

## Department of Applied Mechanics

### AM 1: M.Tech in Computational and Experimental Mechanics

Semester I								
S No	Course No	Course Name	L	T	E	P	O	C
1	AM 5390	Advanced Solid Mechanics	3	0	0	0	6	9
2	AM 5530	Advanced Fluid Mechanics	3	0	0	0	6	9
3		Computational Core I	3	0	0	0	6	9
4		Computational Core II	3	0	0	0	6	9
5		Elective 1	3	0	0	0	6	9
6	AM 5810	Computational Lab	0	0	0	3	3	6
		<b>Total Credits</b>						<b>51</b>

Semester II								
S No	Course No	Course Name	L	T	E	P	O	C
1		Experimental Core	3	0	0	0	6	9
2		Elective 2	3	0	0	0	6	9
3		Elective 3	3	0	0	0	6	9
4		Elective 4	3	0	0	0	6	9
5		Elective 5	3	0	0	0	6	9
6	AM 5400 / AM 5820	Experimental Lab	0	0	0	6	6	12
		<b>Total Credits</b>						<b>57</b>

Summer								
S No	Course No	Course Name	L	T	E	P	O	C
1	AM 5200/ AM 5423	Summer Industrial Internship (OR) Summer Project*	0	0	0	0	15	15
		<b>Total credits</b>						<b>15</b>

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Semester III								
S No	Course No	Course Name	L	T	E	P	O	C
1		Elective 6	3	0	0	0	6	9
2	AM 5420	Project I	0	0	0	0	30	30
3	AM 5480	Seminar	0	0	0	0	3	3
		<b>Total Credits</b>						<b>42</b>

Semester IV								
S No	Course No	Course Name	L	T	E	P	O	C
1	AM 5420	Project II	0	0	0	0	40	40
		<b>Total Credits</b>						<b>40</b>

**Total Credits: 205**

Basic Core		L	T	E	P	O	C
<b>AM 5390</b>	Advanced Solid Mechanics	3	0	0	0	6	9
<b>AM 5530</b>	Advanced Fluid Mechanics	3	0	0	0	6	9

Computational Core (any 2)		L	T	E	P	O	C
<b>AM 5450</b>	Fundamentals of Finite Element Analysis	3	0	0	0	6	9
<b>AM 5630</b>	Foundation of Computational Fluid Dynamics	3	0	0	0	6	9
<b>AM 5600</b>	Computational Methods in Mechanics	3	0	0	0	6	9

Experimental Core (any 1)		L	T	E	P	O	C
<b>AM 5240</b>	Experimental Solid Mechanics	3	0	0	0	6	9
<b>AM 5018</b>	Experimental Techniques in Fluid Mechanics	3	0	0	0	6	9

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	<b>Electives (Fluid Mechanics Stream)</b>	<b>L</b>	<b>T</b>	<b>E</b>	<b>P</b>	<b>O</b>	<b>C</b>
AM 5113	Atomization in Sprays	3	0	0	0	6	9
AM6513	Advanced CFD	3	0	0	0	6	9
AM 5600	Advanced Gas Dynamics	3	0	0	0	6	9
AM6513	Advanced CFD	3	0	0	0	6	9
AM 5570	Introduction to Turbulence	3	0	0	0	6	9
AM6590	Turbulent Shear Flows	3	0	0	0	6	9
AM5640	Turbulence modeling	3	0	0	0	6	9
AM 6515	Boundary Layer Stability	3	0	0	0	6	9
AM6512	Application to Molecular Dynamics	3	0	0	0	6	9
AM6001	Theory of Free Surface Wave motion	3	0	0	0	6	9
AM5114	Flow and Transport in Heterogenous Porous Media	3	0	0	0	6	9
AM 6110	Bio-Fluid Mechanics	3	0	0	0	6	9
AM5540	Hydrodynamics	3	0	0	0	6	9
AM5014	Micro-Hydrodynamics	3	0	0	0	6	9
AM5460	Physicochemical Hydrodynamics	3	0	0	0	6	9
AM6517	Foundations of Micro and Nano scale Fluid Mechanics	3	0	0	0	6	9
AM6570	Flow induced Vibrations	3	0	0	0	6	9
AM5060	Topics in Thermal Engineering	3	0	0	0	6	9
AM5550	Vorticity Dynamics	3	0	0	0	6	9

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### Specific Notes:

- Starred items
  1. **AM 5200: “Summer Industrial Internship”** facilitates project work during summer in different industries/ hospitals/ clinical environments of students choice.
  2. **AM 5423: “Summer Project”** was earlier named as “Project Summer”. This option facilitates those who would like to stay back in IIT and start their project work early.
  3. **AM 5420: Project I** This is compulsory for all. The grade shall be awarded at the end of the semester without keeping in abeyance.
  4. **AM 5420: Project II** This is optional and the choice is given to the candidate by the end of the third semester. If the performance of the candidate in Project I, is not satisfactory, the candidate will be advised by the evaluation committee to pursue equivalent number of course based credits in the fourth semester.