



REVA
UNIVERSITY

Bengaluru, India

SCHOOL OF MECHANICAL ENGINEERING

B. Tech. in Aerospace Engineering

2023-27 Scheme

Rukmini Knowledge Park, Kattigenahalli,

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Rukmini Educational
Charitable Trust

www.reva.edu.in

Credit distribution for various category of courses

Sl. No.	Course Category	Abbreviation (AICTE)	Abbreviation (REVA)	Suggested breakup of credits (AICTE)	Credit breakup (REVA)
1	Humanities and Social Sciences including Management courses (HSMC)	HSMC	FC	12	9
2	Basic Science Courses	BSC	FC	25	20
3	Engineering Science courses including workshop, drawing, basics of electrical /mechanical /computer Etc	ESC	FC	24	29
4	Professional core courses	PCC	HC	48	58
5	Professional Elective courses relevant to chosen specialization /branch	PEC	SC	18	15
6	Open subjects – Electives from other technical and /or emerging subjects	OE	OE	18	12
7	Project work, seminar and internship in industry or elsewhere	PROJ	HC	15	19
8	Mandatory Courses [Environmental Sciences, Induction training, Indian Constitution, Essence of Indian Knowledge Tradition]	MC	MC	-	-
9	Skill Development Courses (SDC)	-	SDC		06
TOTAL CREDITS				160	168

B.Tech in Aerospace Engineering
Curriculum Structure for B. Tech Aerospace Engineering Program
SEMESTER-1 (Cycle-1)

Sl. No	Course Code	Title of the Course	HC/FC/SC/OE/MC/SDC	Credit Pattern				Contact Hours / Week	Examination			Course category (As per AICTE)
				L	T	P	Total Credit		CIE Marks	SEE Marks	Total Marks	
1	B23AS0102	Differential Equations and Linear Algebra	FC	3	0	0	3	3	50	50	100	BSC
2	B23AS0107	Applied Physics	FC	3	0	0	3	3	50	50	100	BSC
3	B23EN0102	Introduction to Accounting	FC	1	0	0	1	1	25	25	50	HSMC
4	B23CS0104	Introduction to Data Science	HC	2	0	0	2	2	50	50	100	ESC
5	B23EE0101	Basics of Electrical and Electronics Engineering	HC	3	0	0	3	3	50	50	100	ESC
6	B23ED0101	Elements of Civil Engineering and Mechanics	HC	3	0	0	3	3	50	50	100	ESC
7	B23ME0101	Computer Aided Engineering Drawing	HC	2	0	1	3	4	50	50	100	ESC
8	B23CS0108	Data Science Lab	HC	0	0	1	1	2	25	25	50	ESC
9	B23EE0102	Basics of Electrical and Electronics Engineering Lab	HC	0	0	1	1	2	25	25	50	ESC
10	B23AS0108	Applied Physics Lab	FC	0	0	1	1	2	25	25	50	BSC
TOTAL				17	0	4	21	25	400	400	800	
TOTAL SEMESTER CREDITS				21								
TOTAL CUMULATIVE CREDITS				21								
TOTAL CONTACT HOURS				25								
TOTAL MARKS				800								

Nomenclature: L: Lecture, T: Tutorial, P: Practical/Practice/Hands-on, HC: Hard Core, SC: Soft Core, FC: Foundation Core, OE: Open Elective, SDC: Skill Development Course, CIE: Continuous Internal Evaluation, SEE: Semester End Examination, BSC: Basic Science Course, HSMC: Humanities, Social science and Management Course, ESC: Engineering Science Course, PCC: Program Core Course, PEC: Professional Elective Course, MC: Mandatory Course, PROJ: Project work/Internship

Note: SDC-1 will be hands-on based skill enhancement course that create expertise in the domain of respective engineering branch

SEMESTER-2 (Cycle-2)

Sl. No	Course Code	Title of the Course	HC / FC /SC /OE /MC	Credit Pattern				Contact Hours / Week	Examination			Course category (As per AICTE)
				L	T	P	Total Credit		CIE Marks	SEE Marks	Total Marks	
1	B23AS0205	Vector Calculus and Partial Differential Equations	FC	3	0	0	3	3	50	50	100	BSC
2	B23AS0204	Applied Chemistry	FC	3	0	0	3	3	50	50	100	BSC
3	B23AH0103	Communication Skills	FC	0	0	1	1	2	25	25	50	HSMC
4	B23CI0104	Programming with C	HC	3	0	0	3	3	50	50	100	ESC
5	B23ME0103	Elements of Mechanical Engineering	HC	3	0	0	3	3	50	50	100	ESC
6	B23EN0101	IoT and Applications	HC	1	0	1	2	3	50	50	100	ESC
7	B23ME0102	Innovation and Entrepreneurship	HC	1	0	1	2	3	50	50	100	ESC
8	B23CI0108	Programming with C Lab	HC	0	0	1	1	2	25	25	50	ESC
9	B23ME0104	Engineering Workshop	HC	0	0	1	1	2	25	25	50	ESC
10	B23AS0206	Applied Chemistry Lab	FC	0	0	1	1	2	25	25	50	BSC
11	B23ET0201	Skill Development Course-I	SDC	0	0	2	2	4	50	50	100	ESC
12	B23ME0105	Tree Plantation in Tropical Region: Benefits and Strategic Planning	FC	1	0	0	1	1	25	25	50	HSMC
TOTAL				15	0	8	23	31	475	475	950	
TOTAL SEMESTER CREDITS				23								
TOTAL CUMULATIVE CREDITS				44								
TOTAL CONTACT HOURS				31								
TOTAL MARKS				950								

SEMESTER-3 (Cycle-1)

Sl. No	Course Code	Title of the Course	HC / FC / SC / OE / MC	Credit Pattern				Contact Hours / Week	Examination			Course category (As per AICTE)
				L	T	P	Total Credit		CIE Marks	SEE Marks	Total Marks	
1	B23AS0302	Laplace Transforms and Fourier Series	HC	3	1	0	4	5	50	50	100	BSC
2	B23CS0301	Professional Ethics	FC	2	0	0	2	2	50	50	100	HSMC
3	B23CI0309	Design Thinking	FC	0	0	1	2	2	25	25	50	HSMC
4	B23AS0403	Environmental Science	MC	0	0	0	0	2	25	25	50	BSC
5	B23ET0301	Introduction to Aerospace Engineering	HC	3	0	0	3	3	50	50	100	PCC
6	B23ET0302	Mechanics of Solids	HC	3	0	0	3	3	50	50	100	PCC
7	B23ET0303	Aerospace Materials	HC	3	0	0	3	3	50	50	100	PCC
8	B23ET0304	Aero Thermodynamics	HC	2	1	0	3	4	50	50	100	PCC
9	B23ET0305	Fluid Mechanics	HC	3	0	0	3	3	50	50	100	PCC
10	B23ET0306	Fluid Mechanics Lab	HC	0	0	1	1	2	25	25	50	PCC
11	B23ET0307	Material Testing Lab	HC	0	0	1	1	2	25	25	50	PCC
12	B23ET0308	Soft Skill -1	HC	0	0	1	1	2	25	25	50	PCC
TOTAL				19	2	4	25	33	475	475	950	
TOTAL SEMESTER CREDITS				25								
TOTAL CUMULATIVE CREDITS				69								
TOTAL CONTACT HOURS				33								
TOTAL MARKS				950								

SEMESTER-4 (Cycle-2)

Sl. No	Course Code	Title of the Course	HC / FC / SC / OE / MC	Credit Pattern				Contact Hours / Week	Examination			Course category (As per AICTE)
				L	T	P	Total Credit		CIE Marks	SEE Marks	Total Marks	
1	B23AS0402	Probability and Sampling Theory	HC	3	1	0	4	5	50	50	100	BSC
2	B23EE0310	Universal Human Values	FC	2	0	0	2	2	50	50	100	HSMC
3	B23EN0308	Technical Documentation	FC	1	0	0	1	1	25	25	50	HSMC
4	B23MEM301	Indian Constitution	MC	0	0	0	0	2	0	50	50	HSMC
5	B23ET0402	Aircraft Structures	HC	3	0	0	3	4	50	50	100	PCC
6	B23ET0403	Basics of Aerodynamics	HC	1	1	0	2	3	50	50	100	PCC
7	B23ET0404	Computer Aided Aircraft Component Drawing	HC	0	0	2	3	2	50	50	100	PCC
8	B23ET0405	Aircraft Manufacturing Technology	HC	2	0	0	2	2	50	50	100	PCC
9	B23ET0406	Manufacturing Technology Lab	HC	0	0	1	1	2	25	25	50	PCC
10	B23ET0407	Aircraft Structures Lab	HC	0	0	1	1	2	25	25	50	PCC
11	B23ET0408	Skill Development Course-II	SDC	0	0	2	2	4	50	50	100	PCC
12	B23ET0409	Soft Skill -2	HC	0	0	1	1	2	25	25	50	PCC
TOTAL				12	2	7	21	33	450	500	950	
TOTAL SEMESTER CREDITS				21								
TOTAL CUMULATIVE CREDITS				90								
TOTAL CONTACT HOURS				33								
TOTAL MARKS				950								

SEMESTER-5

Sl. No	Course Code	Title of the Course	HC / FC /SC /OE /MC	Credit Pattern				Contact Hours / Week	Examination			Course category (As per AICTE)
				L	T	P	Total Credit		CIE Marks	SEE Marks	Total Marks	
1	B23ME0501	Smart Materials	OE	3	0	0	3	3	50	50	100	OE
2	B23ED0501	Indian Heritage and Culture	MC	0	0	0	0	2	0	50	50	HSMC
3	B23ET0501	Advanced Aerodynamics	HC	3	0	0	3	3	50	50	100	PCC
4	B23ET0502	Finite Elements Method	HC	3	0	0	3	3	50	50	100	PCC
5	B23ET0503	Aero Heat Transfer	HC	3	0	0	3	3	50	50	100	PCC
6	B23ET0504	Flight Mechanics	HC	1	1	0	2	3	50	50	100	PCC
7	B23ETS511	Introduction to space technology	SC	3	0	0	3	3	50	50	100	PEC
	B23ETS512	Fatigue and Fracture Mechanics										
	B23ETS513	Gas Turbines										
	B23ETS514	Aircraft Electrical Systems and Instrumentation										
8	B23ET0505	Skill Development Course-III	SDC	0	0	2	2	4	50	50	100	PCC
9	B23ET0506	Heat Transfer Lab	HC	0	0	1	1	2	25	25	50	PCC
10	B23ET0507	Aerodynamics Lab	HC	0	0	1	1	2	25	25	50	PCC
11	B23ET0508	Structural Analysis Lab	HC	0	0	1	1	2	25	25	50	PCC
TOTAL				16	1	5	22	30	425	475	900	
TOTAL SEMESTER CREDITS				22								
TOTAL CUMULATIVE CREDITS				112								
TOTAL CONTACT HOURS				30								
TOTAL MARKS				900								

SEMESTER-6

Sl. No	Course Code	Title of the Course	HC / FC /SC /OE /MC	Credit Pattern				Contact Hours /Week	Examination			Course category (As per AICTE)
				L	T	P	Total Credit		CIE Marks	SEE Marks	Total Marks	
1	B23ME0601	Energy Technology	OE	3	0	0	3	3	50	50	100	OE
2	B23ET0601	Aerospace Propulsion	HC	2	1	0	3	4	50	50	100	PCC
3	B23ET0602	Computational Fluid Dynamics	HC	2	1	0	3	4	50	50	100	PCC
4	B23ET0603	Design of Transmission Elements	HC	3	0	0	3	3	50	50	100	PCC
5	B23ETS611	Hypersonics	SC	3	0	0	3	3	50	50	100	PEC
	B23ETS612	Fundamentals of Astrophysics										
	B23ETS613	Helicopter Dynamics										
	B23ETS614	Cryogenic Engineering										
6	B23ETS621	Experimental Stress Analysis	SC	3	0	0	3	3	50	50	100	PEC
	B23ETS622	Vibration Engineering										
	B23ETS623	Satellite Communication										
	B23ETS624	Unmanned Aerial Vehicles										
7	B23ET0604	Propulsion Lab	HC	0	0	1	1	2	25	25	50	PCC
8	B23ET0605	Computational Aerodynamics Lab	HC	0	0	1	1	2	25	25	50	PCC
9	B23ET0606	Research Based Mini Project	HC	0	0	2	2	4	25	25	50	PROJ
TOTAL				16	2	4	22	28	375	375	750	
TOTAL SEMESTER CREDITS				22								
TOTAL CUMULATIVE CREDITS				134								
TOTAL CONTACT HOURS				28								
TOTAL MARKS				750								

SEMESTER-7

Sl. No	Course Code	Title of the Course	HC / FC / SC / OE / MC	Credit Pattern				Contact Hours / Week	Examination			Course category(As per AICTE)
				L	T	P	Total Credit		CIE Marks	SEE Marks	Total Marks	
1	B23ME0701	Electric and Hybrid Vehicles	OE	3	0	0	3	3	50	50	100	OE
2	B23ME0702	Sustainable Engineering	OE	3	0	0	3	3	50	50	100	OE
3	B23ET0701	Avionics	HC	3	0	0	3	3	50	50	100	PCC
4	B23ET0702	Control Engineering	HC	3	0	0	3	3	50	50	100	PCC
5	B23ET0703	Aircraft Flight and Control Systems	HC	3	0	0	3	3	50	50	100	PCC
6	B23ETS711	IoT and ML in Aviation	SC	3	0	0	3	3	50	50	100	PEC
	B23ETS712	Aircraft Maintenance										
	B23ETS713	Aero Elasticity										
	B23ETS714	Wind Tunnel Technologies										
	B23ETS715	Internship Phase -I										
7	B23ETS721	Hydraulics and Pneumatics	SC	3	0	0	3	3	50	50	100	PEC
	B23ETS722	Theory of Elasticity and Plasticity										
	B23ETS723	Experimental Aerodynamics										
	B23ETS724	Elements of Jet Propulsion System										
	B23ETS725	Internship Phase -II										
8	B23ET0704	Avionics Lab	HC	0	0	1	1	2	25	25	50	PCC
9	B23ET0705	Aircraft Simulator Lab	HC	0	0	1	1	2	25	25	50	PCC
10	B23ET0706	Project Phase-1	HC	0	0	1	1	3	25	25	50	PROJ
TOTAL				21	0	3	24	28	425	425	850	
TOTAL SEMESTER CREDITS				24								
TOTAL CUMULATIVE CREDITS				158								
TOTAL CONTACT HOURS				28								
TOTAL MARKS				850								

SEMESTER-8

Sl. No	Course Code	Title of the Course	HC / FC/SC /OE /MC	Credit Pattern				Contact Hours / Week	Examination			Course category (As per AICTE)
				L	T	P	Total Credit		CIE Marks	SEE Marks	Total Marks	
1	B22ET0801	Major Project	HC	0	0	10	10	20	50	50	100	PROJ
TOTAL				0	0	10	10	20	50	50	100	
TOTAL SEMESTER CREDITS				10								
TOTAL CUMULATIVE CREDITS				168								
TOTAL CONTACT HOURS				20								
TOTAL MARKS				100								