematics I and II shall be indicated as **NP/PP** in the grade card. Non-completion of the courses Additional Mathematics I and II shall be indicated as un satisfactory.

**(B)Placement Training:** These courses are prescribed for I and VI semesters respectively to the students of B.E. programs. They shall attend the classes during the respective semesters to complete all the formalities of the course and appear for the Continuous Internal Evaluation (CIE). In case, any student fails to register for the said course/fails to secure the minimum 40 % of the prescribed CIE marks, he/she shall be deemed to have secured an **NP (not pass)** grade. In such a case, the student has to fulfill the course requirements during subsequent semester/s to earn the qualifying CIE marks. These courses are slated for CIE only and have no SEE.

**National Service Scheme/Physical Education(Sport and Athletics)/Yoga:**

(1) Securing 40% or more in CIE, 35% or more marks in SEE and 40% or more in the sum total of CIE+ SEE leads to successful completion of the registered course.

(2) In case, students fail to secure 35% marks in SEE, they have to appear for SEE during the subsequent examinations conducted by the University.

(3) In case, any student fails to register for NSS, PE or Yoga/fails to secure the minimum 40 % of the prescribed CIE marks, he/she shall be deemed to have not completed the requirements of the course. In such a case, the student has to fulfill the course requirements during subsequent semester/s to earn the qualifying CIE marks.

(4) Successful completion of the course shall be indicated as satisfactory in the grade card. Non-completion of the course shall be indicated as Unsatisfactory.

(5) These courses shall not be considered for vertical progression as well as for the calculation of SGPA and CGPA, but completion of the courses shall be mandatory for the award of degree.

**Ability Enhancement Course–III**

<b>21AEL3081</b>	<b>Introduction to MATLAB</b>	<b>21AET3083</b>	<b>Civil Aviation Requirement</b>
<b>21AEL3082</b>	<b>UAV LAB</b>	<b>21AET3084</b>	<b>Development of Soft Skills for Engineers</b>

**Dr.Ambedkar Institute of Technology, Bengaluru-560056**  
**Outcome Based Education(OBE) and Choice Based Credit System (CBCS) (AsperP2020)**  
**B.E. AERONAUTICAL ENGINEERING**  
**Tentative Scheme of Teaching and Examination effective from the AcademicYear2021-22**

<b>IV Semester</b>														
Sl. No.	Course Category	Course Code	CourseTitle	Teaching Department (TD)/ Paper setting Board(PSB)	TeachingHrs/ Week					Examination				Credits
					L	T	P	S	Total	Durati on (Hrs)	CIE Mark s	SEE Mar ks	Total Mark s	
1	BSC	21MAT401AE	Numerical Methods & Applied Statistics	Mathematics	3	0	0	0	03	03	50	50	100	3
2	IPCC	21AET402	Aerothermodynamics (+ Energy Conversion Lab)	AE	3	0	2	0	05	03	50	50	100	4
3	IPCC	21AET403	Aircraft Structures (+ Aircraft structures lab)	AE	3	0	2	0	05	03	50	50	100	4
4	PCC	21AET404	Aerodynamics	AE	3	0	0	0	03	03	50	50	100	3
5	PCC	21AEL405	Aerodynamics Lab	AE	0	0	2	0	02	03	50	50	100	1
6	AEC	21XXT406	Biology for Engineers	CHE, PHY	2	0	0	0	02	02	50	50	100	2
7	HSSC	21HST4S07	Sanskrutika Kannada	HSS	1	0	0	0	02	01	50	50	100	1
		21HST4B07	Balake Kannada											
		OR												
		21HST407	Constitution of India, Professional Ethics(CIP)											
8	AEC	21AET408X	Ability Enhancement Course – IV	AE	If offered as Theory Course					01	50	50	100	1
					1	0	0							
					If offered as Lab. Course					02				
					0	0	2							

9	UHV	21HST409	Universal Human Values	Any Department					01	50	50	100	1
10	INT	21AEI410	Inter/Intra Institutional Internship	Evaluation by the appropriate authorities	Completed during the intervening period of II and III semesters by students admitted to first year of BE./B.Tech and during the intervening period of III and IV semesters by Lateral entry students admitted to III semester.				3	100	-	100	02
11	HSSC	21HSN411	Professional skills	HSS	1	0	1	0	02	50	--	PP/NP	0
<b>Total</b>										<b>550</b>	<b>450</b>	<b>1000</b>	<b>22</b>

**Course prescribed to lateral entry Diploma holders admitted to III semester B.E programs**

12	21MAD412	Additional Mathematics-I	Maths	02	02	--	--	--	50	---	50	PP/NP
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**Note:** BSC: Basic Science Course, IPCC: Integrated Professional Core Course, PCC: Professional Core Course, AEC–Ability Enhancement Courses **HSSC:** Humanity and Social Science Courses, UHV- Universal Human Value Courses.  
L–Lecture, T–Tutorial, P-Practical/Drawing, S–Self Study Component, CIE: Continuous Internal Evaluation, SEE: Semester End Examination.

21HST307/407 Samskrutika Kannada is for students who speak ,read and write Kannada and 21KBK37/47 Balake Kannada is for non-Kannada speaking, reading, and writing students.

**Integrated Professional Core Course (IPCC):** Refers to Professional Theory Core Course Integrated with Practical of the same course. Credit for IPCC can be 04 and its Teaching–Learning hours (L:T:P)can be considered as(3:0:2)or(2:2:2).The theory part of the IPCC shall be evaluated both by CIE and SEE. The practical part shall be evaluated by only CIE (no SEE). However, questions from the practical part of IPCC shall be included in the SEE question paper.

**Non–credit mandatory course(NCMC):**

**(A)Additional Mathematics –II:**

(1) Lateral entry Diploma holders admitted to III semester of B.E./B.Tech., shall attend the classes during the IV semester to complete all the formalities of the course and appear for the Continuous Internal Evaluation (CIE). In case, any student fails to register for the said course/fails to secure the minimum 40% of the prescribed CIE marks, he/she shall be deemed to have secured an F grade. In such a case, the student has to fulfill the course requirements during subsequent semester/s to earn the qualifying CIE marks. These courses are slated for CIE only and have no SEE.

(2) Additional Mathematics I and II shall not be considered for vertical progression as well as for the calculation of SGPA and CGPA, but completion of the courses shall be mandatory for the award of degree.

(3) Successful completion of the course Additional Mathematics-II shall be indicated as satisfactory in the grade card. Non-completion of the courses Additional Mathematics-II shall be indicated as Unsatisfactory.

**(B)Placement Training:** These courses are prescribed for I and VI semesters respectively to the students of all B.E. programs. They shall attend the classes during the respective semesters to complete all the formalities of the course and appear for the Continuous Internal Evaluation (CIE). In case, any student fails to register for the said course/fails to secure the minimum 40 % of the prescribed CIE marks,he/she shall be deemed to have secured an **NP(not pass)** grade. In such a case, the student has to fulfill the course requirements during subsequent semester/s to earn the qualifying CIE marks. These courses are slated for CIE only and have no SEE.

**Internship of 04 weeks during the intervening period of IV and V semesters; 21XXI413 Innovation/Entrepreneurship/Societal based Internship.**

(1) All the students shall have to undergo a mandatory internship of **04 weeks** during the intervening period of IV and V semesters.The internship shall be slated for CIE only and will not have SEE. The letter grade earned through CIE shall be included in the VI semester grade card. The internship shall be considered as a head of passing and shall be considered for vertical progression and for the award of degree.Those, who do not take up /complete the internship shall be considered under F (fail) grade and shall have to complete during subsequently after satisfying the internship requirements

(2) Innovation/ Entrepreneurship Internship shall be carried out at industry, State and Central Government /Non-government organizations (NGOs), micro, small and medium enterprises (MSME), Innovation centers, or Incubation centers. Innovation need not be a single major breakthrough; it can also be a series of small or incremental changes. Innovation of any kind can also happen outside of the business world.

Entrepreneurship internships offer a chance to gain hands-on experience in the world of entrepreneurship and helps to learn what it takes to run a small entrepreneurial business by performing intern duties with an established company. This experience can then be applied to future business endeavors. Start-ups and small companies are a preferred place to learn the business tack ticks or future entrepreneurs asearning how a smallbusiness operates will serve the intern well when he/she manages his/her own company. Entrepreneurship acts as a catalyst to open the minds tocreativity and innovation. Entrepreneurship internships can be from several sectors, including technology, small and medium-sized, and the service sector.

(3) **Societal or social internship:** Urbanization is increasing on a global scale; and yet, half the world’s population still resides in rural areas and is devoid of many things that urban population enjoys. The rural internship is a work-based activity in which students will have a chance to solve/reduce the problems of the rural placeforbetter living.

**Ability Enhancement Course–IV**

21AET4081	Python for Engineers	21AEL4083	DRONE Pilot Training
21AEL4082	CAD Modeling Lab	21AEL4084	Computer Aided Structural Analysis Lab

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**B.E. AERONAUTICAL ENGINEERING**  
**Tentative Scheme of Teaching and Examination effective from the Academic Year 2021-22**

V Semester														
Sl. No.	Course Category	Course Code	Course Title	Teaching Department (TD)/ Paper setting Board(PSB)	Teaching Hrs/ Week					Examination				Credits
					L	T	P	S	Total	Duration (Hrs)	CIE Marks	SEE Marks	Total Marks	
1	PCC	21AET501	Finite Element Method	AE	3	0	0	0	03	03	50	50	100	3
2	IPCC	21AET502	Aircraft performance (+L)	AE	3	0	2		05	03	50	50	100	4
3	PCC	21AET503	Aircraft Propulsion	AE	3	0	0	0	03	03	50	50	100	3
4	PCC	21AET504	Aircraft material and manufacturing	AE	3	0	0	0	03	03	50	50	100	3
5	PCC	21AEL505	Aircraft Propulsion Lab	AE	0	0	2		02	03	50	50	100	1
6	AEC	21AET506	Research Methodology & Intellectual property rights	TD: Any department PSB: As identified by the Institute	2	0	0		02	02	50	50	100	2
7	HSSC	21CV507	Environmental Studies	TD: Civil/Chemistry PSB: Civil Engg.	1	0	0		01	01	50	50	100	1
8	AEC	21AET508X	Ability enhancement course – V	Concerned Board	If offered as Theory courses					01	50	50	100	1
					1	0	0							
					If offered as Lab Courses									
					0	0	2			02				
9	HSSC	21HSN509	Aptitude and Verbal ability skills		1	0	1	0		02	50	--	PP/ NP	0
										Total	450	400	800	18

<b>Ability Enhancement Course-V</b>			
Code	Course title	Code	Course title
21AET5081	Measurement and metrology lab	21AEL5083	AI & ML for Aerospace Application
21AET5082	Aircraft Technical Publication Standard	21AET5084	Airworthiness and Certification
<p>Note: BSC: Basic Science Course, PCC: Professional Core Course, IPCC: Integrated Professional Core Course, AEC –Ability Enhancement Course INT – Internship, HSSC: Humanity and Social Science Courses.  L–Lecture, T –Tutorial, P-Practical/Drawing, S–Self Study Component, CIE: Continuous Internal Evaluation, SEE: Semester End Examination.</p>			
<p><b>Integrated Professional Core Course (IPCC):</b> refers to Professional Theory Core Course Integrated with Practical of the same course. Credit for IPCC can be 04 and its Teaching – Learning hours (L:T:P) can be considered as (3:0:2) or (2:2:2). The theory part of the IPCC shall be evaluated both by CIE and SEE. The practical part shall be evaluated by CIE only and there shall be no SEE.  For more details the regulation governing the Degree of Bachelor of Engineering/Technology (BE/B.Tech.) 2021-22 may be referred.</p>			



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**B.E. AERONAUTICAL ENGINEERING**  
**Tentative Scheme of Teaching and Examination effective from the Academic Year 2021-22**

<b>VI Semester</b>															
Sl. No.	Course Category	Course Code	Course Title	Teaching Department	Teaching Hrs/ Week					Examination				Credits	
					L	T	P	S	Total	Duration (Hrs)	CIE Marks	SEE Marks	Total Marks		
1	HSSC	21AET601	Aviation Management	Any department	3	0	0	0	03	03	50	50	100	3	
2	IPCC	21AET602	Computational fluid dynamics (+ CFD lab)	AE	3	0	2	0	5	03	50	50	100	4	
3	PCC	21AET603	Aircraft stability and control	AE	3	0	0	0	03	03	50	50	100	3	
4	PEC	21AETE604 X	Professional Elective course –I	AE	3	0	0	0	03	03	50	50	100	3	
5	OEC	21AETE605 X	Open Elective course- I	Concerned department	3	0	0	0	03	03	50	50	100	3	
6	PCC	21AEL606	Vibration Lab	AE	0	0	2	0	02	03	50	50	100	1	
7	MP	21AEM607	Mini Project	AE	Two contact hours/week for interaction between the faculty and students					----	100	---	100	2	
8	INT	21AEI608	Innovation/Entrepreneurship/ Societal internship	Completed during the intervening period of IV and V semesters.						----	100	----	100	3	
9	HSSC	21HSN609	Analytical and reasoning skills	Placement cell	2	0	0	-	02	---	50	--	PP/ NP	0	
<b>Total</b>												<b>550</b>	<b>300</b>	<b>800</b>	<b>22</b>

**Note:** HSSC: Humanity and Social Science Courses, IPCC: Integrated Professional Core Course, PCC: Professional Core Course, EC: Professional Elective Courses, OEC–Open Elective Course, MP–Mini Project, INT –Internship.  
 ure, T–Tutorial, P–Practical/Drawing, S–Self Study Component, CIE: Continuous Internal Evaluation, SEE: Semester End Examination.

**Integrated Professional Core Course (IPCC):** Refers to Professional Theory Core Course Integrated with Practical of the same course. Credit for IPCC can be 04 and its Teaching – Learning hours (L:T:P) can be considered as(3:0:2) or (2:2:2). The theory part of the IPCC shall be evaluated both by CIE and SEE. The practical part shall be evaluated by CIE only and there shall be no SEE. **For more details, there gelation governing the Degree of Bachelor of Engineering/Technology(BE/2021-22) may be referred.**

**Professional Elective Courses(PEC):**

A professional elective (PEC) course is intended to enhance the depth and breadth of educational experience in the Engineering and Technology curriculum. Multidisciplinary courses that are added supplement the latest trend and advanced technology in the selected stream of engineering. Each group will provide an option to select one course out of five courses. The minimum students strength for offering professional electives is 10. However, this conditional shall not be applicable to cases where the admission to the programme is less than 10.

**Open Elective Courses:**

Students belonging to a particular stream of Engineering and Technology are not entitled for the open electives offered by their parent Department. However, they can opt an elective offered by other Departments, provided they satisfy the prerequisite condition if any. Registration to open electives shall be documented under the guidance of the Program Coordinator/Advisor/Mentor.

Selection of an open elective shall **not be allowed** if,

- (i) The candidate has studied the same course during the previous semesters of the program.
- (ii) The syllabus content of open electives is similar to that of the Departmental core courses or professional electives.
- (iii) A similar course under any category, is prescribed in the higher semester of the program.

In case, any college is desirous of offering a course (not included in the Open Elective List of the University) from streams such as Law, Business(MBA), Medicine, Arts, Commerce, etc., can seek permission, at least one month before the commencement of the semester, from the University by submitting a copy of the syllabus along with the details of expertise available to teach the same in the college.

The minimum students' strength for offering open electives is 10. However, this conditional shall not be applicable to cases where the admission to The programme is less than 10.

**Mini-project work:** Mini Project is a laboratory-oriented course which will provide a platform to students to enhance the practical knowledge and skills by the development of small systems/applications.

Based on the ability/abilities of the student/s and recommendations of the mentor, a single discipline or a multidisciplinary Mini-project can be assigned to an individual student or to a group having not more than 4 students.

**CIE procedure for Mini-project:**

(i) **Single discipline:** The CIE marks shall be awarded by a committee consisting of the Head of the concerned Department and two faculty members of the Department, one of them being the Guide. The CIE marks awarded for the Mini-project work shall be based on the evaluation of project report, project presentation skill, and question and answer session in the ratio of 50:25:25. The marks awarded for the project report shall be the same for all the batch mates.

(ii) **Interdisciplinary:** Continuous Internal Evaluations shall be group-wise at the college level with the participation of all the guides of the project.

The CIE marks awarded for the Mini-project, shall be based on the evaluation of project report, project presentation skill, and question and answer session in the ratio 50:25:25. The marks awarded for the project report shall be the same for all the batch mates.

**No SEE component for Mini-Project.**

### VII semester Classwork and Research Internship / Industry Internship(21XXI802)

**Swapping Facility:**

- (1) Institutions can swap VII and VIII Semester Scheme of Teaching and Examinations to accommodate research internship/industry internship after the VI semester.
- (2) Credits earned for the courses of VII and VIII Semester Scheme of Teaching and Examinations shall be counted against the corresponding semesters whether VII or VIII semester is completed during the beginning of IV year or later part of IV year of the program.

**Elucidation:**

At the beginning of IV year of the programme i.e., after VI semester, VII semester classwork and VIII semester Research Internship /Industrial Internship shall be permitted to be operated simultaneously by the University so that students have ample opportunity for internship. In other words, a good percentage of the class shall attend VII semester classwork and a similar percentage of others shall attend to Research Internship or Industrial Internship.

Research/Industrial Internship shall be carried out at an Industry, NGO, MSME, Innovation centre, Incubation centre, Start-up, Centers of Excellence(CoE), Study Centre established in the parent institute and /or at reputed research organizations / institutes. The internship can also be rural internship.

The mandatory Research internship /Industry internship is for **24 weeks**. The internship shall be considered as a head of passing and shall be considered for the award of degree. Those, who do not take up/complete the internship shall be declared fail and shall have to complete during the subsequent Institute/University examination after satisfying the internship requirements.

**21XXI802 Research Internship/Industry Internship/Rural Internship:**

**Research internship:** A research internship is intended to offer the flavor of current research going on in the research field. It helps students get familiarized with the field and impart the skill required for carrying out research.

**Industry internship:** Is an extended period of work experience undertaken by students to supplement their degree for professional development. It also helps them learn to overcome unexpected obstacles and successfully navigate organizations, perspectives, and cultures. Dealing with contingencies helps students recognize, appreciate, and adapt to organizational realities by tempering their knowledge with practical constraints.

The faculty coordinator or mentor has to monitor the students ‘internship progress and interact with them to guide for the successful completion of the internship. The students are permitted to carry out the internship anywhere in India or abroad. University shall not be an annex in respect of internship.

Professional Elective Courses-I		Open Elective Courses-I	
Subject Code	Title	Subject Code	Title
21AETE6041	Theory of vibration	21AETE6051	Elements of Aeronautics
21AETE6042	Aircraft maintenance repair and overhaul	21AETE6052	Introduction to Space Technology
21AETE6043	Mechanism and Machine theory	21AETE6053	Aircraft Materials and Manufacturing Process

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**Tentative Scheme of Teaching and Examination(EffectivefromtheAcademicYear2021-22)**

**Swappable VII and VIII SEMESTER**

**VII Semester**

Sl. No.	Course Category	Course Code	CourseTitle	TeachingDe partment	TeachingHrs/ Week					Examination				Credits
					L	T	P	S	Total	Durat ion (Hrs)	CIE Mar ks	SEE Mar ks	Total Mark s	
1	PCC	21AET701	Avionic Systems and Instrumentation	AE	3	0	0	0	03	3	50	50	100	3
2	PCC	21AET702	Aircraft Design	AE	3	0	0	0	03	3	50	50	100	3
3	PEC	21AET703X	Professional elective Course-II	AE	3	0	0	0	03	3	50	50	100	3
4	PEC	21AETE704 X	Professional elective Course-III	AE	3	0	0	0	03	3	50	50	100	3
5	OEC	21AETE705 X	Open elective Course-II	Concerned department	3	0	0	0	03	3	50	50	100	3
6	Project	21AEP706	Project work	AE	Two contact hours/week for Interaction between the faculty and students.					3	100	100	200	10
<b>Total</b>											350	350	700	24

ProfessionalElectiveCourses-II		ProfessionalElectiveCourses-III		OpenElectiveCourses-II	
CourseCode	Title	CourseCode	Title	Course Code	Title
21AETE7031	Dynamic stability and stability Augumentation	21AETE7041	Helicopter Dynamics	21AETE7051	Fundamentals of Aerodynamics
21AETE7032	Aircraft safety and mangement	21AETE7042	Gas Turbine Technology	21AETE7052	Elements of Jet propulsion

<b>21AETE7033</b>	Flight Testing	<b>21AETE7043</b>	Unmanned Aerial Vehicle	<b>21AETE7052</b>	Basics Flight Mechanics
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VIII Semester														
Sl. No.	Course Category	Course Code	Course Title	Teaching Department	TeachingHrs/ Week					Examination				Credits
					L	T	P	S	Total	Duration (Hrs)	CIE Marks	SEE Marks	Total Marks	
1	Seminar	21AES801	Technical Seminar	AE	One contact hour/week for interaction between the faculty and students.					---	100	---	100	01
2	Internship	21AEI802	Research internship/ Industry Internship	AE	Two contact hours /week forinteraction between the facultyandstudents.					03 (Batch wise)	100	100	200	15
3	NCMC	21XX803	NationalServiceScheme(NSS)	NSS	Completed during the intervening period of III semester to VIII semester.					--	50	50	100	
		21XX803	Physical Education(PE) (Sports andAthletics)	PE										
		21XX803	Yoga	Yoga										
<b>Total</b>										<b>250</b>	<b>150</b>	<b>400</b>	<b>16</b>	

Note: PCC: Professional Core Course, PEC: Professional Elective Courses, OEC–Open Elective Course, AEC –Ability Enhancement Courses.

L –Lecture, T – Tutorial, P- Practical / Drawing, S – Self Study Component, CIE: Continuous Internal Evaluation, SEE: Semester End Examination.

Note: VII and VIII semesters of IV year of the programme

(1) Institutions can swap VII and VIII Semester Scheme of Teaching and Examinations to accommodate research internship/ industry internship after the VI semester.

(2) Credits earned for the courses of VII and VIII Semester Scheme of Teaching and Examinations shall be counted against the corresponding semesters whether VII or VIII semester is completed during the beginning of IV year or later part of IV year of the program.

**PROJECT WORK (21XXP706):** The objective of the Project work is

- (i) To encourage independent learning and the innovative attitude of the students.
- (ii) To develop interactive attitude, communication skills, organization, time management, and presentation skills.
- (iii) To impart flexibility and adaptability.
- (iv) To inspire team working.
- (v) To expand intellectual capacity, credibility, judgment and intuition.
- (vi) To adhere to punctuality, setting and meeting deadlines.
- (vii) To install responsibilities to oneself and others.
- (viii) To train students to present the topic of project work in a seminar without any fear, face the audience confidently, enhance communication skills, involve in group discussion to present and exchange ideas.

CIE procedure for Project Work:

(1) **Single discipline:** The CIE marks shall be awarded by a committee consisting of the Head of the concerned Department and two senior faculty members of the Department, one of whom shall be the Guide.

The CIE marks awarded for the project work, shall be based on the evaluation of project work Report, project presentation skill, and question and answer session in the ratio 50:25:25. The marks awarded for the project report shall be the same for all the batch mates.

(2) **Interdisciplinary:** Continuous Internal Evaluation shall be group-wise at the college level with the participation of all guides of the college. Participation of external guide/s, if any, is desirable. The CIE marks awarded for the project work, shall be based on the evaluation of project work Report, project presentation skill, and question and answer session in the ratio 50:25:25. The marks awarded for the project report shall be the same for all the batch mates.

SEE procedure for Project Work: SEE for project work will be conducted by the two examiners appointed by the University. The SEE marks awarded for the project work shall be based on the evaluation of project work Report, project presentation skill, and question and answer session in the ratio 50:25:25.

**TECHNICAL SEMINAR (21XXS801):** The objective of the seminar is to inculcate self-learning, present the seminar topic confidently, enhance communication skill, involve in group discussion for exchange of ideas. Each student, under the guidance of a Faculty, shall choose, preferably, a recent topic of his/her interest relevant to the programme of Specialization.

- (i) Carry out literature survey, systematically organize the content.
- (ii) Prepare the report with own sentences, avoiding a cut and paste act.
- (iii) Type the matter to acquaint with the use of Micro-soft equation and drawing tools or any such facilities.
- (iv) Present the seminar topic orally and/or through PowerPoint slides.
- (v) Answer the queries and involve in debate/discussion.
- (vi) Submit a typed report with a list of references.

The participants shall take part in the discussion to foster a friendly and stimulating environment in which the students are motivated to reach high standards and become self-confident.

Evaluation Procedure:

The CIE marks for the seminar shall be awarded (based on the relevance of the topic, presentation skill, participation in the question and answer

session, and quality of report) by the committee constituted for the purpose by the Head of the Department. The committee shall consist of three teachers from the department with the senior-most acting as the Chairman.

Marks distribution for CIE of the course:

Seminar Report:50 marks Presentation skill:25 marks

Question and Answer: 25 marks. ■No SEE component for Technical Seminar

Non – credit mandatory courses (NCMC):

National Service Scheme/Physical Education (Sport and Athletics)/ Yoga:

Securing 40% or more in CIE,35 % or more marks in SEE and 40 % or more in the sum total of CIE + SEE leads to successful completion of the registered course.

In case, students fail to secure 35 % marks in SEE, they have to appear for SEE during the subsequent examinations conducted by the University. (3)In case, any student fails to register for NSS, PE or Yoga/fails to secure the minimum 40 % of the prescribed CIE marks, he/she shall be deemed to have not completed the requirements of the course. In such a case, the student has to fulfill the course requirements during subsequently to earn the qualifying CIE marks subject to the maximum program period.

Successful completion of the course shall be indicated as pass (PP) in the grade card. Non-completion of the course (NP) shall be indicated as Unsatisfactory.

These course shall not be considered for vertical progression as well as for the calculation of SGPA and CGPA, but completion of the courses shall be mandatory for the award of degree.