Department of Computer Science and Engineering
Indian Institute of Technology, Hyderabad

2-year MTech TA Curriculum

Below is the proposed curriculum structure for two-year MTech program (TA):

Course No	Course Title	Credits	Semester
CS6013	Advanced Data Structures and Algorithms	3	I
CS5996	Industry Lecture Series	1	When offered
LA5180	Communication Skills (Advanced)	1	When offered
OPTION A			
CSxxxx	Core Electives (see notes)	21	I,II
CS6035	Thesis (Stage-1)	4	Summer
CS6045	Thesis (Stage-2)	8	III
CS6055	Thesis (Stage-3)	12	IV
OPTION B			
CSxxxx	Core Electives (see notes)	33	I,II,III,IV
CS6695	Capstone Project 1	6	III
CS6705	Capstone Project 2	6	IV

There will be two points-of-entry (POE) for a student's induction into one of the above options (A or B) of the two-year MTech (TA) program:

- **POE 1 (Before Summer of Year 1):** The student chooses an option, at the time of the department guide allocation process (which happens before Summer of Year 1). Once Option B is chosen, there is no possibility to switch later to Option A.
- **POE 2 (After Summer of Year 1):** In the event the student chooses Option A, the student takes up Thesis Stage 1 course in the summer after Year 1. The department thesis evaluation committee (or student himself/herself) can decide at the end of this course whether to switch to Option B. In this case, these credits (and the corresponding grade) will count towards the elective requirement of 33 credits for the degree. Note that: (i) Once Option B is chosen, there is no possibility to switch later to Option A. (ii) If Option A continues to be chosen at Phase 2, there is no possibility to switch later to Option B.

Other mandatory restrictions:

- A minimum of 6 credits needs to be completed within the first two semesters, from each of the three categories: Theory, Systems, and Data Science. These credits are counted towards the Core electives requirement.
- The remaining elective credits can be taken from any stream (Theory, Systems, or Data Science)
- In each of the first two semesters, a minimum of 9 credits needs to be completed and a maximum of 16 credits can be registered for.
- Only graduate-level courses offered by the CSE department can be counted towards the Core electives requirement.
- In case a student desires to count a non-graduate level course offered by CSE, or a course not offered by CSE, towards the core electives requirement, then the student needs to formally apply for an exception to DPGC along with an appropriate and detailed justification, and include a recommendation from his thesis advisor, or any other CSE faculty in case the advisor is not allocated. The DPGC is the approval authority in this matter; however, the DPGC cannot approve such an exception for more than three credits for the same student in case of non-CSE courses, and for more than nine credits in case of non-graduate CSE courses. In case the student wishes to count such exceptions towards the 6 credit requirement in the three categories, then he/she should further justify why it belongs to a particular category. The DPGC may approve the exception along with categorization or the exception alone.

Below is the curriculum structure for **three-year MTech program (RA)**:

Course No	**Course Name**	**Number of Credits**	**Semester**
CS6013	Advanced Data Structures & Algorithms	3	I/II
CS5996	Industry Lecture Series	1	When offered
LA5180	Communication Skills Advanced	1	When offered
CSxxxx	Core Electives (see notes)	21	I, II, III, IV
CS6035	Thesis (Stage-1)	4	IV
CS6045	Thesis (Stage-2)	8	V
CS6055	Thesis (Stage-3)	12	VI

Courses total to 26 credits, while 24 credits are for the MTech Thesis.

Further restrictions on the course structure for three-year MTechs are:

1. A minimum of 6 credits needs to be completed within the first four semesters, from each of the three categories: **Theory**, **Systems**, and **Data Science**. Please refer time-table for the categorization of existing PG courses offered by CSE. Also, these credits may be counted towards the Core electives requirement.
2. In each of the first four semesters, a minimum of 3 credits needs to be completed and a maximum of 13 credits can be registered for.
3. Only graduate level courses offered by the CSE department can be counted towards the Core electives requirement.
4. In case a student desires to count a non-graduate level course offered by CSE, or a course not offered by CSE, towards the core electives requirement, then the student needs to formally apply for an exception to DPGC along with an appropriate and detailed justification, and include a recommendation from his thesis advisor, or any other CSE faculty in case the advisor is not allocated. The DPGC is the approval authority in this matter; however, the DPGC cannot approve such an exception for more than three credits for the same student in case of non-CSE courses, and for more than nine credits in case of non-graduate CSE courses. In case the student wishes to count such exceptions towards the 6 credit requirement in the three categories, then he/she should further justify why it belongs to a particular category. The DPGC may approve the exception along with categorization or the exception alone.

Below is the PG-curriculum structure for **dual degree MTech program**:

Course No	**Course Name**	**Number of Credits**	**Semester**
CS5996	Industry Lecture Series	1	When offered
LA5180	Communication Skills Advanced	1	When offered
CSxxxx	Core Electives (see notes)	12	VII, VIII, IX, X
CS6035	Thesis (Stage-1)	4	Summer
CS6045	Thesis (Stage-2)	8	IX
CS6055	Thesis (Stage-3)	12	X

Courses total to 14 credits, while 24 credits are for the MTech Thesis.

Further restrictions on the course structure for dual degree candidates are:

1. In each of the VII and VIII semesters, a maximum of 7 credits can be registered for.
2. Only graduate level courses offered by the CSE department can be counted towards the Core electives requirement.
3. In case a student desires to count a course not offered by CSE, towards the core electives requirement, then the student needs to formally apply for an exception to DPGC along with an appropriate and detailed justification, and include a recommendation from his thesis advisor, or any other CSE faculty in case the advisor is not allocated. The DPGC is the approval authority in this matter; however, the DPGC cannot approve such an exception for more than three credits for the same student.
4. These 12 credits cannot be used for any other degree requirement if the student decides to drop his dual degree program. Needless to say, the credits done for his UG requirement cannot be double counted towards the PG requirement of 12 credits.