Course Structure of MTech / MTech + PhD Dual Degree Program in Space Engineering

Minimum Educational Qualification (MEQ): Four-year Bachelor's degree or five-year integrated degree (with first division as defined by the awarding Institute/ University for Indian applicants and equivalent to International applicants, as assessed by the Institute) in Electronics and Communication/ Electronics/ Engineering Physics / Aerospace, or M.Sc. in Physics/ Electronics/ Atmospheric science. Relaxation as per GoI norms in qualifying degree is applicable for SC and ST category applicants.

Qualifying Examination:

(a) International students: Valid score of TOEFL or IELTS.

(b) Indian students: Valid GATE qualification in Aerospace Engineering/Electronics and Communication Engineering/ Physics/ Engineering Sciences (Engineering Mathematics + Fluid Mechanics/Material Science/ Thermodynamics/ Atmospheric and Oceanic Sciences)

Categories of Admission:

(a) International Students: (i) International self-financed (ISF) students; (ii) International students sponsored by non-government organizations or by a reputed industry (ISW); (iii) International students sponsored by foreign government or its organizations or through mutual collaborative programs of India with other countries (GSW)

(b) Indian Students: Teaching Assistantship (TA); (ii) Highly motivated sponsored candidate (SW) on full-time basis from highly reputed R and D organizations such as DRDO, ISRO, BHEL, C-DAC, ADE, ADA, etc. and highly reputed Industries; (iii) Defense Forces (DF): Candidates sponsored by the Defense Forces; (iv) Regular institute staff (IS) of IIT Indore on part-time basis only.

Candidates of SW, DF and IS categories will not be provided any scholarship.

Selection criteria: GATE Score and / or Interview. (Valid GATE score compulsory for TA category)

Duration of the Program: Two years full-time.

Proposed Total Intake: 15 (direct admission under TA category) + Sponsored candidates

Course Structure for M.Tech. (2 year) in Space Engineering

1st Year: Semester-I

Course code	Course Title	Contact Hours (L-T-P)	Credits
AA 603/ AA 403	*Space Engineering System	2-0-2	3
AA 478/678	Space Weather	2-1-0	3
AA 6XX/ AA 4XX	*Remote sensing for Atmospheric and Space Sciences	2-0-2	3
AA 605/ AA 405	*Detectors and Sensors for Space Observations	2-0-2	3
ZZ XXX	Elective-I	x-x-x	3
ZZ XXX	Elective-II	x-x-x	3
Total minimum credits earned during the semester			**18**
Additional course (as per the requirement basis)			
HS 641*	English Communication Skills	2-0-2	PP/NP

1st Year: Semester-II

Course code	Course Title	Contact Hours (L-T-P)	Credits
AA 608	Astrostatistics	2-1-0	3
AA 404/ AA 604	Spacecraft and Payload Attitude Dynamics, Control and Pointing	2-1-0	3
AA 676/AA 476	Satellite Based Navigation Systems	2-1-0	3
ZZ XXX	**Elective-III**	x-x-x	3
ZZ XXX	**Elective-IV**	x-x-x	3
AA 6XX	PG Seminar Course	0-2-0	2
Total minimum credits earned during the semester			**17**

2nd Year: Semester–III

Course code	Course Title	Contact Hours (L-T-P)	Credits
AA 799	M.Tech. Research Project (Stage–I)	0-0-36	18
Total minimum credits to be earned during the semester			**18**

2nd Year: Semester–IV

Course code	Course Title	Contact Hours (L-T-P)	Credits
AA 800	M.Tech. Research Project (Stage–II)	0-0-36	18
Total minimum credits to be earned during the semester			18
Total minimum credits to be earned during the program			**71**

Courses for Elective I-IV@

Course code	Course Title	Contact Hours (L-T-P)	Credits
AA 606	Random signals and applied Kalman Filtering	2-1-0	3
AA 601	Astrophysical Fluids and Plasma	2-1-0	3
AA 471N/671N	Relativity and Cosmology	2-1-0	3
AA xxx	***Computational Methods in Astronomy and Space Sciences**	2-1-0	3
AA 610	Spatial Informatics	2-1-0	3
AA 474N/674N	Radio Astronomy	2-1-0	3
AA 672N /AA472N	Galactic and Extragalactic Astronomy	2-1-0	3

@In addition to this course list, a student can also opt from the PG courses being offered by the other disciplines**.**