

ACADEMIC GUIDELINES 2023-2024

BS-MS Programme



2. 5 Year BS-MS Dual Degree Programme

2.1 Introduction: IISER Kolkata offers a Bachelor of Science and Master of Science (BS-MS) Dual Degree Programme wherein a unique training programme is offered to students through a balanced schedule of class room lessons, project and research work. While the Institute aims at comprehensively training the students in each of the major subjects, much attention is also directed to the development of an inter-disciplinary perspective.

2.2 Credit structure: The total number of credits required for the award of the BS-MS degree will be 253 credits for DPS, DES, DCS, and DBS, and 229 for DMS with effect from the MS18 Batch. For a distribution of credits across semesters, the core and the elective courses to be taken, etc., please refer to the 'Courses of Study' document.

In line with the modular course structure, the following are the set of minimum credits for major, pre-major, and non-pre-major departments.

	DBS	DCS	DPS	DES	DMS
Non-premajor	12	12	12	6	6
Premajor	27	27	27	21	21
Major	120	120	120	120	96

- i. A student must have one major department, two premajor departments and two non-premajor departments.
- ii. A student may have backlogs in courses (at most two) and yet will be considered for a degree provided he/she satisfies the minimum credit requirements.
- iii. If the student satisfies the minimum credit requirements and yet has a few backlogs, those failures may be revoked.
- iv. The student must clear all core courses (particularly in the levels 1 and 2) for the consideration of the degree.

2.3. Levels

2.3.1 Level 1:

The first level of the 5 Year BS-MS Dual Degree Program will have 29 credits in each semester in the following courses:

- i. Courses in five disciplines of basic sciences viz., Biology, Chemistry, Earth Science, Mathematics, and Physics
- ii. All students would attend courses on 'Communicative English', and 'Introduction to Philosophy'/'Sociology'. The students would be divided into two batches depending upon their level of exposure to English. In the 1st semester, Batch A would register for Communicative English while Batch B would learn Introduction to Philosophy/Sociology. In the second semester, Batch A would learn Introduction to Philosophy/Sociology while Batch B would learn Communicative English.

CNR Rao Foundation Prize: The prize is given to the best performing student of the first year. A certificate and cash prize is given twice in a year to the student scoring the highest SGPA in the semester.

2.3.1.1 Level 1 for MS23 Batch onwards

Contact hrs Distribution											
	DBS	DCS	DPS	DES	DMS	CDS	HSS	Math Method	Total		
1st Sem	3+3	3+3	3	4	4		2		26		3 hour labs each: Bio and Chem
2nd Sem	3	3	3+3	4	4	4			23		3 hour lab for Physics and 4 hour lab Comp Sc
<i>Major Choice : end of second semester</i>										Mandatory	

- All subject topics have been assigned hours depending on whether the subject has a laboratory component in the teaching.
- Each of the natural sciences (Biology, Chemistry, Physics) will have a single lab course (weekly three hours) in the first year. Together with computer sciences, there will be four laboratory courses (two in each semester) in the first year.
- For courses (offered by DES, DMS) without a laboratory component, the weekly contact hours are 2+1+1 hours of classroom activities. It is 2 hours of theory class + 1 hour of optional tutorial class and 1 hour of a supplementary interactive session.
- The mathematics courses offered in the first year (through the two semesters) will train students in mathematical methods (applied mathematics) as well as regular 1st year mathematics content from DMS (pure mathematics). This will ensure that every student has the choice of opting for any pre-major including mathematics.
- Specifically, every week, the following weekly contact hours are proposed in the Autumn semester:
 - Theoretical Physics, Chemistry, Biology: $(2+1) \times 3 = 9$ Hours
 - Experimental Biology and Chemistry laboratories $(3) \times 2 = 6$ Hours
 - Theoretical Earth Science, Mathematics: $4 \times 2 = 8$ Hours
 - Humanities/English course $(2) \times 1 = 2$ Hours
 - This English course will be a simple and advanced communicative English course. The students will be asked to take one of them.
 - The total contact hours will be 25 Hours in the Autumn semester.
- In the Spring semester:
 - Theoretical Physics, Chemistry, Biology: $(2+1) \times 3 = 9$ Hours
 - Experimental Physics and Computer laboratories $(3 + 4) = 7$ Hours
 - Theoretical Earth Science, Mathematics: $4 \times 2 = 8$ Hours
 - The total contact hours will be 24 Hours in the Spring semester.

2.3.2 Level 2:

- At this level students have to choose three 'Pre-Major' disciplines.
- In the 2nd year 1st semester one has to earn 7 credits in each pre-major subject and a compulsory 'Mathematical Methods' course of 3 credits. Total credit in the 2nd year 1st semester will be $7 \times 3 + 3 = 24$.
- In the 2nd year 2nd semester, a student has to do 8 credits in each pre-major subject and a compulsory 'Computer Science' course of 3 credits, totalling $8 \times 3 + 3 = 27$ credits.

2.3.3 Level 3:

- i. In the third level, students are required to choose a 'Major' discipline from the three pre-major disciplines chosen in the second level. Students would provide their first, second, and third choice of 'Majors', including the year-repeating students who wish to change their 'Major'. A score will be created for each such student eligible for promotion to Level 3. 40% of the score will be taken from the GPA of the first choice subject (e.g. Bio), 30% from the second choice subject (e.g. Maths), and the remaining 30% from the overall CGPA. These GPAs will be calculated from the completed courses in Levels 1 and 2 (I-graded courses will not be counted).
- ii. Each Department will specify the maximum number of students they can accommodate in a particular academic year, by taking into account the laboratory facilities and the faculty strength. However, this number cannot be less than 25% of the total number of students enrolled in the second year of that particular batch.
- iii. If a student is unable to qualify for any Major after the second year owing to multiple failures or does not qualify for the major of his/her choice, he/she will be detained in the second year. In that case conditions of detainment (refer to "Promotion Policy" vide Point 2.8) will be applied. He/she may seek permission to change the pre-major disciplines.
- iv. In order to get Major in any discipline, a student must have cleared all courses offered by that department in the first and the second levels. However, a department may make an exception to admit a student who may have a failure in the same subject.
- v. A student can change his/her Major within a week from the start of the 5th semester, provided he/she satisfies the requirements of that department. Also, the changing of Major will require consent from both the departments (leaving dept and joining dept). The student must submit proof of consent to the academic office to have their major changed.
- vi. Students will have to take five core courses from the selected discipline (major). In addition, one course is to be chosen as elective (Departmental/Open) which must be a theory course. The elective course may be chosen from the same department or from another department that the student chose as pre-major in the 2nd level. A student cannot take a laboratory course as elective (excepting computer lab, which is equivalent to a theory course). Students should seek the advice of the departmental Under Graduate Academic Committee (UGAC) members in choosing the electives.
 Departmental Elective can be any of the elective courses of the same level offered by the parent department. Open Elective can be any of the courses offered by the Major department or another department, provided that the pre-requisite requirements are met and that there is no timetable clash.
- vii. Students can choose one Humanities course as an optional elective during 3rd to 5th years. If it is not offered by the Institute then one can opt for similar courses from the NPTEL, with advice from and intimation to the departmental coordinator. The examination questions will be set in-house and evaluation will also be done accordingly.

2.3.4 Level 4:

In the fourth year, core and elective courses are offered. There will be departmental electives (which have to be chosen from among the electives offered by the major department), and open electives (which can be chosen from any department including the major department). Details of the core, departmental elective and open elective courses have to be obtained from the ‘Courses of Study’ document. Students can choose one Humanities course as an optional elective during 3rd to 5th years. If it is not offered by the Institute then one can opt for similar courses from the NPTEL, with advice from and intimation to the departmental coordinator. The examination questions will be set in-house and evaluation will also be done accordingly.

Students may also choose to do NPTEL online courses as electives in the 4th or 5th Levels of the BS-MS Programme. These courses have to be in areas where courses are not offered by IISER Kolkata. The same will be offered from Academic Session 2020-21.

However, the following points must be ensured

- (a) The timing of the chosen NPTEL course(s) should be concurrent to IISER-K class and exam schedule, and
- (b) A student wishing to take an NPTEL course should first submit a request to the concerned department. The UGAC will consider the details of the offered course and will approve / disapprove.
- (c) At the time of listing of courses for an upcoming semester, the concerned instructor/Department must intimate the Academic Office about any NPTEL course(s) in which the students plan to get enrolled. The same will then be assigned a unique course code by the Academic Office and will be included in the Teaching Plan for that semester.

2.3.5 Level 5:

In the fifth year, a student has to do a dissertation (research project) along with some advanced courses. The project work will be evaluated on the basis of the project report and a seminar. Students may also choose to do NPTEL online courses as Electives in the 5th level of the BS-MS Programme as detailed in 2.3.4.

2.3.6 Earning a Minor: In 3rd to 5th levels students may choose open elective courses from any department. One can earn a ‘Minor’ in a second discipline if (a) he/she had taken that discipline as pre-major in the 2nd level and (b) he/she earns an additional 12 credits in the 3rd-5th levels in subjects offered by that department. The earned ‘Minor’ will be mentioned in his/her Degree Certificate. Apart from DPS, DMS, DCS, DES, and DBS, one can also earn a Minor in Computational and Data Sciences (CDS), and Humanities and Social Sciences (HSS).

The introduction of a Minor in CDS will be effective from the MS18 Batch. To earn a minor in CDS, an additional 20 credits must be earned from electives offered by CDS or particular Senate-approved DMS courses (currently: “Machine Learning & Network Analysis”) or NPTEL courses approved by CDS.

2.3.7 Earning a Major: A minimum of 120 credits in core and departmental elective courses of the 3rd – 5th levels will be required to earn a Major in a subject for DBS, DCS, DES and DPS. For DMS, a minimum of 96 credits in core and departmental electives earned in 3rd-5th levels will be required. This is effective from MS18 batch.

2.4. MS Project carried outside the Institute:

- i. Normally the 5th year project should be done within IISER Kolkata. However, if the Institute does not have faculty in the area of interest of a student, he/she may be allowed to do the final year project outside the Institute provided the coursework is not hampered, and a co-supervisor from IISER-K is allotted. In case supervisor is not from IISER-K, the Co-Supervisor from IISER-K will be accountable for ensuring completion of academic requirements of a student as per IISER-K rules.
- ii. In case a student wishes to do a part of the project work in another Institute in India or abroad, he/she should submit an application to the concerned Department UGAC Convener, along with the offer letter from the host Institute and/or MoU (in case of foreign universities) and financial statement. Based on that, the concerned UGAC Convener and the Head of the Department will approve the request, and will assign a local coordinator who will be accountable to ensure that the academic requirements of the student are fulfilled as per IISER-K rules.
- iii. The concerned Department will issue a No Objection Certificate to those students and will share the list of such students with the Academic Office.
- iv. A student must give a presentation upon his/her return and submit a report to the concerned Department.
- v. If a student is required to do some coursework in a semester in addition to the project, that course can be done as an “Independent Study” course with special permission from the DoAA (provided there is no other “Independent Study” course to be taken that semester). The student will have to appear in the end-semester examination and will be evaluated on the basis of that examination alone.
- vi. Since an optional BS degree after 4 years is offered by the Institute, students of Level 3 and above who wish to do their MS project outside of the Institute may choose to exit with a BS degree and continue their MS project in a different institute. The concerned department is empowered to enforce this policy as it deems fit.

2.5. Independent Study:

A student may choose a course for “Independent Study” which is not offered by the Institute as a taught course. One cannot do this course in the same area in which he/she is doing the final year project.

2.6 Attendance: Attendance in all classes (lectures, tutorials, laboratories) is compulsory.

- i. For 1st and 2nd years, a rule of 60% biometric attendance is enforced. For all students not having 60% attendance, the course total will not include mid-semester and/or end-semester marks, as the case may be.
- ii. For 3rd year and above, Instructors must inform the Academic Office at the beginning of the semester about their plan and weightage distribution of attendance, exam, assignments, etc., and whether the attendance component will have any bearing on examination eligibility.
- iii. At any point of time, if a student’s attendance goes below 60%, the concerned instructor should report it to the Academic Office and the DoSA who will ensure that the student is appropriately counselled at the Mind Care and Wellness Centre (MCWC).
- iv. Attendance record may be obtained from the biometric attendance system. The concerned course instructors may also maintain an attendance record by calling the rolls. The instructors

should devise their own mechanism to handle genuine cases of students like fingerprint issues and should manually update the attendance on WeLearn for those students. Instructors should notify the Academic Office if any student fails to appear in classes for a span of one week.

- v. Visits by students representing the Institute and/or medical cases will be included in the buffer 40% and no special consideration will be made towards the mandatory 60% attendance.

2.7 Exit with BS degree

2.7.1 4-year BS Degree:

The major credit requirements should be 60 credits (half of 120 credits, a requirement for a major in a complete BS-MS program) or credit equivalent of 15 courses (13 for DMS).

Degree	Total credits	Major requirements	Minor Requirements
4-year Bachelor of Science with research	189 + 16 credit research project = 205 (173 + 16 = 189 for DMS)	60 credits in levels 3-4 (52 for DMS)	Same as 5-year BS-MS program 12 credits in levels 3-4 for non-CDS disciplines 20 credits for CDS
4-year Bachelor of Science (without research)	189 credits (173 for DMS)		

If a student decides to continue with MS (after opting for a 16-credit BS project in Level 4 in lieu of 4 regular courses), s/he will have to complete those four regular courses in Level 5, in order to get a BS-MS degree. For such students, the project credit in the Spring Semester will be 16 credits less than usual.

The structure of the BS project may be decided by the concerned Department, but the project must have a total of 16 credits. The '4-year BS with research' choice should be made by the students at the end of their 7th semester, except for DBS students who would have to make the choice at the end of their 6th semester (Level 3).

2.7.2 3-year BS Degree: There will not be any 3-year BS Programme; any such exit cases will be dealt with on a case-to-case basis, subject to fulfilling the below mentioned conditions:

- a) Academically deficient students who are unable to complete the requirements for BS-MS programme in 7 years will be allowed to exit with a BS degree if they have, i) spent a minimum of 5 years in the Institute, ii) completed at least 2/3 of total credits required for BS-MS dual degree, and iii) maintained a CGPA > 5 in those 2/3 of the total credits.

- b) The above implies that a minimum of 153 credits (i.e., 2/3 of 229 credits which is the minimum required total credits for BS-MS degree) must be earned for a BS-only degree. This is for DMS students, others should get 169 credits.
- c) The policy will not be applied automatically; a student will have to appeal for the same. The Academic Office will intimate such students who fall under this bracket so that they can make a formal appeal for a BS degree.

2.8 Termination of studentship:

2.8.1 The following situations will lead to termination of studentship.

- i. The 7-year rule: a BS-MS student can take a maximum of 7 years to complete the programme.
- ii. SGPA 5 rule: If the student earns SGPA less than 5.0 in three consecutive semesters, his/her studentship will be terminated. However, the student will get a last chance in the subsequent summer supplementary to improve the SGPA.
- iii. Other exit options such as BS (157 credits) or 4-year BS (189 credits) [Refer to the point 'Exit with BS degree']

2.8.2 A student can appeal against a termination notice to the Chairperson, Senate.

2.9 Continuation of Fellowship:

- i. The fellowship rules are governed by the respective funding sources like INSPIRE or KVPY. At the end of every semester, the Academic Office will communicate the students' results to the funding agencies, and the decision to continue / discontinue fellowships entirely lies with them. IISER Kolkata has no say in this matter.
- ii. Students are also intimated by the Academic Office on scholarships available during the Academic Year on the National Scholarship portal. Students can submit applications on the portal based on eligibility criteria. Students from respective states also avail scholarships as announced by the State Governments on their portal like Prime Minister's Special Scholarship Scheme for Students of J&K and Ladakh; Mukhyamantri Medhawi Vidyarthi Yojna Madhya Pradesh; Swami Vivekananda Merit Cum Means Scholarship Scheme, West Bengal; Jharkhand Fellowship -e-Kalyan, etc. The verification of fresh and renewal applications is done by the Academic Office.

2.10 Protocol for choice of supervisor for MS project and selection of best MS Project Report

2.10.1 Choice of supervisor for MS project

- i. The UGAC convener of a particular department will contact all the 5th year BS-MS students asking for their preferred MS project supervisor.
- ii. The respective Departments will devise methods to assign MS supervisors to students.

2.10.2 Choosing the best MS Project Report:

- i. There will be an award for the best project and another for the second best project from each department.
- ii. Each department will make a few committees comprising faculty members with different expertise, headed by a Convener. The total number of BS-MS students will be equally divided

in groups to present their work in front of those committees one at a time. Each committee will suggest three names that will compete for the best project award.

- iii. An apex committee comprising the Convenors of each committee, the members of the departmental UGAC and external experts, if required, chosen by the UGAC will finally select two students. A department may think of only best project award and no second best. Not more than two names should come from one department.

2.11 Final year MS Project Report:

The submission of Masters' project report by the final year BS-MS students will be fully online. Once a student submits the project report file, the same will be endorsed by his/her supervisor in the same portal after getting a satisfactory plagiarism check from the Library.

The Library will assign a unique *url* to the project report, which would be made available online based on mutual consent of both student and advisor. Consent from the student and the supervisor(s) will be taken that the Institute will have the right to keep a copy of the project report.

2.11.1 Format:

MS Project Report should be submitted in pdf format (not doc or docx). The certificate page should contain the signature of the supervisor, which can be scanned and inserted in the pdf file.

- i. Font type and Size: Times New Roman, 12 point.
- ii. Line Spacing: 1.5
- iii. The front page should have the following information with centre alignment:
 - (a) Title of the Report
 - (b) Name of the Degree
 - (c) Name of the Student
 - (d) Roll No. of the Student
 - (e) Name of the Supervisor
 - (f) Name of the Co-Supervisor, if any
 - (g) Name of the Department
 - (h) Name of the Institute with its Logo
 - (i) Month, Year
- iv. Declaration of the student with his/her signature on academic integrity and copyright. (For template please refer to the PhD Guidelines)
- v. Certificate of the Supervisor with his signature. (For template please refer to the PhD Guidelines)
- vi. Acknowledgment (not more than two pages)
- vii. Dedication (optional)
- viii. Abstract
- ix. Chapters, starting with 'Introduction' and ending with 'Conclusion'
- x. References

2.12: MS to PhD Switch over: A student can apply for switch-over from BS-MS to PhD program of the Institute any time after the commencement of 5th year of the program. Students of the MS by Research Programme may also apply for switch-over.

- i. The student must have the required CGPA at the time of switch over, and must maintain the same until the end of the 5th year. For IISER-K funded General category students, the CGPA

may be ≥ 8.5 , and for reserved category CGPA may be ≥ 8.0 . In case the CGPA of a student falls below the required number, his/her candidature as a PhD student will be cancelled.

- ii. BS-MS students may apply for "BS-MS to PhD switch over programme" till the end of their 10th semester.
- iii. Their selection interviews will be conducted along with the selection interviews of the new PhD applicants. The respective department will conduct their selection interviews.
- iv. The students thus inducted into the PhD programme are encouraged to bring their own fellowships from external funding agencies like CSIR, UGC, INSPIRE. Until a student secures funding from some external agency, he/she will be considered as an Institute Fellow, and will be subject to the rules pertaining to the Institute Fellowship.
- v. For these students coursework will be waived except the Research Methodology Course (if not done during MS course work).

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