

IIT Madras

BS in Data Science and Applications

(4 year Undergraduate Degree Program)

Student Handbook

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Please read this carefully

Dear student,

This Student Handbook is intended to provide IIT Madras BS Degree students with the information and policies they should be aware of, which may help them make the most of the opportunities offered in this programme. It also gives you formal notification and explanation of the programme's regulations, policies and procedures.

It is essential, and your responsibility, to read it and familiarize yourself with the content. It should be kept handy and referred to during your time with us.

This handbook may be revised time and again. While this student handbook was prepared on the basis of the best information available at the time of publication, all information, including policies and procedures are subject to change without notice or obligation.

All rules and regulations in this document are approved by our committee. As changes keep getting approved, we will update them here.

We hope that your time as a student in this programme is successful and enjoyable.

Thank you.

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BS in Data Science & Applications - from IIT Madras

A) Data Science & Applications

IIT Madras has launched the BS in Data Science and Applications. In this program, the course contents are delivered online and can be studied by anyone from anywhere, while the monthly quizzes and final semester exams will have to be attended in-person at designated centres.

Depending on the number of courses completed, learners can earn

- a Foundation level certificate
- Diploma in Programming/Diploma in Data Science or both
- BSc degree in Programming and Data Science
- BS degree in Data Science and Applications

1. Highlights of the programme

Courses are taught by faculty of IIT Madras/other reputed institutes as well as experts from the industry.

Unlike many competitive admission exams which work on the philosophy of elimination and selection and admit a very limited number of learners into various programmes based on their performance relative to that of others, in this programme there are specific qualifying criteria, and a significantly large number of learners can enter.

Learners of any background, be it engineering, sciences, humanities, arts, medicine, law, etc can attempt and join this programme.

There is no limitation on the age of the learner or their geographical location.

2. Flexibility

There are two entry and four exit points, with learners being able to exit with either course certificates, or diploma or the degree. Learners can choose their pace of study every term. Being an online programme, there is no geographical barrier to learning from this programme - learners only need to travel to exam centres for exams each term.

IT IS IMPORTANT TO NOTE: This programme is NOT BASED on an admission process. Qualified learners can attempt respective stages of the programme and those who clear each stage will receive the certificate corresponding to that stage alone.

So, for example, the learner should be aware that they are not being admitted to a degree programme after the Qualifier. It is only for the set of Foundation courses, which on successful completion makes them eligible to enter the Diploma level. The diplomas or degrees are obtained by the candidate only when the requisite number of credits are accrued by completing the courses prescribed and satisfying any other mandatory criteria.

Admission to any level does not automatically entitle the learner to exit the programme with the Diploma or the degree.

3. Courses in the programme

3.1 Definition of credit in the program

The credits here are based on the UGC system of counting 14 hours of learner engagement as 1 credit. (1 credit mentioned here would be equivalent to 3 credits in the current IITM campus Credit system.)

The number of credits required to graduate with the BSc is 114 while that for the BS is 142. The structure of the program is as follows:

3.2 Level 1: The Foundation level

- Comprises 8 courses - English 1, English 2, Mathematics 1, Mathematics 2, Statistics 1, Statistics 2, Computational Thinking, Introduction to Python
- Number of credits: 32

3.3 Level 2: Diploma level

- Includes 2 Diplomas - Diploma in Programming and Diploma in Data Science
- Each diploma comprises 6 courses (23 credits) and 2 project courses (4 credits)
- Number of credits: 54

Diploma in Programming

- Database management systems (DBMS), Programming Data Structures and Algorithms using Python (PDSA), Java programming, System Commands, Application development - 1, Application Development - 2
- Project course in Application Development - 1
- Project course in Application Development - 2

Diploma in Data Science

(All the courses and Project are mandatory)

- Machine Learning Foundations (MLF), Machine Learning Techniques (MLT), Machine Learning Practice (MLP), Business Data Management (BDM), , Tools in Data Science (TDS)
- Project course in Machine Learning Practice
- **W.e.f Sep 2025, along with Business Analytics (BA) and BDM Project students will have the one more option in Diploma in Data Science**

Students can choose either of the options mentioned below alongside completing 21 Mandatory credits mentioned below.

Theory - MLF (4c), MLT (4c), MLP (4c), TDS (3c), BDM (4c)

Project - MLP Project (2c)

- The remaining 6 credits can be taken from the below mentioned options :

Option 1 (6 credits)	Option 2 (6 credits)
Business Analytics (4 Credits)	Introduction to Deep Learning and Generative AI (4 Credits) BSDA2001 Co Requisite : MLP
Business Data Management Project. (2 Credits)	Deep Learning and Generative AI project (2 Credits) BSDA2001P Corequisite : DL-Gen AI Theory

- Any one of the two options comprising a theory course and a project must be completed to ensure completion of the Diploma in Data Science.
- If you complete Option 1 in Diploma Level : courses in Option 2 is not possible in Degree Level (as Degree level as other courses related to DL)
- If you completed Option 2 in Diploma Level : courses in Option 1 can be done as an elective in Degree level
- Applicable for all students currently in the Diploma Level and for upcoming batches from Sep2025 Term.

(Those students who fall short of the 54 credits in the Diploma level (temporary, for a few students) will have to do

additional courses in the BSc level to make up for the deficit in credits. A student will be eligible for the BSc degree only if they complete 114 credits as per the norms given.)

3.4 Level 3: BSc Degree level courses

- Total of 28 credits
- Mandatory 2 core pairs (Software Engineering, Software Testing, Artificial Intelligence and Deep Learning)
- Mandatory course: Strategies for professional growth
- Maximum of 4 credits can be obtained from NPTEL, technical bucket

3.5 Level 4: BS Degree level courses

- Total of 28 credits
- Option of Apprenticeship - for 4/12 credits
- Mandatory to earn 4 credits from HS/MG stream, from NPTEL or program electives
- 2 level 4 or higher courses in programming stream and 2 level 4 or higher courses in the data science stream should be mandatorily completed

Apprenticeship has been split into 2 courses - one of 4 credits that corresponds to the 4 month internship and another as 8 credits for the term of apprenticeship that is continued from months 5-8 in the same company and domain.

Apprenticeship is optional and one can earn 0/4/8/12 credits from it.

1. The list of courses in
 - a. [Table 1: List of electives offered in the program](#)
 - b. [Table 2: List of NPTEL electives that can be credited at the BSc level](#)
 - c. [Table 3: List of HS/MG electives that can be credited from NPTEL](#)

The list of courses in the 3 tables here are subject to periodic revision.

2. Refer [Credit Transfer for NPTEL Courses](#) for process and credit transfer fee.

The course code defines the level of the course. If the course code is 2xxx,3xxx,4xxx then the level of the course is 2/3/4 respectively.

The fee for the level 3 courses is Rs 2500/credit while that of level 4 courses is Rs 5000/credit.

3.6 Two new elective courses (4c) at the degree level

Completely hands-on courses with weekly graded assignments along with a project + viva

Will have additional industry relevant topics - prepares you to attend job interviews

Enrollment limit: There will be a limit on the number of students who can enroll due to the project component.

Course no.	Course name	Category	Credits (pre-2015)	Prerequisites
BSDA4001	Data Science and AI Lab	BD	4	Deep Learning
BSCS4010	Application Development Lab	BP	4	Diploma in programming

Minors :

The Minors can be earned by completing the courses mentioned in the respective minor .The minors can be credited within the 142 credits required for the BS degree. The Minor can be earned only with the BS degree and not the Bsc degree.

A separate document will be issued by IITM stating that the Minor has been completed. There will be no change in transcript or the degree certificate for those who do the minor. A student can earn more than one minor provided he should complete all the courses required for the minor.

Minor in Economics and Finance:

- Corporate Finance and
- Managerial Economics
- Game Theory and Strategy (Elective Already available)

W.e.f Sep 2025 - Students will have the following minors :

Minor in Computer Systems

Prerequisite: Programming in C (BSCS3005)

- Computer System Design (BSCS3031)
- Operating Systems (BSCS4022)
- Computer Networks (BSCS4024)

Minor in Generative AI

- Large Language Models (LLM) (BSCS5001)
- Deep Learning Practice (DLP) (BSDA5013)
- Mathematical Foundations of Generative AI (BSDA5002)

Minor in Cloud Computing for AI

- Deep Learning Practice (DLP) (BSDA5013)
- Introduction to Big Data (BSDA5001)
- MLOps (BSDA5014)

Minor in Algorithmic Decision Making

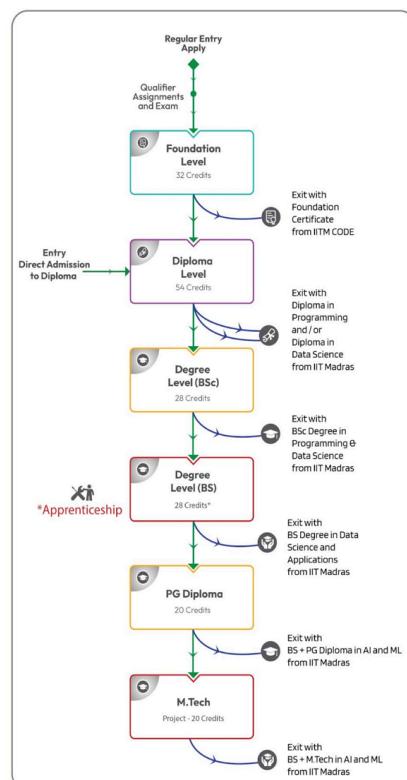
- Reinforcement Learning (BSDA5007)
- Algorithms for Data Science (BSDA5003)
- Sequential Decision Making (BSDA5011)

Minor in Multimodal AI Systems

Prerequisite: Deep Learning Practice (DLP) (BSDA5013)

- Deep Learning for Computer Vision (DLCV) (BSCS5003)
- Speech Technology (BSEE4001)
- Large Language Models (LLM) (BSCS5001)

3.6 Program Structure :



4. Fees for the entire programme

- First year fees kept low to enable learners to try out the programme
- Entry fee for Qualifier exam: Rs. 3000 (non-refundable)
- with suitable waivers
- Fee waivers for learners belonging to certain categories and economic backgrounds

Number of credits in each level:

Level	Theory	Project	Apprenticeship	NPTEL	MG/HS/HM
Foundation	32				
Diploma in DS	23	4			
Diploma in P	23	4			
BSc	28-X			X (0-4)	
BS	28-A-B		A (0/4/12)		B=4

***Only maximum of 24 credits can be transferred towards non counted CGPA course**

Foundation: Rs 32000/-
Diploma Level: 62500 x 2 = Rs 125,000/-
BSc Level: Rs 2.21L - 2.47L
BS Level: 3.25L - 3.87L

	Cost per credit (Rs)	Number of credits	Total fee	Level fees
Foundation	1000/c	32c	32000	32,000
Diploma	2500/c for Theory 1250/c for project	23x2=46c 4x2 = 8c	115,000 10,000	125,000
BSc	Level 3 - Rs 2500/c Level 4 - Rs 5000/c 1000/c for NPTEL	20c for 5 mandatory courses (Level 3) 4c NPTEL+4c Level 3 4c NPTEL + 4c Level 4 8c Level 3 4c Level 3 + 4c Level 4 8c Level 4	50000 4000+10000 4000+20000 20000 30000 40000	64,000 74,000 70,000 80,000 90,000
BS	Level 3 - Rs 2500/c Level 4 - Rs 5000/c 1000/c for NPTEL	2 Level 4 mandatory DS = 8c 2 Level 4 mandatory DP = 8c 4c NPTEL + 8c Level 3 4c NPTEL + 4c Level 3 + 4c Level 4 4c NPTEL + 8c Level 4 12c Level 3 12c Level 4	40000 40000 4000+20000 4000+30000 4000+40000 30000 60000	104000 114000 124000 110000 140000

Fee waivers depend on the category of learner and family income

	Family Income > 5 LPA		Family Income > 1 LPA and <= 5 LPA		Family Income <= 1 LPA	
	Fees	Docs Required	Fees	Docs Required	Fees	Docs Required
General	Full Fee	NIL	50% waiver	EWS + Family Income	75% waiver	EWS + Family Income
OBC	Full Fee	NIL	50% waiver	OBCL-NCL + Family Income	75% waiver	OBCL-NCL + Family Income
SC / ST	50% waiver	SC / ST	50% waiver	SC / ST	75% waiver	SC / ST + Family Income
PwD	50% waiver	PwD	50% waiver	PwD	75% waiver	PwD + EWS / OBCL-NCL + Family Income
SC / ST + PwD	75% waiver	SC / ST + PwD	75% waiver	SC / ST + PwD	75% waiver	SC / ST + PwD

SBI Loan Process:

Please contact Martina/Angelin Ph No 9444020900/8608076093, for any help.

Rate of interest starts from 8.10% with no collateral security and simple interest till course completion

- Loan is given to students along with any one parent, Father or Mother.
- Student is known as Borrower and the parent who is taking out a loan with the student will be known as Co-borrower.
- Student and co borrower both should have EITHER JOINT ACCOUNT IN SBI (any branch) or Separate accounts in SBI.
- We will provide you Application form which needs to be filled digitally. Once filled, you need to take coloured print and sign the documents wherever needed. Also attach the documents as per LIST OF DOCUMENTS given below.
- Application Print, and documents must be sent to following address using INDIA POST courier. 1st Cross Road, CAMPUS, Indian Institute of Technology, Chennai 600036

4.1 For students who are outside India:

Facilitation fee for exams is in addition to the above for candidates writing exams overseas - as fixed up with the local exam partner there. These are subject to periodic changes depending on the local exam partner identified.

Facilitation Fee

Quiz1 [irrespective of num of courses] = Rs.2000/-
 Quiz2 [irrespective of num of courses] = Rs.2000/-
 End term [per session] = Rs.2000/- [one course it is Rs.2000/- & more than one course it is Rs. 4000/-]

E.g If you opt for 4 courses
 Quiz1 = 2000, Quiz2 = 2000, EndTerm = 4000
 Totally 8000 to be paid as a facilitation fee
 *Facilitation fee may vary based on country. Eg: Kuwait & Bahrain it is Rs. 3000/-

5. Admission to the programme

5.1 Regular Entry into Foundation level

To enter the Foundation level, applicants have to pass the Qualifier exam.

The Foundation courses allow for interested applicants with a variety of educational backgrounds to be trained in the basics (Math, Statistics, Computational Thinking, Python programming and English) required to take up the Diploma level of Programming & Data Science courses.

Entry: Via the Qualifier exam into the Foundation level
Exit 1. Foundation course certificate
Exit 2. Diploma in Programming/Data Science or both
Exit 3. BSc Degree in Programming and Data Science from IIT Madras
Exit 4: BS in Data Science and Applications from IIT Madras

5.1.1 Eligibility to Apply for the Qualifier Exam

Minimum eligibility: Should have studied Mathematics and English in Class 10.

1. Anyone who has passed Class 12 or equivalent can apply irrespective of age or academic background. Those who qualify can join the program immediately. View list of accepted class 12 equivalents.
2. School students who have appeared for their Class 11 final exams can apply irrespective of their group/stream/board. Those who qualify can join the program after passing Class 12.

No additional eligibility other than the ones mentioned above is required to apply for the qualifier process or join the foundational level courses after clearing the qualifying exam.

The week 1 content is available to all candidates to sample on the website (<https://study.iitm.ac.in/ds/academics.html#AC15>) and view when they fill the Qualifier exam form. The learner has to fill the qualifier form available on the website study.iitm.ac.in/ds

The learner has to pay the fees for the Qualifier exam - currently set as Rs 3000/-for Gen category with suitable waivers for candidates from the SC/ST and PwD with 40% disability backgrounds. Currently there is no waiver for any other group of learners.

The fee will not be refunded once paid.

5.1.2 Preparation for the Qualifier exam

All regular entry applicants must go through the 4 week Qualifier Process to earn admission to the Foundation Level.

On the start date of the qualifier process week 1, access to the content for the four Foundation level courses - English 1, Maths-1, Statistics-1 and Computational Thinking will be provided.

The content that includes videos, tutorials, practice/graded assignments and text transcripts is released week wise. The content will be made live with an announcement on the portal, and an alert through email.

Every week the graded assignment must be submitted in each course.

5.1.3 Eligibility to appear for the qualifier exam

At the end of the 4 weeks, a qualifier exam will be conducted for eligible candidates based on the content covered in the 4 weeks of study.

Each assignment will be graded out of 100
Any assignment that is not attempted will be marked as 0.
There is a change in the modality of finalizing the students who become eligible to write the

qualifier exam.

- If the average of the first 2 weeks' assignment scores is \geq 40/100 (or as per the cutoff for each category of students) in each of the 4 subjects, the students will be eligible to write the qualifier exam in the first attempt within the term.
- For those who do not qualify after the week 2 assignments, the average of the best 2 out of the first 3 weeks' assignment scores will be considered. If this score is \geq 40/100 (or as per the cutoff for each category of students) in each of the 4 subjects, the students will become eligible to write the qualifier exam in the second attempt within the term.
- Reattempts within the term will be given suitably.

Only those who get the minimum required average assignment scores in all four courses (as given below) will be allowed to appear for the Qualifier Exam.

	Minimum Average Assignment Score required in each course
General Learner	40%
SC / ST / PwD with 40% disability	30%
PwD with 40% disability & SC / ST	30%
OBC-NCL / EWS	35%

Note: Relaxations in pass criteria indicated for various categories of learners is applicable ONLY for the qualifier process. There will be no relaxations in terms of grades / pass criteria once registered into the program.

Hall tickets will be released for only those candidates who become eligible to take the in-person proctored Qualifier Exam.

5.1.4 Criteria for passing the qualifier exam

In the qualifier exam comprising 4 subjects, the learner should obtain marks \geq individual subject cut-off as shown below. The total of all subject marks should be greater than the total cut-off. The cutoff marks are clearly specified for the different categories of learners in the table below.

	Min. Req. Qualifier Exam Score in each course	Min. Req. Average Qualifier Exam Score
General Learner	40%	50%
SC / ST / PwD with 40% disability	30%	40%
PwD with 40% disability & SC / ST	30%	40%
OBC-NCL / EWS	35%	45%

The qualifier exam marks will be displayed within the login on the portal along with an email and whatsapp alert sent to the candidates about this.

5.1.5 Validity of the qualifier score

The qualifier marks will be valid for the 3 terms that come subsequent to the qualifier exam date for the learner to register to the Foundation level. This score will be invalid after this period and the learner will have to go through the entire qualifier process (the 1 month of weekly assignments) and retake the qualifier exam, if they wish to join the programme.

For students in std XII who take the qualifier exam, the validity is for 3 terms from when they pass std XII.

5.1.6 Communication about qualifier exam results

Those who have qualified as per the above process will be intimated through email and whatsapp and within their login on the portal - if they are eligible to register further. An admission letter will also be generated and provided to each qualified candidate.

Once a candidate has qualified, they will not be permitted to apply again until their score is valid, which is for the next 3 subsequent terms. After this they will be eligible to reapply again.

The fees paid to attempt the Qualifier exam will not be refunded in either of the two situations - for those who missed writing the qualifier exam and for those who did not pass it.

5.1.7 Second attempt: If a candidate was absent or failed the first attempt of qualifier exam

There are two attempts within any term currently. In every term, qualifier exams are conducted at the end of 4 weeks and at the end of 8 weeks.

Eligibility to apply for Reattempting Qualifier exam within the same term:

- A learner who became eligible for the hall ticket in the qualifier process of a term but was absent for the final exam
- failed in the first attempt

Such candidates do not have to repeat the assignments as they have already become eligible.

This re-attempt application form will open up immediately after the qualifier results are announced. The fee for this is as follows:

General Category / OBC Applicant	₹1500 re-attempt fee
SC / ST Category / PwD (>= 40% disability) Applicant	₹750 re-attempt fee
SC / ST Category Applicant who is ALSO PwD (>= 40% disability)	₹375 re-attempt fee

5.1.8 Candidates who did not become eligible for Qualifier exam

There are no limits on the number of times a candidate can attempt the qualifier process.

The candidate can attempt again the subsequent terms.

They have to pay the full fees as per the fee norms applicable for their category. (and additional exam facilitation fee in case of candidates outside India)

This will be considered like a fresh application and they have to redo the 4 weeks of course work and weekly graded assignments and become eligible to get the hall ticket for the qualifier exam

5.1.9 Options to register to courses once qualified

- Candidates who qualify in the first attempt within a term
 - have the option to register to courses and continue with completing them in the same term. In this case, qualifier score is treated as Quiz1 score to calculate the Final score.
 - Have the option to register to courses in the next 2 terms till when the qualifier score is valid.

- Candidates who qualify in the second attempt within a term can ONLY register from the subsequent term till the qualifier score is valid.

In a learner's first term immediately following the qualifier exam, the qualifier exam scores and assignment scores in the subjects registered will be considered as Quiz 1 score and first 4 assignment scores of the corresponding subjects.

5.2 JEE-based Entry into Foundation Level

There is a direct entry into the Foundation level of the program for students who have qualified for the JEE Advanced Exams. Currently the validity of this is for the 3 terms following the release of the JEE Advanced Eligibility list.

Candidates who qualified to appear for JEE Advanced 2022 can directly join our program in the Sep 2023/Jan 2024 Term and Candidates who qualified to appear for JEE Advanced 2023 can directly join our program in the Sep 2023/Jan 2024/May 2024/Sep 2024/Jan 2025 Terms

The process will be as follows:

Apply to the Qualifier process, saying Yes to the question on eligibility to JEE Advanced level. Upload a valid proof for the same.

- If the proof is found to be valid:
 - The candidate will be declared eligible to join the Foundational level courses.
 - They will be issued the admission letter.
 - Such candidates can directly register to courses in the foundation level with CCC as 4.
- If the proof document submitted is found to be not valid, the student will be moved into the category of non-JEE and will be treated as a regular entry candidate to the foundation level and have to go through the qualifier process.

6. Credit Clearing Capability

The value S used to determine the maximum number of courses that the learner is permitted to register in a term is calculated as shown below.

- Term 1: decided by qualifier marks
- Term 2: decided by average of marks of all courses taken in Term 1 in which the learner has passed
- Term n ($n > 2$): $M = \text{average marks of courses passed in the previous two terms Term } n-1 \text{ and Term } n-2$
(This will be calculated using marks of subjects in which the candidate has passed, not those which he/she has not passed or is not completed yet); ($n-1$ and $n-2$ terms must be terms where the learner status is Active - defined in section [11. Learner Life Cycle](#))

Marks M (as defined above)	Maximum number of courses that learner is permitted to register in any term
$0 \leq M < 50$	2
$50 \leq M < 70$	3
$M \geq 70$	4

The credit clearing capability CCC will be decided as follows:

- If a learner has passed at least one course in term $n-1$, then the CCC of term n will be calculated based on the marks as given in the above table.
- If a learner has failed all courses the learner has appeared for in term $n-1$, CCC of next term n will be 2.
- If a learner is absent for final exam of all courses, thus not completing their courses and not getting grades, CCC of next term = CCC of the learner's last term

CCC is kept as 4 by default for

- everyone who chooses to register to courses in the same term as the qualifier exam
- For all JEE candidates in the first term
- For everyone in the Diploma and Degree levels

7. Course registration - steps involved

Students who are continuing with the program will go through the following steps to sign up for the courses:

- Within the registration window, students will pick the courses they want to take in the coming term, with limiting criteria on total courses registered being their CCC i.e learners can register to maximum number of courses \leq their CCC.
- Students pick 2 cities among the choices provided for their quizzes and exams for that term.
 - They have the freedom to choose a different set of cities than the ones they opted for in the previous terms.
 - Also they can choose a different set of cities for every quiz/final exam while registering for the courses so that accordingly booking may be done with the Exam vendor for slots in these cities.
- Students can register to courses for which the prerequisite is completed. The pre-requisites are mentioned in [13.9 Prerequisite course requirements](#)
 - e.g. in order to sign up for Math-2, the learner must have cleared Math-1
- Students can take any course within a particular level of study but are not allowed to sign up for courses across levels.
 - Students who successfully complete all courses in the Foundation level will be eligible for admission to the Diploma level program.
 - Learners who successfully complete all courses in the Foundation and diploma programme will be eligible for admission to the degree level, if they satisfy the prescribed/regulatory criteria.
 - Students who complete 114 credits as per the norms will be eligible for the BSc degree and can continue onto the BS level.
- Learners pay only for the number of credits they are signing up for (online payment only).

8. Direct Entry into Diploma programme

For those who have the foundations to enter the Diploma programme directly and those who wish to do just the Diploma and exit with it, this is a pathway. It is primarily aimed at working professionals or learners who already possess the fundamentals taught in Year 1 of this programme to enter the Diploma level directly.

Entry - Into Diploma level
Exit - One or both Diplomas from IIT Madras

8.1 Eligibility to Apply

Students who have completed 2 years in any UG degree programme are permitted to apply to the diploma level through direct entry. Their second year marksheet or higher must be submitted as proof to qualify under this category.

8.2 Qualifying Process

1. A separate Direct Admission to Diploma (DAD) qualifier exam will be conducted for the Diploma in programming (DP) and Diploma in Data Science (DS).
2. These are conducted on the same date as the end term examinations of the IITM BS DS program. Hence these are conducted three times a year.

3. Any candidate crossing the cut off marks defined below will be eligible to enter the Diploma Programme corresponding to the qualifier attempted and register to the courses.
4. There will be no limit on the number of attempts by any candidate for direct entry, though the recommendation would be that if they do not pass the qualifier, they attempt through the foundation level.
5. The qualifier for DAD-DP will be a 3 hr exam, subjects being English, Aptitude and 6 weeks of Maths 1. Students have to study Computational Thinking, Introduction to Python and then move on to the Programming Diploma subjects.
6. The qualifier exam for the DAD-DS will be a 4 hr exam, with subjects being English, Maths 1, Statistics 1 and Python programming. Students have to start with Maths 2 and Statistics 2 and then continue with subjects in the Data Science diploma.

Students who have **completed** the Diploma in Data Science by Direct admission are directly eligible to also pursue the Diploma in Programming, if they wish to, without attempting the qualifier exam for this.

But students who complete the Diploma in Programming and wish to pursue the Diploma in Data Science have to appear for the qualifier for DS as they would not have studied Statistics 1 and Maths 1 as part of course work.

	Fees for the DAD qualifer exam	Minimum required Qualifier Exam Score in each subject	Cut off marks required in DAD Qualifier exam
GEN / OBC-CL	Rs 6000/-	40%	50/100
SC/ST/PwD	Rs 3000/-	30%	40/100
SC/ST AND PwD	Rs 1500/-	30%	40/100
OBC-NCL, EWS	Rs 6000/-	35%	45/100

9. Credit Transfer

9.1 Credit Transfer for NPTEL Courses

The following process is to be followed for credit transfer from NPTEL:

- a. An NPTEL course of duration 4/8/12 weeks carries credit equivalence of 1/2/3 credits in the BS degree program.
- b. The learner must register for the NPTEL exam using the @ds.study.iitm.ac.in Email ID.
- c. The learner has to register for NPTEL exams, pay the exam fee, and complete the NPTEL course.
- d. An NPTEL course can be transferred for credit only once and only to one program. The learner has to give an undertaking that they are submitting this course for credit transfer only to the IITM BS Degree program.
- e. The NPTEL courses will be added in PASS/FAIL mode and counted towards the credits with no letter grade and will not be included in the CGPA calculation.
- f. The fee for credit transfer from NPTEL courses is fixed as Rs 1000/- per credit. Hence, Rs 1000/-, Rs 2000/-, Rs 3000/- should be remitted as fees if a learner opts for credit transfer from NPTEL courses of duration 4/8/12 weeks. This fee is to be paid to the BS degree program, and is separate from the fee to be paid to NPTEL to complete the course.
- g. The learner can complete NPTEL courses any time after joining the Foundation Level (using the official IITM email) and apply for the course credit transfer in the BSc/BS levels.

- h. Refer the below table to know which term NPTEL courses can be transferred to which term in BS
- i. Students are required to pay the RKA fee if they are only doing a credit transfer in a term.

NPTEL courses completed in below term	Credit Transfer to BS Program in Term
January	September
July	January

	Pass/Fail OR Grade?	Counted towards credits	Counted for CGPA Calc	Fee	When can you join NPTEL?	When can you claim credit?
NPTEL	Certified	Yes	No	Rs 1000/- per credit - pay to BS (apart from NPTEL exam fees on SWAYAM portal)	any time after joining the Foundation Level (using the official IITM email id)	apply for the course credit transfer in the BSc/BS levels.

Table 2: SWAYAM NPTEL Courses Applicable for Department/Free Electives

The NPTEL courses given in the below can be credited at the BSc level. Any course can be credited only once in this programme. Also, the same NPTEL course cannot be credited twice - within your college for another academic programme and this BSc programme. It should be credited only in either of the above.

SWAYAM NPTEL Approved Dep/Free Elective course list:

https://docs.google.com/spreadsheets/d/e/2PACX-1vSJXV0JECyoQvgWvBIVxO13G0KRm5a1qNCRBa7rAw8GDY4e0cfm1KiVCwlgs_ed80ObtzQ1rfx_JWIR/pu/gid=399341609&single=true

Note that the list of courses is subject to periodic revision.

Table 3: SWAYAM NPTEL courses Applicable under HS/MG category for crediting in the BS level

Upto a maximum of 4 credits can be credited under the HM category in the BS degree level, which can be done from NPTEL or courses within the program.

(Refer [Credit Transfer for NPTEL Courses](#))

SWAYAM NPTEL Approved HS/MG course list:

https://docs.google.com/spreadsheets/d/e/2PACX-1vSJXV0JECyoQvgWvBIVxO13G0KRm5a1qNCRBa7rAw8GDY4e0cfm1KiVCwlgs_ed80ObtzQ1rfx_JWIR/r/gid=1418834182&single=true

Note that the list of courses is subject to periodic revision. From the NPTEL course URL, please select the SWAYAM Certification courses. Only these are eligible for Credit Transfer

9.2 Credit Transfer from On campus courses

(**This will be in effect from January 2024**)

- The on campus courses are offered by the participating institutes (like IITM,IITGn,IITPalakkad,CMI,IIT Ropar,IIITH) for the respective semester.
- The courses offered by the respective institutes will be collated by the IITMBS Degree team and the students will be informed on the same.
- Students who have completed the foundation and the 2 diplomas and have cgpa of ≥ 8 will be eligible to earn credits from campus courses.
- IITM BS students can apply to courses they are interested in and their acceptance will be based on the availability of seats for the course.
- Students can choose a maximum of 4 courses from the same institute as the students have to travel to the respective campus and they have to study in person.
- A maximum of 24 credits can be earned from any on campus courses.
- 24 Graded [from on campus courses of IITM], 24 non graded credits allowed [apprenticeship, other institute, NPTEL]. MS (approve / reject) 28 credits [Theory (16 credits) + Apprenticeship (12 credits)] allowed.
- 3 campus credits (only from IITM) = 1 BS credit.
- IITM Campus courses will be calculated towards CGPA , while other campus courses will be only for credit transfer purposes.
- The maximum number of credits that can be taken at the BSc level will be 8. These credits are to be obtained from the Engineering, Science or Management departments.
- Students who have completed 114 credits in the IITM BS program and completed the BSc level with a cgpa of ≥ 8 will be permitted to credit 24-x credits at the BS level where x is the number of credits they have earned in the BSc level from IITM campus courses. A maximum of 8 credits can be transferred from the HS category in the BS level, including the HS category credits earned through NPTEL.
- The fees for transferring the credits from each on-campus course will be Rs 2500/- per credit of IITM BS program. The fee to be paid to the institute will be apart from this and will be as per the institute norms.

- Students will have to attend the class in person unless a hybrid mode of accessing the classes is available. The on-campus courses credited by the BS students will be listed in the transcript along with the corresponding grades. The credits transferred from the on-campus courses into the BS program will be counted towards the CGPA of the student.

9.3 Comprehensive Exam courses

2 new 2-credit courses (Level 4) introduced as Electives in the degree level

1. **BSDA4002 Comprehensive Exam - Data Science & Artificial Intelligence (BD)**
 - a. write the GATE-DA exam
 - b. are in the top 1 percent of all students who appeared in the GATE-DA paper that year
 - c. can credit this course by submitting the proof of the Rank they have earned
2. **BSCS4009 Comprehensive Exam - Computer Science & Information Technology (BP)**
 - a. write the GATE-CS exam
 - b. are in the top 1 percent of all students who appeared in the GATE-CS paper that year
 - c. can credit this course by submitting the proof of the Rank they have earned

GATE Score will be valid for 2 years and these courses can be credited both in BSc and BS level.

9.4 Important Advisory for Credit Transfer Courses

We strongly recommend planning your credit transfer courses in the term prior to your level completion term. This is because result release dates often don't align with course registration timelines.

For instance, if you take a credit transfer course in Jan 2026, results will likely be published after May 2026 course registration. Consequently, credits will only be transferred in Sep 2026, resulting in a 2-term delay.

Please note that no intermediate credit transfers will be allowed.

Applicable for the student who completed 142 credits:

Once a student completes 142 credits in term X and has not started any CGPA or credit-earning courses in or before Term X, they will not be permitted to register any further in the program and their BS degree certificate will be processed.

Case 2: If a student completes 142 credits in Term X and has started any CGPA or credit-earning courses in or before Term X, they will have two options:

Case 2a: If the student chooses to complete the BS in term X and receive the certificate, the CGPA or credit-earning courses will not be listed on the BS transcript.

Case 2b: If the student opts to receive the BS certificate only when the additional components such as apprenticeship or

other campus courses are completed, then the BS transcript will include the credits for these also and the BS certificate will be generated after this.

Note: IITM Campus Courses are counted towards CGPA while apprenticeships and on-campus courses from other institutes are counted only for credits and not CGPA.

Upgradation from Online BS in Data Science and Applications to MS by research in Data Science & Artificial Intelligence

- Students with a CGPA \geq 8.0, upon completion of core courses at the degree level of the BS program(at least 106 credits)shall be eligible to apply for the opportunity to complete their remaining credits at the Department of DSAI,IIT Madras and continue for an MS 9by research)degree.
- The BS program team will collate the applications and share the list of eligible candidates with the Department of DSAI.
- The Department of DSAI will screen the applications(using a written test,interview,or both) and shortlisted qualified candidates for this program.
- Selected candidates can complete the BS level (28 credits)by taking courses and completing an 8-month research project (counted under the 12-credit apprenticeship) at the Department of DSAI,IIT Madras.
- Students who complete the BS level credits with a CGPA \geq 8.0 from campus courses/projects shall continue for the MS(by research)degrees at the Department of DSAI,IIT Madras.
- Students who complete the BS level credits with a CGPA <8.0 from campus courses/projects shall not be upgraded to the MS(by research)degree. The credits earned shall be transferred back to the BS program. Such students may apply for the MS(by research)program by clearing the GATE exam.

10. Learner Life Cycle

Once a learner clears the qualifier, he/she will be eligible to register for the Foundation level. Using their personal email id, they register to as many courses as permitted by CCC and make the payment. After approval of the uploaded documents, the learner is given a roll_number@ds.study.iitm.ac.in email id.

Henceforth all interactions on the portal right from login to accessing the learner dashboard and courses will be via this email id.

There will be 5 statuses for any learner in the programme : On the rolls/Active, On Academic Probation, Struck off the rolls, Alumnus, Quit the programme

- **On the rolls/Active** - When a learner is registered in any term for one or more courses after paying the course fees, the status will be "On the rolls" or Active.
- **On academic probation/Not registering to any course in a term:**

After joining the programme, a learner may skip up to 2 terms consecutively without taking any courses. In the two terms where the learner does not register for any course, the learner status will be marked as "On Academic Probation". The learner email ID will still be kept alive while the learner is on academic probation.

- The learner can actively inform us about not registering to courses by paying the "Registration keep alive fee (RKA)" of Rs 1000/- per term. In case of registering to courses in the next term, the learners have to only pay the course fees.
- The learner may not pay the RKA and have it as pending to be paid. Pending RKA will include 10% extra over regular RKA when re-registering back.
 - To register to courses in the next term if not paid the RKA: The learner will have to pay the pending dues = (which will be Rs 1100/- or Rs 2200/- (Rs 1000 RKA +10%

as penalty for each term where no courses are registered). The learner has to select the courses and pay the course fees. Once they do this, the learner status is changed to "On the rolls".

- **Struck off the rolls:** If a learner with status "On Academic Probation" for 2 consecutive terms does not register for courses in the next term too, the learner's status is changed to "Struck off the rolls". The official email id is suspended.
 - Once struck off the rolls, to reactivate the registration, they will have to apply through a separate process as defined:
 - If the RKA for the previous 3 terms has already been paid, they have to request for reactivating the email id on payment of Re-admission fee of Rs 2500/- . Once done, they can register for the courses in the upcoming term.
 - If the RKA for the previous 3 terms has not been paid, the learner has to apply to activate his/her account by paying the pending dues which will be Rs 5800/- = Rs 2500 (Readmission fee) + Rs 3300/- (Rs 1000 RKA x 3terms+Rs 300 (10% as penalty)). On receipt of the payment, the official email id is activated again and they are permitted to register using this id. Once they do this, the status is changed to "On the rolls".
 - Any learner who is struck off the rolls 2 times, is removed from the programme.
- **Quitting the programme:** There will also be an option inside the candidate dashboard which says "I quit the programme". Once the learner applies for this midway through a level, we suspend the official email account and activate the personal email account to access the dashboard. No reactivation for continuing the program is possible.
- **Alumnus:** Learners who complete the BSc level / BS level and quit the program, at the end of it, we again suspend the official email id and activate the personal email account to access the dashboard. Their status will be changed to "Alumnus".

Students completing the foundation or diploma level and quitting the programme will have status as "FL certified" and "DS certified"/"DP certified"/"Both diplomas certified" but will not be awarded the Alumnus status.

11. Timeline for original certificate:

11.1 Exit form window and senate date :

Senate approval is required before the original certificate can be generated. IIT Madras Senate meetings are held three to four times a year. Please refer to the timeline below for the certificate issue date.

Note: Students who have completed the BSc and BS degree and wish to take their original certificate have to mandatorily register with the IITM alumni association, pay the fees of Rs 6000/- and confirm to the BS team. Only after this step is completed will the original certificate be processed.

Next Exit form Open	Exit form closure	Senate date	Certificate Processing Timeline (Tentative)
June 15 2025	June 30 2025	Sep 12 2025	Dec 31 2025
Sep 15 2025	Sep 30 2025	Nov 7 2025	Feb 27 2026

Important Points to be remembered:

Original certificate will be processed only if the below criteria is satisfied.

- a. Required credits must be completed with all the Mandatory courses in Degree Level.

- b. Students must complete a minimum of 3 years (9 terms) for a B.Sc. degree and 4 years (12 terms) for a B.S. degree, starting from their first term in the program.*
- c. Exit form has to be mandatorily filled by the student; a professional photograph with a white/blue background and the Class X or XII certificate should be uploaded in the form. No other documents are acceptable.

***Example for Term Completion:**

21f1 students - will complete 4 years in 24f3 (end of the Sep Term) - BS Certificates can be processed if a & b above are satisfied from Jan 2025 onwards.

21f3 students - will complete 4 years in 25f2 (at the end May Term) - hence OC shall be processed at the end of 25f2 only - which will be after September 2025.

**Same applies for BSc with 3 years completion criteria.

Applicable only for BSc and BS completed students - Alumni card

For students exiting the program with a B.Sc. or B.S. degree, an IITM Alumni Card is mandatory.

After you submit your exit form, we will verify your details and send you the alumni registration process. This must be completed to process your original certificates.

A fee of Rs. 6000 + GST is required for the Alumni Card registration.

Once your registration is complete, we will process your Alumni Card along with your original certificates. They will be dispatched via post or handed over to you, based on the delivery method you selected in the exit form.

11.2 Photo Collection for Final certificate:

Students must submit a formally dressed photograph for their final certificate during their first term in the degree program. Details regarding the photo submission will be provided by the program team.

12. Alumni Details

[Updated on 19-05-2025]

12.1 Eligibility and Payment

- Only Degree Level students who have completed all the credit requirements for the BSc / BS levels are eligible to apply for an IITM Alumni card.
- Once the credit requirements are verified, students will be notified to register in the IIT Madras Alumni Association (IITMAA) portal.
- A one-time Payment of Rs. 7080 has to be made to IITMAA - <https://iitmaa.org/> as a processing fee to avail the alum benefits.
- The above fee will be collected as follows: When a student advances to the Degree Level, 50% to be paid in the first term and 50% in the following term.
- After completing your registration, please allow at least 30 days for your alumni card to be delivered to your address, and subsequently, expect 2-3 weeks to gain access to the IITMAA website.

12.2 Alum Card and its Benefits :

12.2.1 Alum Card Benefits

The IITM BS alumni card serves as the official identification for alumni of IIT Madras, symbolizing their affiliation with the institute and instilling a sense of pride.

12.2.2 Importance of the Alumni Card

The alumni card is essential for various purposes, including:

1. **Access to IITM Campus:** Required for entry whenever needed.
2. **Guest House Booking:** Necessary for booking the Taramani Guest House.
3. **Transcript Applications:** Required to apply for your academic transcript.
4. **Library Membership:** Needed to apply for library membership and access library facilities.
5. **Gymkhana Membership:** Required to apply for Gymkhana membership to utilize its facilities.
6. **Swimming Pool Membership:** Necessary for applying for swimming pool membership.

12.2.3 Exclusive Benefits

Having an alumni card grants access to numerous programs and benefits, such as:

1. **Participation in Free Programs:**
 - a. Mentor in CLIC (Career and Life Coaching for Students)
 - b. Mentor in YAARI
 - c. Lifelong Learning Sessions
 - d. WE CARE Events
 - e. GURU Talks
 - f. Alumni Expert Series
 - g. Alumni Discussion Groups
2. **Voting Rights:** Eligible to vote in IITMAA elections.
3. **Discounts and Offers:**
 - a. Discounts from alumni companies
 - b. Discounts from IITMAA business sponsorships
4. **Job Portal Access:** Utilize the job portal for career opportunities.
5. **Volunteer Opportunities:** Get involved in various initiatives.
6. **Membership in IITMAA EC:** Be a part of the IITMAA Executive Committee.

12.2.4 Event Participation

The alumni card also allows participation in various events and programs, including:

1. **Travel Opportunities:** Join IITMAA holidays around the world.
2. **Reunions:** Attend reunions on campus or at various locations.
3. **Global Chapter Events:** Participate in events organized by global chapters.

12.2.5 Additional Benefits

1. **Group Insurance Policies:** Enroll in group insurance plans.
2. **Discounts at IITM Gift Shop:** Enjoy discounts when shopping at the IITM gift shop.

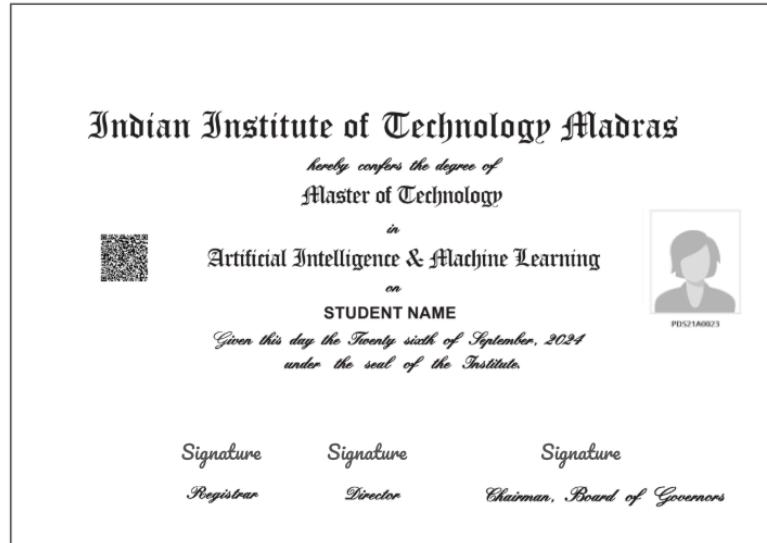
This comprehensive list underscores the significance of obtaining and maintaining your IITMAA alumni card, ensuring you stay connected with the institute and fellow alumni while enjoying numerous benefits.

12.3 Discourse Forum Access

Access to the Discourse Discussion Forum has been enabled for alumni students. Students can update their current email to their Alumnus Email and continue using their existing accounts.

13. Design of certificates for the 4 levels of the program

The design has been finalised for the 4 levels of certificates, as shown on the website.



Indian Institute of Technology Madras



hereby confers the degree of
Bachelor of Science [B.S.]

in

Data Science and Applications

on

NAME OF LEARNER



PDS21A0023

Given this day the Twentyfourth of July 2024
under the seal of the Institute.



Signature

Registrar

Signature

Director

Signature

Chairman, Board of Governors

Indian Institute of Technology Madras

hereby confers the degree of
Bachelor of Science [B.Sc.]

in

Programming and Data Science

NAME OF LEARNER



PDS21A0023

Given this day the Twentyfourth of July 2024
under the seal of the Institute.



Signature

Registrar

Signature

Director

Signature

Chairman, Board of Governors

Indian Institute of Technology Madras

hereby confers the
Diploma in Programming

on

NAME OF LEARNER



Given this day the Twelfth of September, 2022
under the seal of the Institute



Signature
Registrar

Signature
Director

Signature
Chairman, Board of Governors

Indian Institute of Technology Madras

hereby confers the
Diploma in Data Science

on

NAME OF LEARNER



Given this day the Twelfth of September, 2022
under the seal of the Institute



Signature
Registrar

Signature
Director

Signature
Chairman, Board of Governors



Design for provisional certificates:



14 Academic Documents for students

14.1 Types of documents

There will be 2 types of documents that will be made available automatically.

1. Term wise Progress card

This document will list all the courses taken by the learner term wise.

The values for every course will be course code, course name, level, grade obtained.

Note that the transcript will show all attempts and grades obtained in each of the attempts.

2. Grade Card

This will have the courses at each level listed only once. The best score obtained among all attempts for each course is what will be shown here.

GPA will be calculated for the courses in a particular term of the programme.

$$GPA = \frac{\sum_i (GP_i * Ci)}{\sum Ci}$$

Where GP = grade point of a course and Ci is the number of credits assigned to that course and $\sum Ci$ is the total number of credits of all courses in the term, including those with U or W grades.

The CGPA will also be computed for all unique courses completed until this point in time with the best grade being considered in case a course is attempted multiple times.

14.2 Procedure to Apply for Official Transcript & Bonafide Certificate

Students who are interested in applying for a transcript/bonafide certificate have to follow these steps. Note that these certificates will be issued every Thursday. Students have to plan suitably and contact us.

Please refer the link to know the criteria for official documents given to students:

https://docs.google.com/document/d/e/2PACX-1vQnn2cFan5BqTTAByCogtue-0XSmFXQPT91bADDL_i33tHMh8C0ZJepvFBwze4E5zJbGiBMdQa59VeT/pub

14.3 Policy on Advanced Certificate for Diploma Level Students

[Updated on Jul 18, 2025]

14.3.1 Policy on Advanced Certificate

To address the situation where Diploma-level students exit the program without completing their projects and thus receive no certification for their completed coursework, we are now offering an "**Advanced Certificate**" for those who successfully complete the theoretical components of the Diploma.

The Advanced Certificate will be given to those Students who are at the Diploma level and have completed all six theory courses in either or both Diplomas, but have completed only one of the two required projects (or have both projects pending).The certificate will be provided to all the eligible students.

The Advanced Certificate will be given by default to ALL students who complete the required theory courses at the Diploma level. The Advanced Certificate will be made available in the Student Dashboard.

14.3.2 The Advanced Certificate will be awarded as:

- **Diploma in Programming** - Advanced Certificate in Programming and Application Development
- **Diploma in Data Science** - Advanced Certificate in Machine Learning and Data Science

14.3.3 Eligibility Criteria

1. Students who have completed all 6 theory courses of the Diploma in Programming, with one or both projects pending, will be awarded the **Advanced Certificate in Programming and Application Development**.
2. Students who have completed all 6 theory courses of the Diploma in Data Science, with one or both projects pending, will be awarded the **Advanced Certificate in Machine Learning and Data Science**.

14.3.4 Sample Certificate :

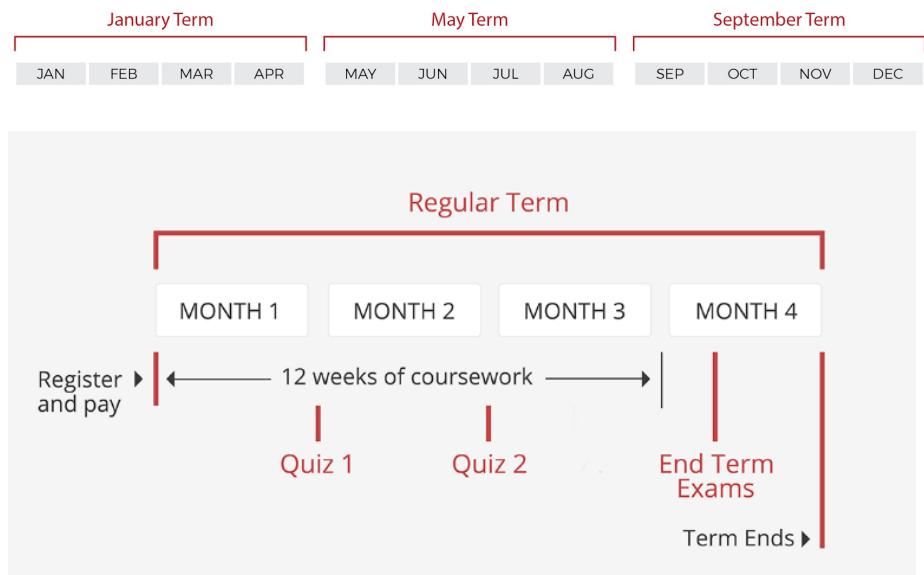


15. Academic aspects

15.1 Academic calendar

1. There will be 3 terms every year - Jan-Apr, May-Aug and Sep-Dec.
2. All the foundation, diploma level courses, the mandatory courses of the BSc level will be offered in every term.

Three Terms a Year



* While 36 months (3 years/9 terms) is time permitted for completion of any level, 96 months (8 years/24 terms) is the time permitted for the entire programme.

For Project:

Category	Payment	Category Waiver	Grade
New Registration	2500	Yes	Actual grade
Fee for Level 1 or 2 reattempt	1000	No	Actual grade
If the project is not completed in the registered term - the fee is retained for the subsequent term, grade will be marked as I. If the project is not completed in the second term also, then the registration becomes invalid, grade will be marked as U and the student has to pay the full fees again.	2500	Yes	I or U
If the student fails in the project, grade awarded will be U and Student has to redo the project by registering to the project by paying the full fees.	2500	Yes	U
If the submission is found to be Plagiarized, a. Student maybe subjected to disciplinary action b. Student has to redo the project by registering to the project by paying the full fees.	2500	Yes	U

15.2 Course structure suitable for online delivery

All courses of 4 credits will be of duration 12 weeks. The recorded content which is released every week will be for a total of about 2-4 hours, split into multiple lectures which includes the theory and tutorial videos. All videos are copyrighted to IIT Madras but will be available on YouTube as a public playlist for anyone to access and view. Self test assessments for every video lecture, a practice assignment for the week with solutions will also be released apart from text transcripts and any related notes. The weekly graded assignment will also be released along with the above content.

15.3 Evaluation and grading of courses in every term

Each course has 3 types of assessments - online weekly assignments, monthly in-person proctored quizzes and an in-person end term exam.

1. Online assignments:

- A 12 week course will have one or more weekly assignments to be submitted online within the due date specified.
- The average score of the best 5 out of the first 7 weekly assignments given during the course run should be $\geq 40/100$ to be eligible to write the final exam and get the hall ticket for the same.
- This will also contribute to the Final score and course grade. (Score in any unattempted assignment will be counted as 0).
- May change from course to course - check the grading document for actual details

2. 2 proctored Quizzes - to be attempted in person in the city chosen

Two quizzes will be conducted at the end of Weeks 4 and 8 based on the content of Weeks 1-4 and 1-8 respectively.

- Will be a single session exam with 4 hrs to attempt 4 subjects, 3 hrs to attempt 3 subjects and 2 hrs to attempt 2 or 1 subject.
- The Qualifier score will be counted as Quiz 1 score for the courses registered in the Foundation level only in the subsequent term of the qualifier exam, unless the candidate attempts Quiz 1 again in which case the better of the 2 scores will be used for calculations.
- The score of a quiz not attempted will be taken as 0. No make-up quiz will be provided.
- At least one of the 2 quizzes has to be mandatorily attended by the candidate else he/she will not be eligible to write the final exam. (check grading document for changes)

3. Final end term exam at the end of the course

- At the end of a term, there will be an end term exam of 1.5 hours duration for each course. (This will ensure exams can be conducted only on Sundays and exams for 4 courses completed in 2 sessions of 3 hrs each throughout the program.)
- Eligibility to write the End sem exam: Pls check the grading document for details.
- The final exam score accounts for 50% of the Total Course Score T - called End Semester Score (E)

Exam City Details (we have added few new cities from Sept 2024 term):

<https://docs.google.com/spreadsheets/d/e/2PACX-1vT6KKXyQildD7sUVpinTd9oW1dpaDhkm3cq1b2RM5wqGNHrComOQbXR3C9jh14arlMxhnxc9jNUbC8O/>

15.4 Exam Center Policy

[Updated on Jul 15, 2025]

- For Students Appearing for Exams Within India**
Students must report only to the **exam center** assigned to them, as mentioned in their hall ticket.
Reporting to any center other than the assigned one is strictly not permitted. Students arriving at an unauthorized center will not be allowed to enter or appear for the exam under any circumstances .
- For Students Appearing from Outside India (Remote Proctoring)**
Students appearing for the exam from outside India via remote proctoring must **verify** their location during the verification process.
If a student **fails to declare** that they are in India or **misrepresents their location**, they **will not be allowed to take the exam** and the incident will be treated as a **case of malpractice**.

15.5 Exam Date Clashes between NPTEL, IITM's non-campus BS programs, and web-enabled MTech programs

[Updated on Jul 18, 2025]

The exam dates for IITM's non-campus BS programs, web-enabled MTech programs, and some NPTEL courses will fall on the same day. It is solely your responsibility to ensure that there are no exam date clashes before registering for any additional courses or programs. IITM CODE Office will not be responsible for making any special arrangements to resolve such conflicts.

15.6 Pass criteria for each course

Total Course Score (T) will be the sum of all assessment components in every course as defined in the Grading document of that term.

A candidate is deemed to have passed a course IF Total Course Score (T) $\geq 40/100$

This criteria is the same for all learners in the course.

An absolute grading system, as described in the following table, will be followed:

Condition satisfied by 'T' - Total Course Score (Out Of 100)	Status	Letter Grade	Grade point
(T ≥ 90)	Pass	S	10
(90 > T ≥ 80)	Pass	A	9
(80 > T ≥ 70)	Pass	B	8
(70 > T ≥ 60)	Pass	C	7
(60 > T ≥ 50)	Pass	D	6
(50 > T ≥ 40)	Pass	E	4
(T < 40)	Fail	U	0
Weekly average assignment score <40/100 or 0 quizzes attended - (Not eligible to write the	Fail	WA/WQ	0

	final exam)		
Complete ET alone in next term; OPPE will NOT be scheduled. GA, quiz and OPPE marks will be carried over OR Repeat the entire course	Incomplete (Absent in ET alone)	I	-
Complete ET and OPE in next term, Both oppes will be scheduled. GA and quiz marks will be carried over OR Repeat the entire course	Incomplete (Absent in both ET & OPPE)	I_BOTH	-
Complete OPE alone in next term, Both oppes will be scheduled. GA, quiz and ET marks will be carried over OR Repeat the entire course	Incomplete (Absent/fail in OPPE)	I_OP	-

15.7 Repeating a course

1. For improvement

[Updated on Aug 28,2025]

As per the new policy, the students can improve the grades obtained in courses of a level as long as they are within the same level and have not progressed to the next level. For eg: if a student completes the 8 courses of the foundation level and wishes to improve any course grade, they have to do it in the terms that are available within the maximum permissible terms. The student will not be allowed to take any foundation level improvement course once they start the Diploma Level.

The cgpa will be frozen once they move to a new level.

The fee for repeating the course for improvement will be twice the regular course fee and the learner will have to submit all the weekly assignments, appear for the quizzes and final exams. The highest score amongst all attempts for a course will be used for calculating the CGPA.

2. If learner was not eligible to attempt the end term exam (grade=WA/WQ) or if the learner did not pass the course (Grade = U)

If average assignment score < 40/100 or no quiz attended or T<40/100, the learner has to repeat the entire course. This includes submission of assignments and redoing all the subsequent quizzes and the end term exam. Fees for repeating the course is the same as the course fees.

3. If the learner was absent for the final exam alone (grade = I):

The learner has 2 options:

- a. Reappear for the final term exam - Makeup exam: They can attend only the end term exam whenever it is conducted in the subsequent term.
 - The fee to repeat an end term exam will be Rs.1000 for each course of the foundational level and Rs. 2000 for each course of the diploma / degree levels.
 - If the learner reattempts the course in the immediate next term, then the average Quiz Score Q will be carried over and the learner does not have to resubmit the quizzes or the assignments.
 - If the learner wishes to skip the immediate next term and attempt the course in subsequent terms, then the entire course

will have to be repeated including the weekly assignments and quizzes.

- A learner can reappear for the makeup exam only once. If the learner misses the makeup exam, then the learner has to repeat the entire course in the term thereafter, by paying the full course fees and repeating all assignments, invigilated quizzes and the end term exam.
- b. Repeat the entire course: They can choose to repeat the entire course.
 - The fee to repeat the course will be the same as the regular course fees.
 - The learner must complete all assignments, invigilated quizzes and the end term exam.
 - Registering to this course will be counted as one of the courses permitted as per the [CCC](#) of the learner.

Note: Learners repeating a course for any reason must do so within the time and term limits:

- Each level must be completed within 36 months (3 years / 9 terms).
- The entire programme must be completed within 96 months (8 years / 24 terms).

15.7.1 Registering for Courses: Term 2 Onwards

- Maximum number of final exams (full course+makeup exams) <= 4
- Maximum number of new + repeat full course (if failed/absent if reqd/improvement) <= CCC
- Registering for new courses is subject to fulfilment of all rules and prerequisites.
- If a student passes all/some courses then CCC is calculated on the average of passed courses.
- If a student fails all courses, then CCC is set to 2.
- If a student is absent for all courses then CCC of the previous term is carried forward.
- Make up exam will be permitted as an option only once in the subsequent term.

15.7.2 Repeating a Course - WA, WQ, U or I grade

Applicable for courses with WA, WQ, U or I grade.
You can choose to repeat courses in a single term or across multiple terms. You can also register for new courses in the term. The total number of courses must be within the CCC limit. Learners with an Incomplete (I) grade in a course can take a Make Up Exam instead of repeating the course.

15.7.3 Repeating a Course for Improvement

Applicable for courses with A, B, C, D or E grade.
You can choose to repeat courses to improve the grade in the course. The highest grade will be recorded in the transcript. The total number of courses must be within the CCC limit. Course fee *Repeat for Improvement* courses will be double the normal fee.

[Updated on Aug 28th,2025]

As per the new policy Effective from **Jan 2026** - , It is proposed that students can improve the grades obtained in courses of a level as long as they are within the same level and have not progressed to the next level. For eg: if a student completes the 8 courses of the foundation level and wishes to improve any course grade, they have to do it in the terms that are available within the maximum permissible terms. The student will not be allowed to take any foundation level improvement course once they start the Diploma Level.

The cgpa will be frozen once they move to a new level.

15.7.4 Make Up Exams

Applicable for courses with I grade.

You can choose to take a Makeup Exam for a course with Incomplete (I) grade. Learners will only be required to reappear for the Final Exam for that course. The Makeup Exam does not count towards CCC, but a student can appear for a maximum of FOUR final exams in a term. If you have already registered for 4 courses, you do not have any more final exam slots available.

Note: The grading pattern for make-up exams will be as follows: the pattern used will be as per the formula used in the term the course work was done and not as per the term the makeup exam was taken.

Quick Reckoner Table

COURSE PASS STATUS	New Course Allowed?	Repeat Course?	Take Make Up Exam?	
Passed all	Yes			Not recommended but available
Failed any/all	Yes	Yes		
Absent for all final exams	Yes		Yes	
Passed + Absent	Yes		Yes	
Failed + Absent	Yes	Yes	Yes	

Repeating OPPE:

OPE1/OPE2	ET	T	Grade	Condition for OPPE/course reg	Foundation	Diploma
Absent	Absent	-	U	Repeat the entire course	Course Fee	Course Fee
Absent	Present	>=35	I	Complete OPE alone in next term, GA, quiz and ET marks will be carried over OR Repeat the entire course	1000	2000
				Repeat the entire course		
Present score< x/100	Present	>=40	I	Complete OPE alone in next term, GA, quiz and ET marks will be carried over OR Repeat the entire course	1000	2000
				Repeat the entire course		
	Absent	-	I	Repeat OPPE and ET OR Repeat Entire course	2000	4000
Present score> x/100	Present	>=40	Actual grade	PASS (depending on course criteria)	Course Fee	Course Fee
			U	Repeat entire course	Course Fee	Course Fee

Absent	-	I	Repeat ET alone OR Repeat Entire course	1000	2000
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- OPPE will not be applicable for the students who registered for repeating ET alone.
- ET will not be applicable for the students who registered for repeating OPPE alone.
- Students who registered for repeating OPPE & ET will have to appear for OPPE1, OPPE2 & ET.

Registered Category	OPPE
ET alone	No OPPE will be conducted
OPPE alone	Both OPPE will be conducted
ET + OPPE	Both OPPE will be conducted

15.8 Dropping a course (This is not applicable for the students who are continuing after qualifier in the same term)

Once the registration window closes in any term, adding courses will not be allowed. Dropping a course will be allowed within 4 weeks of the term start date and not beyond. Rs 2000 will be deducted if a Foundation level course is dropped and Rs 4000 will be deducted if a Diploma/Degree level course is dropped.

- a. If the learner decides to drop out of the programme completely using the "I quit the programme" option, the course fee paid minus the deduction will be refunded to the learner and the learner will be removed from the programme, cancelling his official email id access. The status will also be changed to "Quit the programme".
- b. If the learner drops one/a few of the courses registered to in a term, the refund will be made as given in the table below but the email id will be kept active so that he/she can continue with other ongoing courses and the programme. Status will be "Active".
- c. If the learner opts to drop all courses registered in a term, the refund will be done as per the table given below and the email id will be kept active so that the learner can come in and register in the next term. But this will be counted as a term with 0 courses. Status will be changed to "Academic probation".
- d. The fee receipt will be generated post these 4 weeks after term start when drop is permitted so that all the courses and fees are tallied and confirmed.
- e. Learners writing exams outside India would have paid Exam facilitation Fee while registering for the courses. For such learners:
 - i. If they drop from all courses in a term, 100% of the facilitation fee for Quiz 1 will be retained while 50% of the facilitation fee for quizzes 2 and final exam will be refunded.

Level	Paid	Retained by IITM as Admin charges	Refund
Foundation	4000	2000	2000
	2000	2000	0
	1000	2000	0

Diploma/Degree	10000	4000	6000
	5000	4000	1000
	2500	4000	0
Project Course	2500	500	2000

Please note, The amount to be refunded will be added to your student wallet and NOT refunded to the bank account. This amount can be used when you register for courses in the next term and deducted from the fees to be paid then.

16. Learning paths available

Here are some suggested learning paths...

1. Foundation course certificate
2. Diploma in Programming
3. Diploma in Data Science
4. Diploma in Programming and Data Science
5. BSc degree in Programming and Data Science

	Term	Foundation	Plan for One Diploma	Plan for Both the Diplomas	BSc Degree	BS Degree	Shortest Path for BSc Degree
Year 1	Term 1	3	1	1	2	2	4
	Term 2	2	2	2	3	3	4
	Term 3	3	2	2	3	3	4
Year 2	Term 1		2	2	3	3	4
	Term 2		1	2	2	2	4
	Term 3		2	2	2	2	4
Year 3	Term 1		1	1	3	3	4
	Term 2		1	2	3	3	3
	Term 3		2	1	2	2	
Year 4	Term 1			2	3	3	
	Term 2			2	2	2	
	Term 3			1	3	3	
Total Courses		8	14	20	31		31

16.1 Prerequisite course requirements

Foundation courses

Level	Course	Pre-req	Coreq
Foundation	Maths 1	-	-
	Statistics 1	-	-
	English 1	-	-
	CT	-	-
	Maths 2	Maths 1	
	Statistics 2	Statistics 1	Maths2
	English 2	English 1	
	Intro to		

A co-requisite for Statistics-2 is Maths-2. So either Maths-2 has to be done before statistics-2 or both can be taken together. Statistics-2 cannot be done without having done Maths-2.

All the 8 Foundation courses should be completed before the candidate can register to any Year 2 Diploma level course.

Diploma level courses

Suggested pathway to register and study Diploma level courses:

1. **Most aggressive pathway - completing in 4 terms -**
ONLY IF YOU ARE DOING THIS AS FULL TIME
AND NOTHING ELSE AND CAN SPEND **70 HRS PER WEEK** MINIMUM
2. **Comfortable pathway - 6 terms - 2 years :**
Suggested for students and working professionals doing this along with another degree or their job (40hrs/week)
3. **Those from non technical backgrounds, new to programming or have busy schedules,**
recommended to take 6 or 7 terms for the 2 diplomas.
4. Same sequence of courses are suggested if you are taking only the Diploma in programming or Diploma in DS separately too.

Maximum number of terms to complete both Diplomas: 12

7 Terms	Term1	Term2	Term3	Term4	Term5	Term6	Term7
A VERY COMFORTABLE PATH - RECOMMENDED FOR THOSE WHO STILL ARE SLOW ON CODING AND MATHS AND CAN TAKE TIME. FOUNDATION - 3 OR 4 TERMS, DIPLOMA - 7 TERMS, BSC+BS - 5 TERMS, SO TOTAL OF 16 TERMS OR 5 YEARS. VERY APT FOR WORKING PROFESSIONALS AND DUAL DEGREE STUDENTS	BDM Theory BDM Project SC 9c	DBMS PDSA MLF 8c	MAD 1 Theory MLF SC 8c	Mad 1 Project MLT 6c	Mad 2 Theory MLP 8c	Mad 2 Project BA 8c	Java TDS MLP Project 7c
6 Terms	Term1	Term2	Term3	Term4	Term5	Term6	Term7
VERY COMFORTABLE PATH - HIGHLY RECOMMENDED. FOUNDATION - 1 YEAR DIPLOMA - 2 YEARS BSC AND BS IN 1 YEAR AND 4/8 MONTHS PROGRAM COMPLETED IN 4 YEARS AND 1 TERM VERY APT FOR WORKING PROFESSIONALS AND STANDALONE/DUAL DEGREE STUDENTS	DBMS PDSA BDM Theory 8c	PDSA MLF BDM Project 10c	MAD 1 Theory SC BA 11c	Mad 1 Project MLT Java 10c	Mad 2 Theory MLP DL-Gen Ai Project 8c	MLP Project BDM DL-Gen Ai Theory 8c	Java TDS 7c
5 Terms	Term1	Term2	Term3	Term4	Term5	Term6	Term7
DECENT PACE - CAN BE MANAGED IF YOU ARE COMFORTABLE WITH PYTHON AND MATHS. NOT VERY HECTIC FOUNDATION - 2 OR 3 TERMS DIPLOMA - 5 TERMS BSC/BS - 4 TERMS FULL PROGRAM - 12 TERMS OR 4 YEARS CORRECT SPEED TO DO THE PROGRAM RECOMMENDED FOR STANDALONE STUDENTS	DBMS PDSA MAD1 Theory 12c	MLF MAD1 project MAD2 Theory 10c	BDM Theory MLT MAD2 Project 10c	BDM Project MLP SC 9c	BA MLP TDS 13c	Java	MLP Project
4 Terms	Term1	Term2	Term3	Term4	Term5	Term6	Term7
EXTREMELY HECTIC AND NOT RECOMMENDED UNLESS YOU ARE A FULL TIME STUDENT AND ARE VERY STRONG IN CODING AND MATHS. FOUNDATION - 2 OR 3 TERMS DIPLOMA - 4 TERMS BSC/BS IN 3 OR 4 TERMS PROGRAM COMPLETED IN 9 TERMS OR 3 YEARS	DBMS PDSA MLF 16c	BDM Theory MAD1 Theory MLT 14c	BDM Project MAD2 Theory MLP 12c	Java SC TDS 12c	Java	MLP Project	
Term1	Term2	Term3	Term4	Term5	Term6	Term7	Term8
DBMS PDSA MLF 16c	BDM Theory MAD1 Theory MLT 15c	MAD2 Theory MAD1 Project MLP 12c	MAD2 Project SC MLP Project 11c	TDS Java DL-Gen Ai Project	Java	DL-Gen Ai Project	

Course	Pre Requisite	Co Requisite
MLP	MLT	
MLT		MLF
App Dev 1 Project		APP Dev 1 Theory
App Dev 2 Theory		App Dev 1 - Project
DL - Gen AI Theory		MLP
DL - Gen AI Project		DL - Gen AI Theory

Even with a relaxed pathway, you should complete in a maximum of 7 or 8 terms.

The new rules for those entering Diploma Level from May 2024 onwards:

- Complete minimum of 3 courses and 1 project in every 3 terms, which means the
 - The slowest you can go is 3 courses and 1 project in 3 terms (1 year), 6 courses and 2 projects in 6 terms (2 years), 9 courses and 3 projects in 9 terms (3 years) and 12 courses and 4 projects in 12 terms (4 years).
- At the end of 3 terms, if you do not complete 3 courses and 1 project you will be given warning.
- At the end of 6/9/12 terms if you do not complete 6/9/12 courses and 2/3/4 projects, you will be removed from the program.

If you wish to do the Diploma in programming and Diploma in data science one after the other and not mix up the courses, here are the suggested pathways.

Diploma in Programming Separately				
	Term 1	Term 2	Term 3	Term 4
2 Terms	DBMS	App Dev 2 Th		
	App Dev 1 Th	App Dev 2 Proj		
	PDSA	SC		
	App Dev 1 proj	Java		
3 terms	DBMS	App Dev 1 Project	App Dev 2 Proj	
	App Dev 1 Theor	App Dev 2 Theory	Java	
		PDSA	SC	
4 terms	App Dev 1	App Dev 2	PDSA	Java
	DBMS	App Dev 1 project	App Dev 2 project	SC

DOING A SINGLE DIPLOMA (DS)					
2 Terms	Term 1	Term 2	Term 3	Term 4	
NOT RECOMMENDED UNLESS YOU HAVE SOME BACKGROUND AND CAN HANDLE THIS LOAD	MLF	MLP			
	MLT	BA			
	BDM	TDS			
	BDM project	MLP proj			
	MLF	MLP			
	MLT	DL GenAI Theory			
	BDM	MLP project			
	TDS	DL GenAI project			
3 Terms	Term 1	Term 2	Term 3	Term 4	
MODERATE PATHWAY - CAN BE TAKEN IF YOU ARE COMFORTABLE WITH PYHTON AND MATHS	BDM	BA	TDS		
	BDM Project	MLT	MLP		
	MLF		MLP project		
	MLF	MLP	MLP proj		
	MLT	DL GenAI Th	DL GenAI Proj		
		TDS	BDM		
Term 1		Term 2	Term 3	Term 4	
4 Terms	MLF	MLT	MLP	BA	
AND RELAXED PATHWAY - RECOMMENDED IF PLANING FOR ONLY ONE DIPLOMA EXIT OR DAD STUDENTS	BDM	BDM Project	TDS	MLP Project	
	MLF	MLP	MLP Project	TDS	
	MLT	BDM	DL GenAI Th	DL GenAI Proj	

Without completing all the 8 Foundation courses and the 12 Diploma level courses + 4 project courses, one cannot proceed to register for Year 3 Degree level courses.

Degree Level Courses:

Table 1: Department Core/Elective Courses

Course ID	Course Level	Course Name	Course Type	Prerequisite code	CoRequisite code	Credits	*Course offering is subject to registration number		
							Sep 2025	Jan 2026	May 2026
BSCS3001	DEGREE	Software Engineering	Core_BP			4	Y	Y	Y
BSCS3002	DEGREE	Software Testing	Core_BP	-	-	4	Y	Y	Y
BSCS3003	DEGREE	AI: Search Methods for Problem Solving	Core_BD	-	-	4	Y	Y	Y

BSCS3004	DEGREE	Deep Learning	Core_BD	-	-	4	Y	Y	Y
BSGN3001	DEGREE	Strategies for Professional Growth	Core_HM	-	-	4	Y	Y	Y
BSBT4001	L4_DEGREE	Algorithmic Thinking in Bioinformatics	BD/BP	-	-	4	N	Y	Y
BSBT4002	L4_DEGREE	Big Data and Biological Networks	BD/BP	-	-	4	N	Y	N
BSCS4001	L4_DEGREE	Data Visualization Design	BD	-	-	4	Y	N	Y
BSEE4001	L4_DEGREE	Speech Technology	BD	-	-	4	N	N	Y
BSMS4002	L4_DEGREE	Design Thinking for Data-Driven App Development	HM/BP	-	-	4	Y	N	Y
BSMS4001	L4_DEGREE	Industry 4.0	HM/BD	-	-	4	Y	Y	N
BSMS4003	L4_DEGREE	Financial Forensics	HM/BD	-	-	4	Y	N	N
BSMS3002	DEGREE	Market Research	HM	-	-	4	N	Y	Y
BSDA5001	L5_DEGREE	Introduction to Big Data	BD/BP	-	-	4	Y	Y	Y
BSCS4003	L4_DEGREE	Privacy & Security in Online Social Media	BD/BP	-	-	4	Y	N	Y
BSMA2001	DEGREE	Mathematical Thinking	SE			4	Y	N	N
BSMA3012	DEGREE	Linear Statistical Models	SE			4	Y	N	N
BSMA3014	DEGREE	Statistical Computing	SE			4	N	Y	N
BSCS4021	L4_DEGREE	Advanced Algorithms	BP			4	N	Y	N
BSCS3031	DEGREE	Computer Systems Design	BP		BSCS3005	4	Y	N	Y
BSCS4022	L4_DEGREE	Operating Systems	BP	BSCS3031		4	Y	Y	N
BSDA5007	L4_DEGREE	Reinforcement Learning	BD		BSCS3004	4	Y	Y	N
BSCS3005	DEGREE	Programming in C	BP			4	Y	Y	Y
BSCS4024	L4_DEGREE	Computer Networks	BP	BSCS3005		4	Y	Y	N
BSDA5005	L5_DEGREE	Introduction to Natural Language Processing (i-NLP)	BD			4	N	Y	N
BSDA5006	L5_DEGREE	Deep Learning for Computer Vision	BD			4	Y	N	N
BSDA5004	L5_DEGREE	Large Language Models	BD	BSCS3004		4	Y	N	Y
BSMS4023	L4_DEGREE	Game Theory and Strategy	HM/BD			4	Y	N	Y
BSMS3033	DEGREE	Managerial Economics	HM			4	N	Y	Y
BSMS3034	DEGREE	Corporate Finance	HM			4	Y	Y	N
BSDA5014	L5_DEGREE	ML Ops	BP			4	Y	N	Y
BSDA5002	L5_DEGREE	Mathematical Foundations of Generative AI	BD / BP			4	Y	N	Y
BSDA5003	L5_DEGREE	Algorithms for Data Science	BD			4	Y	N	Y
BSDA5013	L5_DEGREE	Deep Learning Practice	BD / BP	BSCS3004		4	Y	Y	Y

BSDA4001	L4_DEGREE	Data Science and AI Lab	BD	BSCS3004		4	Y	Y	Y
BSCS4010	L4_DEGREE	Application Development Lab	BP			4	Y	Y	Y
BSDA4002	GATE	Comprehensive Exam - Data Science & Artificial Intelligence	BD			2	Y	Y	Y
BSCS4009	GATE	Comprehensive Exam - Computer Science & Information Technology	BP			2	Y	Y	Y

Please note that L5_Degree courses are complex compared to Degree and L4_Degree courses. Course fee and credits are same as L4_Degree courses.

17. Changes in project grading (wef now) and Eligibility to enter the BSc Level (wef May 2024)

Here are two changes being effected with respect to project grading and eligibility to enter the degree level.

1. Project grading:

So far - students had to complete all feature requirements given for a project, pass the L1 viva and move onto the L2 viva and pass that too to get a pass grade.

Looking into the data we have, we understand that all students may not be equally proficient in the areas of programming, machine learning and business and excel in all 4 projects.

Hence the grading is being changed as follows:

MAD1, MAD2, MLP projects: WEF current term

- For MAD1 and MAD2 projects, when the submitted Application passes the check for Appdev, L1 viva will be scheduled.

For MLP project, if the cutoff is crossed in the Kaggle contest and the student declares that all the models have been completed, the L1 viva is scheduled.

- There are 2 cutoff marks that will be decided for the L1 level for each term:

a. Cutoff1: X, Cutoff2: Y;

b. $X < Y, X > 0$

- The L1 viva will be conducted and scoring will be done based on the rubrics defined for it. Based on the marks scored in L1 viva ($L1_S$), the following are the possibilities:

a. **If ($L1_S < X$):** Student has to **resubmit** the project. A few days are given for them to resubmit in the same term. If the second time also, $L1_S < X$, they will have to redo the project in the next term.

b. **If ($X \leq L1_S < Y$)**, then students are asked some additional questions for assessing their

knowledge and awarded D or E grade. Such students do not go in for L2 viva at all. They will have a pass grade.

- c. If $(L1_S \geq Y)$, L2 viva is scheduled for them.
 - i. If they pass the viva cutoff for L2, they get a grade including L1 and L2 scores.
 - ii. If they do not pass the L2 viva cutoff, they get one more chance at L2 viva.
 - iii. If they do not pass in the second attempt at L2 viva, they get an appropriate grade (D or E) based on their L1 performance alone.

BDM project evaluation

So far: The process has been identifying the business, collecting data, analysing and sharing their insights.

Going forward from Jan 2024:

Students will be allowed to web scrape data and analyse it, sharing the source from where the data was taken. The BDM team will outline the steps involved. The maximum grade that the student can earn in this case will be D.

Eligibility for entering degree level of the program: WEF May 2024

- For a student to progress to the degree level (BSc) of the Data Science and Applications program:
 - they must secure a CGPA of 6.0 or higher at the end of two diplomas (includes the courses in the foundation level and the diploma level and the projects)
 - AND a CGPA of 7.0 or higher in all the projects completed at the diploma level.
- These CGPA requirements are not applicable to students who exit the program with the diploma(s).
- Such students who exit the program with the diploma(s) without meeting either CGPA criteria will not be eligible for any certificates of academic achievements or prizes.
- Students can repeat the theory courses any number of times within the stipulated period for diploma level to improve the overall CGPA.
- Students who have overall CGPA of 6.0 or above and CGPA < 7.0 in projects, which prevents them from entering the degree level, will be given one additional opportunity to improve their project grades to earn the eligibility to progress to the degree level.
- Students who cannot improve their CGPA above the required cut-offs must exit the program with the diploma(s).
- This rule shall be applicable to all students entering the degree level (BSc) from the May 2024 term.

For those students who completed diplomas with less than 4 standalone projects (in Sep 2021/Jan 2022 terms projects were included in theory courses), whatever projects were done standalone will be counted for the average CGPA of 7.0. For example, if 2 projects were done as part of the theory and 2 projects standalone, then only the grades in the two standalone projects will be used to compute the project CGPA. The projects done as part of the theory courses will not be counted.

For those who do 4 standalone projects, eligibility to enter degree level is illustrated below with some examples:

P1	P2	P3	P4	Total points	Eligible to enter the degree level?

E	E	S	S	28	Yes
E	E	S	A	27	No
D	E	S	S/A/B	30/29/28	Yes
D	D	S/A/B	S/A/B	28-32	Yes
D	D	C	C	26	No

18. New Rules for Foundation & Diploma Level Completion

18.1 Foundation level checkpoints:

These conditions shall be applicable to the students admitted to the foundation level from May 2024. These are not applicable for students who have entered in Jan 2024 term or before that. But completing the foundation level in 9 terms is applicable for all.

Students will be removed from the program if they do not complete

- a. at least 4 courses within 4 terms.
- b. at least 6 courses within 6 terms.
- c. the 8 foundation courses within 9 terms.

The student will be issued warnings about insufficient progress and about complying with these conditions starting from term 3.

18.2 Change in CCC at the foundation level:

This is for ALL students in the foundation level.

Currently, the CCC is calculated based on the courses passed in the last 2 terms by the students and enforced too, deciding the number of courses that students can take in a given term in the Foundation Level.

In view of the conditions imposed above leading to exit from the program if not satisfied, it was proposed that the CCC will only be a recommendation and not enforced. This will enable students to make up for term breaks and meet the proposed course completion criteria.

18.3 Increasing the maximum number of terms for completing the diploma level

The Diploma level can now be completed in a maximum of 12 terms instead of 9 terms as has been the case till now. This extension of 12 terms as the maximum limit to complete the Diploma level shall be applied for all learners, starting from the first batch, who started the Diploma Level in September 2021.

The maximum duration for the BSc and BS levels shall remain unchanged at 9 terms. The total duration permissible for the BSc and BS degrees shall also remain at 6 and 8 years, respectively.

18.4 Checkpoints in the Diploma level

These conditions below shall be applicable to the students admitted to the Diploma level from May 2024. These are not applicable for students who have entered in Jan 2024 term or before that.

To ensure continuous progress and steer students towards completing courses on time, the following intermediate checkpoints were also proposed. The student must complete

- a. at least 3 courses and 1 project in the first 3 terms from starting the Diploma level - if not, they will be put on academic probation and given a warning.
- b. at least 6 courses and 2 projects in the first 6 terms from starting the Diploma level - if not, they will be removed from the program.
- c. at least 9 courses and 3 projects in the first 9 terms from starting the Diploma level - if not, they will be removed from the program.
- d. All 12 courses and 4 projects in 12 terms from starting the Diploma level - if not, they will be removed from the program

The student will be issued sufficient alerts and warnings about these checkpoints.

18.5 Improvement Term Limit

[Updated on Aug 28,2025]

As per the new policy from Jan 2026 Term, the students can improve the grades obtained in courses of a level as long as they are within the same level and have not progressed to the next level. For eg: if a student completes the 8 courses of the foundation level and wishes to improve any course grade, they have to do it in the terms that are available within the maximum permissible terms. The student will not be allowed to take any foundation level improvement course once they start the Diploma Level. **The cgpa will be frozen once they move to a new level.**

We don't recommend taking improvement courses in the Sep 2025 term itself.

19. Eligibility Criteria Prize

The Direct admission to the Diploma, where students exit with the Diploma, comprises 8 courses and 2 projects (35 credits).

Eligibility for Prizes:

1. Certificate of Merit

Awarded to students at 2 levels: completing Foundation+2 Diplomas (86 credits),

completing the BS degree (142 credits)

Criteria: CGPA between 9.00 and 9.50 at the end of Foundation+2 Diplomas or when graduating with BS.

2. Certificate of Academic Distinction

Awarded to students at 2 levels: completing Foundation+2 Diplomas (86 credits) or

completing the BS degree (142 credits)

Criteria: All students with CGPA greater than 9.50 at the end of Foundation+2 Diplomas or when graduating with BS.

3. Certificate of Academic Excellence

Awarded to students at 2 levels: completing Foundation+2 Diplomas (86 credits) or

completing the BS degree (142 credits)

Criteria: The students with the highest CGPA at the end of Foundation+2 Diplomas or when graduating with BS will be identified and awarded. The actual number of students will be decided by the Steering committee.

The students under the above three categories will be awarded a medal along with the certificate.

The following will be the process followed for identifying the students eligible for the awards:

- a. The list of students completing the foundation+2 diplomas or the BS degree in a calendar year January-December will be consolidated and considered to finalize the prizes.
- b. Certificates will be awarded for all the 3 categories (Certificate of Merit , Certificate of Academic Distinction ,

Certificate of Academic Excellence) with medals being given for the students for the respective category.

c. The students completing Diplomas through the Direct admission process will be considered as a separate category and will be eligible for prizes with medals being given for the students for the respective category.

Prize Eligibility Criteria for Improvement Courses

For the prizes awarded after the diploma level, we will consider the CGPA only till the term when the student completes the two diplomas. Improvements in foundational/diploma courses done after completion of both diplomas will not be considered for the diploma-level prizes. For example, if a student had repeated a foundation/diploma course for improvement in September 2023 but had completed both diplomas in May 2023, then the CGPA secured in May 2023 will be considered for diploma-level prize. Diploma-level prizes will not be given retrospectively.

Certificate of Merit and Distinction Policy

Students eligible for a Certificate of Merit or Distinction must maintain a clean academic and disciplinary record. Any instance of academic malpractice or disciplinary violation in a student's history will result in disqualification from receiving the certificate, irrespective of academic performance.

[Updated on April 14,2025]

20. Re Entry after Diploma/Degree Exit

[updated on May 16, 2025]

Policy on Rejoining IITM BS: Students Holding Original Senate-Sanctioned Diplomas/Degrees

20.1 Eligibility and Requirements for Re-admission Final Exams

To rejoin the IITM BS program and continue their studies, students who previously exited with an original certificate must take the final exams for specific subjects detailed in the table below. These subjects are determined by the certificate they hold and the level at which they wish to re-enroll.

Original Certificate taken and exited	Level they wish to join	Subjects for Mandatory Final Exams
Diploma in Programming	Diploma in Data Science	MAD2, PDSA
Diploma in Data Science	Diploma in programming	MLT, MLP
Both Diplomas	BSc level	MAD2, PDSA, MLT, MLP
BSc	BS level	Deep Learning (DL), Artificial Intelligence (AI), Software Engineering, Software Testing
BS	PG Diploma	Deep Learning (DL), Artificial Intelligence (AI), Software Engineering, Software Testing
PG Diploma (PGD)	MTech level	MLOps, Mathematical Foundations of GenAI, Algorithms for Data Science

20.2 Examination and Fee Structure

- **Exam Schedule:** Exams will be conducted on the scheduled final exam date of a term.
- **Passing Requirement:** To be eligible for continuation, students must appear for the final exam in all the subjects relevant to their readmission, as listed above.
- **Academic Continuation:**
 - Students may register for the next-level courses irrespective of their performance in the readmission exams. However, attendance is mandatory.
 - If a student scores less than 50% in any subject, that subject will be added to their academic load and treated as a pending course; Such courses will not be counted to the credits earned. The 50% cut-off is the same across all categories of students.
- **Exam Fee:** ₹5,000 per exam (irrespective of the number of subjects, be it 2/3/4)
 - A 50% fee waiver is applicable for SC/ST candidates and PwD candidates with over 40% disability.

20.3 Post-Readmission Academic and Administrative Processes

Upon readmission, the following policies apply:

- **Student Roll Number:** Remains unchanged from the student's original enrollment.
- **Progress Card and Grade Card**
 - Only courses undertaken after readmission will be listed in the progress and grade cards provided after readmission. The courses done that were counted towards the previous Original Certificate will not be listed in this.
 - Courses cleared through mandatory re-admission exams will be shown as completed but not counted for credits in the program.
- **The status called “Lateral Entry”** will be mentioned in both the Progress and Grade card to make it clear that the student had exited at some level with the Original Certificate and had chosen to re-enter at the next level.
- **Certificates**
 - **Provisional Certificate:** No changes in process

- **Original Certificate:** The previously issued Original Certificate need not be returned to the institute.

- **Time Limit and Term Break**

 - There is no restriction on when a student may apply for re-admission.

 - The duration of the term(s) between exit and re-entry will be excluded from the overall program time limit. After accounting for this exclusion, all other time limit constraints of the overall program apply.

 - A formal **Readmission Letter** will be issued to the student once the re-entry into the program is approved.

21. Pathways to get admission to Masters or Research programs at IITM

[Updated on April 12,2025]

The table below summarises the main differences between an MTech and an MS program.

	MTech	MS
Program type	Course and project-based	Research-based
Course load	Typically 10-12 courses & labs	5 courses
Project/Thesis	Well-defined time-bound project (typically 1 year)	Open-ended research-based thesis
Orientation	Industry-oriented	Research-oriented
Duration	2 years	Typically 2.5 to 3 years (varies by IITM/Guide's discretion)
Program structure	2 semesters a year with winter and summer breaks	Limited vacation days that may be availed with approval from guide

For more details on comparison between MS and MTech Upgrade refer to this document -

https://docs.google.com/document/d/e/2PACX-1vTmdXgF6oxRydXjlm_H_VmAWlbhcKGkEZt5D30t2l4rWCRBq9WyaqHXjCJlhZVnzt2yYghTULMFO4-O/pub

The details in this document are subject to change and just tentative guidelines. Please check IITM's website for the rules that are currently applicable for each process.

- a. [Get a GATE score/rank and apply to IITM's MTech/MS or PhD programs \(Campus program\)](#)
Writing the GATE exam opens doors to you at 100s of institutes and not just IITM. Using the GATE score, you can apply for an MTech or MS or PhD depending on what other degree you have apart from the BS degree.
 - i. You will get a stipend from the institute if you join the MTech (HTTA) /MS or PhD program.
This is our most recommended option for all students as the GATE score also enables you to apply to PSU jobs.

Check the link for more details :
<https://research.iitm.ac.in/>

- b. Apply for the MS program as a CFTI student if you have CGPA \geq 8.0 in IITM's BS program. (Campus program)
 - i. GATE score is not required for this
 - ii. You will have to go through the admission process which may involve a test and/or interview to be selected.
 - iii. The program will involve at least 1 year of course work and another 1-2 years of research work.
 - iv. Monthly stipend is provided by the institute.
 - v. Outcomes:
 - 1. Complete MS and apply for a job.
 - 2. Upgrade and convert the MS into a PhD at IITM.
 - 3. Complete the MS and apply for a PhD at IITM or outside.

The Senate **noted** the omission of the CFTI clause and approved to include the CFTI clause in the minimum requirements for admission to MS admissions for the departments of MST and DSAI of IIT Madras

Check the link for more details :
<https://research.iitm.ac.in/>

c. **Apply to the MS program as a Project staff within IITM (Campus program)**

- i. If you are appointed as a project staff in any project with faculty at IITM, you may be eligible for project admission to the MS program.
- ii. While you are project staff, you need to register for courses on campus, as approved by your project faculty.
- iii. You need to complete two approved courses at IITM with CGPA \geq 7.5, and have obtained at least a 'C' grade in each course to be eligible to apply for admission.
- iv. You need not have a GATE score or a minimum CGPA in the IITM BS program for this mode of admission.
- v. You have to go through the admission process as stipulated by the department, which can include a test and/or interview.
- vi. The institute does not pay you the stipend in this case, but you will be supported through the project. The payment you get from the project is fixed by the PI.
- vii. Outcomes:
 - 1. Complete MS and apply for a job.
 - 2. Complete the MS and apply for a PhD at IITM or outside.
 - 3. Upgrade and convert the MS into a PhD at IITM.

d. **Upgrade to the on-campus MS program**

- i. When you have completed 106 credits and CGPA \geq 8, you can apply in May/Nov of every year through the form floated by the POD team for the direct upgrade to MS.
- ii. If selected, you will do the BS level courses on campus in person (16 credits of course work and 12 credits of project).
- iii. Selection to do the BS level will be through a test and/or interview.
- iv. Once the BS level of 28 credits is completed on campus and hence, the requirements of the BS degree, you will be assessed, and if found suitable, you will be admitted to the MS program. Stipend will be paid by the institute as per the prevalent norms. Fees to be paid for the MS program are given on the website.

Reference Doc :

https://docs.google.com/spreadsheets/d/e/2PACX-1vQYJJLnpZt6d0lvEVSz8bhzUFQ8hImK7sAVvSLxZ_6fIZbtBp87hWKg2AuorYPFzquT1vQG-FerAUMy/pubhtml

e. **Upgrade to a PG Diploma or MTech degree online after the BS**

Once a student has completed 142 credits and the BS degree, they can choose to continue to study more courses. If they complete 20 more credits (3 core and 2 elective courses), students will be awarded a PG Diploma.

If they continue to do a project of 20 credits, they can earn an MTech from IIT Madras.

- i. This option to upgrade to the PGD or MTech can be exercised at any time after they complete 106 credits until they complete 142 credits.
- ii. The CGPA cutoff required in the BS program for applying for this upgrade is 8.00.
- iii. This option is recommended for working professionals who cannot afford to leave their jobs and join a physical college for a Masters degree. We strongly recommend that standalone students, who have joined the BS program after std XII to write the GATE exam and join a college for their Masters and not take this Option.

Reference Doc :

<https://docs.google.com/document/d/e/2PACX-1vRrtiiHlurfHtFnJnDwtNZ0NHAcI8PQ7pHsiX3V3SZKmbSmALDk4whCO5La6efs4MSmBLVTH2ZfG>

22. Apprenticeship in the BS level of IIT Madras' BS in Data Science and Applications

The program provides the students in the BS level of the program to pursue an apprenticeship with companies and research projects and earn up to 12 credits in this level. Doing an apprenticeship is optional.

Steps involved in the Apprenticeship program:

- 1. Approval for the company/research project where the student can work as an apprentice**
If the student applies and is accepted by any of the companies that are preapproved by IITM for this purpose, the apprenticeship will be directly approved. Else the student will have to submit the details of the company/organization and the Apprenticeship committee will decide based on the details submitted.
- 2. Reporting Manager**
Once the apprenticeship is approved, the student has to submit the details of the Reporting Manager in the Organization to IITM.
- 3. Logging the weekly work report**
Student has to file the work log to IITM BS office every week.
- 4. Review after first 4 weeks**
After 4 weeks, based on the student's performance, the reporting manager has to confirm if they would like to continue with the student as an apprentice for the next 7 months. This confirmation letter should be submitted to the IITM BS Program's Office.
- 5. Possible exit after 4 months**
After the completion of 4 months, the student or the company can choose to discontinue the apprenticeship. A letter from the company has to be submitted outlining the work done by the student and whether it was satisfactory to obtain partial credits.
- 6. After the completion of 8 months of internship**
A letter from the Reporting Manager should be submitted to the IITM BS program on the company's letterhead stating the work done by the student and whether it was satisfactory.

The following will be norms with respect to pursuing an apprenticeship:

1. **Number of courses that can be taken along while pursuing the apprenticeship**
Students can pursue a maximum of 2 courses each term during the duration of the apprenticeship.
2. **Duration of the apprenticeship that can be credited** - 8 months, full time
3. **Academic Credits**
 - a. <4 months: 0 credits.
 - b. 4<duration<8 months: 4 credits
 - c. 8 months: 12 credits
4. **Stipend:** This is mutually agreed upon between the student and the company when finalizing the apprenticeship.
5. **Mode of apprenticeship: Remote or On-site:** This will depend on the company's policy.
6. **Pre-placement Offer:** On successful completion of the apprenticeship, companies will have the option to give a pre-placement offer to the students.
7. **Payment of fees:**
The fee for credit transfer is fixed as Rs 5000/- per credit for Apprenticeship. When students opt to credit this at the BS level, they have to pay the credit transfer fee at the time of registration.

Please refer the link to know more about Apprenticeship:

https://docs.google.com/document/d/e/2PACX-1vQ_ZCTw1_PzVDBJ7u-wX18KUgl-IK1POIYRvyjAYsj_A-Ts99K7ARRuNVKk0tp34B1woqclNxvY_0Lc/pub

23. Software and Hardware Requirements - Mandatory System Specifications

The following are the essential requirements that are recommended to pursue the BSc Degree program from IIT Madras^[1]. Please note that there will be updates in some of the specifications with changes happening in technology.

23.1 Hardware

To enroll and study in the program, every student is required to have a laptop or desktop with the minimum configuration being as follows:

1. RAM Size - 8 GB or higher (The ability to install more memory is desirable).
2. Processor - Intel 8th Generation or AMD 4th Generation or upwards or its equivalent (The latest processor configuration is always recommended)
3. Storage - Minimum of 500 GB, Desirable of 1 TB. Having an SSD storage is desirable.
4. Screen size and resolution - Minimum of 13" for laptop and Minimum of 15" for desktop with 1080p
5. Webcam, a mic and speaker or an earphone/headphone with mic.

23.2 Software/Applications

1. Operating System - Minimum requirement of Windows 10 or Ubuntu LTS Version 20.04 (or any equivalent) or Mac OS Mojave. Having the capability of dual boot is desirable. If there is no capability for dual boot, then the operating system must support virtualization software like VirtualBox using which Ubuntu 20.04 can be emulated. The System Commands course in Semester 4 will be taught primarily on Ubuntu 20.04.
2. Browser - Latest version of Chrome with Google Account signed in
3. Basic familiarity with Google Suite of tools (Docs, Sheets and Slides), specifically collaboration features.
4. Any other software that is specified within the course

23.3 Internet Bandwidth

Minimum of 2 MBPS connection is required to attend sessions without disruptions. However we strongly recommend broadband connections with much higher bandwidth for the best learning experience.

23.4 For Online Interactions/Proctored Examinations

1. Browser - Latest version of Chrome is desirable
2. Mobile with a front camera and good internet connection (VOLTE connections are ideal)
3. Mic and speaker to be able to speak to and listen to the person at the other end
4. Any applications as required to be installed for the interactions/examinations

23.5 System compatibility test

All students have to mandatorily attend the system compatibility test and ensure that the system you have conforms to the above requirements and student has to participate in this on the dates mentioned by the Admin team to get this completed.

23.6 Other References

Some more helpful links that will help you in understanding possible system configurations:

1. <https://towardsdatascience.com/20-necessary-requirements-of-a-perfect-laptop-for-data-science-and-machine-learning-tasks-7d0c59c3cb63>
2. https://www.practicaldatascience.org/html/buying_datascience_computer.html
3. <https://www.umass.edu/it/support/hardware/recommended-minimum-computer-configurations-windows>
4. <https://www.du.edu/it/support/how-to/students/laptops>
5. <https://wmich.edu/cs/laptop-requirements>

24. Non Academic Rules

https://docs.google.com/document/u/1/d/1N5ZmPJZUDHznjt6G_ZiRS1baG_WpOfJM-oFnvWve76Y/pub

25. Research Paper Publishing Policy

[Updated on Aug 19, 2025]

Below are the points to be followed while publishing a Research paper :

Use of Institute Name : Students are not permitted to use "IIT Madras" or "IIT Madras BS Degree" as their affiliation in any research publication unless the work has been carried out under the guidance of a faculty member/instructor officially associated with the Institute.

Independent Work : If students wish to publish independent work (without faculty involvement), they must publish under their personal capacity, without citing "IIT Madras" or "IIT Madras BS Degree" as their affiliation.

Any unauthorised use of the institute's name in publications will be treated as a violation and may invite disciplinary action

as severe as cancellation of registration.

26. Announcements and Events

Video Links :

26.1 New initiatives approved in June Senate :

Live Streaming : [Click Here](#)
PPT : [Click Here](#)

1. Deep Learning and GenAI course + project in Diploma in Data Science
2. 2 new 4 credit electives in the Degree Level
3. Comprehensive Exam courses based on rank in GATE exam
4. Introduction of minors
5. Alumni Payment and Photo
6. PGD/M.Tech Certificate Template

26.2 GATE 2025 Topper session : [Click Here](#)

26.3 Toppers Announcement - 2024 : [Click Here](#)

26.4 PGD / M.Tech Update :

PGD/M.Tech introduction Meeting Link : [Click Here](#)

M.Tech Project Meeting link : [Meeting Video](#)
Project Proposal PPT : [PPT Link](#)
Project Details : [Click here for the link](#)

26.5 Level orientation of May 2025 term : (Youtube link)

Foundation level :
<https://youtube.com/live/aG5Gt1PFiE4?feature=share>
Diploma level : https://youtube.com/live/yf_UiJxHuaw?feature=share
Degree level : <https://youtube.com/live/sfTq5JJcTI0?feature=share>

26.7 Course Wise Orientation Youtube Links of Sep 2025 term

Sep 2025 - Course Orientation Schedule	Courses	YT Link
Sep 2025 Orientation - Foundational Level	English 1 & 2 Mathematics 1 & 2 CT & Python Statistics 1 & 2	https://www.youtube.com/watch?v=9rlc2g1NZig
	DBMS & Programming	

Sep 2025 Orientation - DIPLOMA IN PROGRAMMING	Concepts using JAVA PDSA using Python App Dev 1 & 2 System Commands	https://www.youtube.com/watch? v=FhRqwwCmrsQ
Sep 2025 Orientation - DIPLOMA IN DATA SCIENCE	ML- Foundations, Techniques and Practices BDM, BA and TDS	Yet to update
Sep 2025 Orientation - DIPLOMA IN DATA SCIENCE	Introduction to Deep Learning and Generative AI	Yet to update
Sep 2025 Orientation - CORE COURSES DEGREE LEVEL	Software Engineering Software Testing AI: Search Methods for Problem Solving Deep Learning	https://www.youtube.com/watch? v=v=PNZTxPFGc
Sep 2025 Orientation - ELECTIVE COURSES DEGREE LEVEL	Design Thinking	Yet to update
Sep 2025 Orientation - CORE COURSES DEGREE LEVEL	Strategies for Professional Growth	Yet to update
Sep 2025 Orientation - ELECTIVE COURSES DEGREE LEVEL	Introduction to Big Data LLM DLP DL for CV Special topics in ML (Reinforcement Learning)	Yet to update
Sep 2025 Orientation - ELECTIVE COURSES DEGREE LEVEL	Programming in C Computer System Design Operating Systems	https://www.youtube.com/watch? v=aqq6n_q3luA
Sep 2025 Orientation - ELECTIVE COURSES DEGREE LEVEL	Linear Statistical Models Mathematical Thinking Privacy & Security in Online Social Media	https://www.youtube.com/live/8Nq2bmKNh8U? feature=shared
Sep 2025 Orientation - ELECTIVE COURSES DEGREE LEVEL	Financial Forensics Game Theory and Strategy Corporate Finance Industry 4.0	Yet to update
Sep 2025 Orientation - ELECTIVE COURSES DEGREE LEVEL	MLOPS Data Visualization Design	Yet to update
Sep 2025 Orientation - ELECTIVE COURSES DEGREE LEVEL	Generative AI Algorithms for Data Science (ADS)	Yet to update
Sep 2025 Orientation - ELECTIVE COURSES DEGREE LEVEL	Computer Networks	https://www.youtube.com/watch? v=x5UCFX0D-y0

Sep 2025 Orientation - ELECTIVE COURSES DEGREE LEVEL	Data Science and AI Lab	
Sep 2025 Orientation - ELECTIVE COURSES DEGREE LEVEL	Application Development Lab	https://www.youtube.com/watch?v=OaK8CLE6Ums

[1]