KCG COLLEGE OF TECHNOLOGY(AUTONOMOUS)
REGULATIONS2023
B.E. AERONAUTICAL ENGINEERING
CHOICEBASEDCREDIT SYSTEM
CURRICULUMFORSEMESTERSITOVIII

SEMESTER–I

SL NO	COURSEC ODE	COURSETITLE	CATE GORY	L	T	P	TOTALCO NTACT PERIODS	CREDITS
				PERIODS PERWEEK				
	23IP101	InductionProgramme		-	-	-	-	-
THEORY								
1	23HS101	EssentialCommunication	HSMC	3	0	0	3	3
2	23MA101	MatricesandCalculus	BSC	3	0	0	3	3
3	23AD101	Programmingin Python	ESC	3	0	0	3	3
4	23HS102	Heritageof Tamils	HSMC	1	0	0	1	1
THEORYANDPRACTICALS								
5	23PH111	EngineeringPhysics	BSC	3	0	2	5	4
6	23CY111	EngineeringChemistry	BSC	3	0	2	5	4
PRACTICALS								
7	23AD121	PythonProgrammingLaboratory	ESC	0	0	4	4	2
8	23HS121	Communication SkillsLaboratory	HSMC	0	0	2	2	1
9	23HS122	GeneralClubs/TechnicalClubs/NCC/NSS/ExtensionActivities	HSMC	0	0	2	2	1*
TOTAL				16	0	12	28	21

SEMESTER–II

SL. NO	COURSE CODE	COURSETITLE	CATE GORY	L	T	P	TOTALCO NTACT PERIODS	CREDITS
THEORY								
1	23HS201/ 202	ProfessionalEnglish/Foreign Language	HSMC	3	0	0	3	3
2	23MA201	Vector calculus&ComplexFunctions	BSC	3	1	0	4	4
3	23PH207	AppliedPhysics	BSC	3	0	0	3	3
4	23AE201	Elements ofAeronauticalEngineering	PCC	3	0	0	3	3
5	23HS203	Tamils &Technology	HSMC	1	0	0	1	1
THEORYANDPRACTICALS								
6	23EE281	BasicElectricalandElectronicsEngineering	ESC	2	0	advanced 2	4	3
7	23ME211	EngineeringGraphics	ESC	3	0	2	5	4
PRACTICALS								
8	23ME221	EngineeringPracticesLaboratory	ESC	0	0	4	4	2
9	23AE221	AeroModellingLab	PCC	0	0	4	4	2
10	23ES291	SoftSkills	EEC	0	0	2	2	1*
TOTAL				18	1	14	33	25

SEMESTER –III

SL. NO	COURSE CODE	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
THEORY								
1	23MA302	Transforms and Partial Differential Equations	BSC	3	1	0	4	4
2	23AE301	Solid Mechanics	PCC	3	0	0	3	3
3	23HS301	Universal Human Values and Ethics	HSMC	3	0	0	3	3
THEORY AND PRACTICALS								
4	23ME312	Fluid Mechanics and Hydraulic Machinery	PCC	3	0	2	5	4
5	23AE311	Aero Engineering Thermodynamics	PCC	3	0	2	5	4
PRACTICALS								
6	23AE321	Strength of Materials Laboratory	PCC	0	0	4	4	2
7	23ES391	Presentation skills	EEC	0	0	2	2	1*
TOTAL				15	1	10	26	20

SEMESTER–IV

SL. NO	COURSE CODE	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
THEORY								
1	23MA403	Numerical And Statistical Methods	BSC	3	1	0	4	4
2	23AE401	Low-speed Aerodynamics	PCC	3	0	0	3	3
3	23AE402	Air Breathing Propulsion	PCC	3	0	0	3	3
4	23AE403	Aircraft Structures	PCC	3	0	0	3	3
5		Department Elective 1	DEC	3	0	0	3	3
6		Department Elective 2	DEC	3	0	0	3	3
PRACTICALS								
7	23AE421	Aerodynamics Laboratory	PCC	0	0	4	4	2
8	23AE422	Propulsion Laboratory	PCC	0	0	4	4	2
9	23ES491	Aptitude and Logical Reasoning 1	EEC	0	0	2	2	1*
10	23AE423	Mini Project	EEC	0	0	2	2	1
TOTAL				18	1	12	31	24

SEMESTER–V

SL. NO	COURSE CODE	COURSETITLE	CATE GORY	PERIODS PERWEEK			TOTALCO NTACT PERIODS	CREDITS
				L	T	P		
THEORY								
1	23RE501	ResearchMethodologyand Intellectual Property Rights	ESC	2	0	0	2	2
2	23AE501	AdvancedAerodynamics	PCC	3	0	0	3	3
3	23AE502	AdvancedAircraftStructures	PCC	3	0	0	3	3
4		DepartmentElective3	DEC	3	0	0	3	3
5		DepartmentElective4	DEC	3	0	0	3	3
6		Non-DepartmentElective - 1 (EmergingTechnology)	NEC	3	0	0	3	3
PRACTICALS								
7	23AE521	AircraftStructuresLaboratory	PCC	0	0	4	4	2
8	23AE522	ComputationalAnalysisLabor atory	PCC	0	0	2	2	1
9	23ES591	Aptitudeand Logical Reasoning2	EEC	0	0	2	2	1*
TOTAL				17	0	8	25	20

SEMESTER–VI

SL. NO	COURSE CODE	COURSETITLE	CATE GORY	PERIODS PERWEEK			TOTALCO NTACT PERIODS	CREDITS
				L	T	P		
THEORY								
1		DepartmentElective5	DEC	3	0	0	3	3
2		DepartmentElective6	DEC	3	0	0	3	3
3		Non-DepartmentElective - 2(Management / SafetyCourses)	NEC	3	0	0	3	3
THEORY& PRACTICALS								
4	23CE611	EnvironmentalSciences andEngineering	ESC	3	0	2	5	4
5	23AE611	FlightDynamics& Simulation	PCC	3	0	2	5	4
6	23AE612	Avionics	PCC	3	0	2	5	4
PRACTICALS								
7	23AE621	ProjectWork-Phase1	EEC	0	0	4	4	2
8	23AE622	TechnicalTraining	EEC	0	0	2	2	1
9	23AE623	TechnicalSeminar–1	ESC	0	0	2	2	1
TOTAL				18	0	14	32	25

SEMESTER–VII

SL. NO	COURSE CODE	COURSETITLE	CATE GORY	PERIODS PERWEEK			TOTALCO NTACT PERIODS	CREDITS
				L	T	P		
THEORY								
1		Non-DepartmentElective3(ManagementandSafetyCourses)	NEC	3	0	0	3	3
2	23AE701	UAVSystems	PCC	3	0	0	3	3
3	23AE702	FiniteElementMethod	PCC	3	0	0	3	3
4	23AE703	Comprehension	EEC	2	0	0	2	2
5	23AE704	TotalQualityand ContinuingAirworthiness	PCC	3	0	0	3	3
THEORY& PRACTICALS								
6	23AE711	Composite Materialsand Structures	PCC	3	0	2	5	4
PRACTICALS								
7	23AE721	AircraftDesignProject	EEC	0	0	4	4	2
8	23AE722	ProjectWork-Phase2	EEC	0	0	6	6	3
9	23AE723	TechnicalSeminar–2	ESC	0	0	4	4	2
TOTAL				17	0	16	33	25

SEMESTER –VIII

SL. NO	COURSE CODE	COURSETITLE	CATE GORY	PERIODS PERWEEK			TOTALCO NTACT PERIODS	CREDITS
				L	T	P		
PRACTICALS								
1	23AE821/ 23AE822	Internship/Capstone Project		0	0	20	20	10
TOTAL				0	0	20	20	10

TOTALCREDITS:170

PROFESSIONALELECTIVECOURSES

LISTOFIDENTIFIEDVERTICALS	
1	AvionicsandDroneTechnology
2	ComputationalEngineering
3	Aerodynamics andPropulsion
4	AerospaceStructures
5	AircraftMaintenanceandPractices
6	DiversifiedCourses

VERTICAL1:AVIONICSANDDRONETECHNOLOGY

SL. NO	COURSE CODE	COURSETITLE	CATE GORY	PERIODS PERWEEK			TOTALCO NTACT PERIODS	CREDITS
				L	T	P		
1	23AE031	Dronerulesand Aviation regulations	DEC	2	0	2	4	3
2	23AE032	ControlEngineering	DEC	3	0	0	3	3
3	23AE033	GuidanceandControl	DEC	3	0	0	3	3
4	23AE034	Navigationand Communication System	DEC	3	0	0	3	3
5	23AE035	DesignofUAVsystems	DEC	3	0	0	3	3
6	23AE036	Aerodynamics ofDrones	DEC	3	0	0	3	3
7	23AE037	DroneAvionics	DEC	3	0	0	3	3
8	23AE038	DigitalImageProcessing inDrone	DEC	3	0	0	3	3

VERTICAL2:COMPUTATIONALENGINEERING

SL. NO	COURSE CODE	COURSETITLE	CATE GORY	PERIODS PERWEEK			TOTALCO NTACT PERIODS	CREDITS
				L	T	P		
1	23AE039	NumericalMethodsinFluidDy namics	DEC	3	0	0	3	3
2	23AE040	ComputationalHeatTransfer	DEC	3	0	0	3	3
3	23AE041	BasicsofComputationalFluid Dynamics	DEC	3	0	0	3	3
4	23AE042	ComputerAidedDesignandA nalysis	DEC	3	0	0	3	3
5	23AE043	GridGenerationTechniques	DEC	3	0	0	3	3
6	23ME033	ComputerIntegratedManufac turing	DEC	3	0	0	3	3
7	23AE045	BoundaryLayerTheory	DEC	3	0	0	3	3
8	23AE046	ProgrammingToolsinAerospac eEngineering	DEC	3	0	0	3	3

VERTICAL3:AERODYNAMICSANDPROPULSION

SL. NO	COURSE CODE	COURSETITLE	CATE GORY	PERIODS PERWEEK			TOTALCO NTACT PERIODS	CREDITS
				L	T	P		
1	23AE047	ExperimentalAerodynamics	DEC	3	0	0	3	3
2	23AE048	High SpeedAerodynamics	DEC	3	0	0	3	3
3	23AE049	IndustrialAerodynamics	DEC	3	0	0	3	3
4	23AE050	RocketPropulsion	DEC	3	0	0	3	3
5	23AE051	AdvancedPropulsionSystems	DEC	3	0	0	3	3
6	23AE052	HypersonicAerodynamics	DEC	3	0	0	3	3
7	23AE053	WindtunnelTechniques	DEC	3	0	0	3	3
8	23AE054	HelicopterAerodynamics	DEC	3	0	0	3	3

VERTICAL4: AEROSPACE STRUCTURES

SL. NO	COURSE CODE	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1	23AE055	Fatigue and Fracture Mechanics	DEC	3	0	0	3	3
2	23AE056	Experimental Stress Analysis	DEC	3	0	0	3	3
3	23AE057	Vibrations and Aeroelasticity	DEC	3	0	0	3	3
4	23ME031	Additive Manufacturing	DEC	3	0	0	3	3
5	23ME036	Non-Destructive Testing and Evaluation	DEC	3	0	0	3	3
6	23AE060	Aerospace Materials	DEC	3	0	0	3	3
7	23AE061	Theory of Elasticity	DEC	3	0	0	3	3
8	23AE062	Spacecraft Structures	DEC	3	0	0	3	3

VERTICAL5: AIRCRAFT MAINTENANCE AND PRACTICES

SL. NO	COURSE CODE	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1	23AE063	Airframe Maintenance and Repair	DEC	3	0	0	3	3
2	23AE064	Aircraft General Engineering and Maintenance Practices	DEC	3	0	0	3	3
3	23AE065	Civil Aviation Regulations	DEC	3	0	0	3	3
4	23AE066	Aircraft Engine Maintenance and Repair	DEC	3	0	0	3	3
5	23AE067	Air Traffic Control	DEC	3	0	0	3	3
6	23AE068	Airport Management	DEC	3	0	0	3	3
7	23AE069	Aircraft Safety & Operations	DEC	3	0	0	3	3
8	23AE070	Crisis Management in Aircraft Industry	DEC	3	0	0	3	3

VERTICAL6: DIVERSIFIED COURSES

SL. NO	COURSE CODE	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1	23AE071	Manufacturing Technology	DEC	3	0	0	3	3
2	23AS701	Rockets and launch vehicles	DEC	3	0	0	3	3
3	23AE072	Drone Technologies	DEC	3	0	0	3	3
4	23AE073	Helicopter Maintenance	DEC	3	0	0	3	3
5	23AS601	Space Mechanics	DEC	3	0	0	3	3
6	23AE075	Theory of Machines	DEC	3	0	0	3	3
7	23AE076	High Temperature Materials	DEC	3	0	0	3	3
8	23AE077	Rockets and Missiles	DEC	3	0	0	3	3

NON - DEPARTMENT ELECTIVE – EMERGING TECHNOLOGY

SL. NO.	COURSE CODE	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1	23NE971	Quantum Technology	NEC	3	0	0	3	3
2	23NE972	Block Chain Technology	NEC	3	0	0	3	3
3	23NE973	Data Analytics	NEC	3	0	0	3	3
4	23NE974	Augmented Reality and Virtual Reality	NEC	3	0	0	3	3
5	23NE975	Artificial Intelligence and Machine Learning Fundamentals	NEC	3	0	0	3	3
6	23NE976	IoT concepts and applications	NEC	3	0	0	3	3
7	23NE977	Data Science and Fundamentals	NEC	3	0	0	3	3
8	23NE978	Remote Sensing Concepts	NEC	3	0	0	3	3
9	23NE979	Urban Agriculture	NEC	3	0	0	3	3
10	23NE980	Electric Vehicle Technology	NEC	3	0	0	3	3
11	23NE981	Nanotechnology	NEC	3	0	0	3	3
12	23NE982	Functional Materials	NEC	3	0	0	3	3
13	23NE983	Introduction to Renewable Energy Systems	NEC	3	0	0	3	3
14	23NE984	Integrated Energy Planning for Sustainable Development	NEC	3	0	0	3	3

NON - DEPARTMENT ELECTIVE – MANAGEMENT COURSES

SL. NO.	COURSE CODE	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1	23HS971	Total Quality Management	NEC	3	0	0	3	3
2	23HS972	Engineering Economics and Financial Accounting	NEC	3	0	0	3	3
3	23HS973	Engineering Management and Law	NEC	3	0	0	3	3
4	23HS974	Knowledge Management	NEC	3	0	0	3	3
5	23HS975	Industrial Management	NEC	3	0	0	3	3
6	23HS976	Entrepreneurship and Business Opportunities	NEC	3	0	0	3	3
7	23HS977	Modern Business Administration and Financing	NEC	3	0	0	3	3
8	23HS978	Essentials of Management	NEC	3	0	0	3	3

NON - DEPARTMENT ELECTIVE – SAFETY COURSES

SL. NO.	COURSE CODE	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1	23HS979	Disaster Management	NEC	3	0	0	3	3
2	23HS980	Industrial Safety	NEC	3	0	0	3	3
3	23HS981	Automotive Safety	NEC	3	0	0	3	3

SEMESTER-WISECREDITDISTRIBUTION

SEMESTER	HSMC	BSC	ESC	PCC	DEC	NEC	EEC	Total
SemesterI	5	11	5					**21**
SemesterII	4	7	9	5				**25**
SemesterIII	3	4		13				**20**
SemesterIV		4		13	6		1	**24**
SemesterV			2	9	6	3		**20**
SemesterVI			5	8	6	3	3	**25**
SemesterVII			2	13		3	7	**25**
SemesterVIII							10	**10**
B.E–AeronauticalEngineering	**12**	**26**	**23**	**61**	**18**	**9**	**21**	**170**