Aerospace Engineering
Course Outline
Pulchowk Campus, Institute of Engineering
Tribhuvan University
Nepal

January, 2019

Year I															Part: I
Teaching Schedule							Examination Scheme								
							Theory			Practical					
								Final			Final				
SN	Course Code	Course Title	L	T	P	Total	Assessment Marks	Duration Hrs	Marks	Assessment Marks	Duration Hrs	Marks	Total	Remarks
1	SH 401	Engineering Mathematics - I	3	2	0	5	20	3	80				100	
2	SH 402	Engineering Physics	4	1	2	7	20	3	80	20	3	30	150	
3	EE 401	Basic Electrical Engineering	3	1	1.5	5.5	20	3	80	25			125	
4	CE 401	Applied Mechanics	3	2	0	5	20	3	80				100	
5	ME 401	Engineering Drawing - I	1	0	3	4				60	3	40	100	
6	ME 403	Workshop Technology	1	0	3	4	10			40			50	
		Total	**15**	**6**	**9.5**	**30.5**	**90**	**12**	**320**	**145**	**6**	**70**	**625**	

Year I															Part: II
Teaching Schedule							Examination Scheme								
							Theory			Practical					
								Final			Final				
SN	Course Code	Course Title	L	T	P	Total	Assessment Marks	Duration Hrs	Marks	Assessment Marks	Duration Hrs	Marks	Total	Remarks
1	SH 451	Engineering Mathematics - II	3	2	0	5	20	3	80				100	
2	ME 451	Engineering Drawing- II	1	0	3	4				60	3	40	100	
3	EX 451	Basic Electronics Engineering	3	1	1.5	5.5	20	3	80	25			125	
4	CT 452	Computer Programming	3	0	3	6	20	3	80	50			150	
5	SH 453	Engineering Chemistry	3	1	3	7	20	3	80	20	3	30	150	
6	ME 452	Fundamentals of Thermodynamics and Heat Transfer	3	1	1.5	5.5	20	3	80	25			125	
		Total	**16**	**5**	**12**	**33**	**100**	**15**	**400**	**180**	**6**	**70**	**750**	

Year: II														Part: I
Teaching Schedule							Examination Scheme							
							Theory			Practical				
								Final			Final			
SN	Course Code	Course Title	L	T	P	Total	Assessment Marks	Duration Hrs	Marks	Assessment Marks	Duration Hrs	Marks	Total	Remarks
1	AS 501	Fundamentals of Aerospace Engineering	3	0	1.5	4.5	20	3	80	25			125	
2	AS 502	Fluid Dynamics	3	1	1.5	5.5	20	3	80	25			125	
3	AS 503	Computer Aided Design and Manufacturing	3	1	1.5	5.5	20		80	25			125	
4	SH 501	Engineering Mathematics - III	3	2	0	5	20	3	80				100	
5	ME 502	Engineering Mechanics	3	1	0	4	20	3	80				100	
6	EE 602	Control System	3	1	1.5	5.5	20	3	80	25			125	
		Total	**18**	**6**	**6**	**30**	**120**	**15**	**480**	**100**			**700**	

Year: II														Part: II
Teaching Schedule							Examination Scheme							
							Theory			Practical				
								Final			Final			
SN	Course Code	Course Title	L	T	P	Total	Assessment Marks	Duration Hrs	Marks	Assessment Marks	Duration Hrs	Marks	Total	Remarks
1	AS 551	Aerospace Materials	4	0	1.5	5.5	20	3	80	25			125	
2	AS 552	Aerodynamics	3	2	1.5	6.5	20	3	80	25			125	
3	AS 553	Applied Thermodynamics and Heat Transfer	3	1	1.5	5.5	20	3	80	25			125	
4	SH 552	Probability and Statistics	3	1	0	4	20	3	80				100	
5	ME 552	Strength of Materials	3	1	1.5	5.5	20	3	80	25			125	
6	ME 653	Theory of Mechanism and Machine I	3	1.5	0	4.5	20	3	80				100	
		Total	**19**	**6.5**	**6**	**31.5**	**120**	**18**	**480**	**100**			**700**	

Year: III														Part: I
Teaching Schedule							Examination Scheme							
							Theory			Practical				
								Final			Final			
SN	Course Code	Course Title	L	T	P	Total	Assessment Marks	Duration Hrs	Marks	Assessment Marks	Duration Hrs	Marks	Total	Remarks
1	AS 601	Avionics	3	1	1.5	5.5	20	3	80	25			125	
2	AS 602	Machine Design	4	1	1.5	6.5	20	3	80	25			125	
3	AS 603	Continuum Mechanics	3	1	1.5	5.5	20	3	80	25			125	
4	AS 604	Aircraft Propulsion	4	0	1.5	5.5	20	3	80	25			125	
5	AS 605	Fault Monitoring and Diagnosis	3	1	1.5	5.5	20	3	80	25			125	
6	SH 603	Numerical Methods	3	1	3	7	20	3	80	50			150	
		Total	**20**	**5**	**10.5**	**35.5**	**120**	**18**	**480**	**200**			**775**	

Year: III														Part: II
Teaching Schedule							Examination Scheme							
							Theory			Practical				
								Final			Final			
SN	Course Code	Course Title	L	T	P	Total	Assessment Marks	Duration Hrs	Marks	Assessment Marks	Duration Hrs	Marks	Total	Remarks
1	AS 651	Aircraft Manufacturing Process	3	0	2	5	20	3	80	50			150	
2	AS 652	Aircraft Maintenance Engineering	4	0	1.5	5.5	20	3	80	50			150	
3	AS 653	Aircraft Systems	3	1	1.5	5.5	20	3	80	25			125	
4	AS 654	Flight Dynamics	3	1	1.5	5.5	20	3	80	25			125	
5	AS 655	Unmanned Air Vehicle Synthesis	3	1	1.5	5.5	20	3	80	25			125	
6	ME 751	Finite Element Method	3	1	1.5	5.5	20	3	80	25			125	
		Total	**19**	**4**	**9.5**	**32.5**	**120**	**18**	**480**	**175**			**800**	

Year: IV														Part: I
Teaching Schedule							Examination Scheme							
							Theory			Practical				
								Final			Final			
SN	Course Code	Course Title	L	T	P	Total	Assessment Marks	Duration Hrs	Marks	Assessment Marks	Duration Hrs	Marks	Total	Remarks
1	AS 701	Aircraft Preliminary Design	3	1	1.5	5.5	20	3	80	25			125	
2	AS 702	Computational Fluid Dynamics	3	1	1.5	5.5	20	3	80	25			125	
3	AS 703	Air Traffic Management	4	0	1.5	5.5	20	3	80	25			125	
4	AS 704	Aircraft Structures	3	1	1.5	5.5	20	3	80	25			125	
5	AS 705	Instrumentation and Sensors	3	0	2	5	20	3	80	25			125	
6	AS	Elective I	3	1	1.5	5.5	20	3	80	25			125	
7	AS	Project I								50			50	
		Total	**19**	**5**	**9.5**	**32.5**	**120**	**18**	**480**	**200**			**800**	

Year: IV														Part: II
Teaching Schedule							Examination Scheme							
							Theory			Practical				
								Final			Final			
SN	Course Code	Course Title	L	T	P	Total	Assessment Marks	Duration Hrs	Marks	Assessment Marks	Duration Hrs	Marks	Total	Remarks
1	AS 751	Internship	0	0	6	6				100		100	200	
2	AS 752	Aviation Professional Practices	2	0	0	2	10	1.5		40			50	
3	AS	Elective II	3	1	1.5	5.5	20	3	80	25			125	
4	AS	Elective III	3	1	1.5	5.5	20	3	80	25			125	
5	AS	Project II	0	0	6	6				100		75	175	
		Total	**8**	**2**	**15**	**25**	**50**	**7.5**	**160**	**290**		**175**	**675**	
Note: Industrial attachment includes internship at Airlines or design analysis companies (CAE) not only limited to aviation industry.														

Elective courses as per specialization course:

Stream: Aerodynamics & Propulsion				
SN	**Course Code**	**Elective**	**Course Title**	**Remarks**
1	AS 72501	Elective I	Compressible Aerodynamics	
2	AS 76551	Elective II	Rocket Propulsion	
3	AS 75552	Elective III	Advanced Spacecraft Propulsion	

Stream: Aircraft Maintenance Engineering				
SN	**Course Code**	**Elective**	**Course Title**	**Remarks**
1	AS 72502	Elective I	Aviation Legislation	
2	AS 76553	Elective II	Human Reliability, Error and Factor in Aviation	
3	AS 75554	Elective III	Fleet Planning for Airlines	

Stream: Structural Design				
SN	**Course Code**	**Elective**	**Course Title**	**Remarks**
1	AS 72503	Elective I	Advanced Vibration	
2	AS 76555	Elective II	Fatigue and Fracture Mechanics	
3	AS 75556	Elective III	Non-destructive Testing	

Stream: Spacecraft/Satellites				
SN	**Course Code**	**Elective**	**Course Title**	**Remarks**
1	AS 72504	Elective I	Spacecraft System Engineering	
2	AS 76557	Elective II	Satellite Communication	
3	AS 75558	Elective III	Design of Pico/Nano-satellite	

Stream: Navigation/Avionics				
SN	**Course Code**	**Elective**	**Course Title**	**Remarks**
1	AS 72505	Elective I	Digital Signal Processing	
2	AS 76559	Elective II	Radar Communication	
3	AS 75560	Elective III	Design of UAV avionics	