MANAV RACHNA
vidyanatariksha

MANAV RACHNA INTERNATIONAL INSTITUTE OF RESEARCH AND STUDIES

(Deemed to be University under Section 3 of the UGC Act, 1956)
MRIIRS Aravali Campus: Sector-43, Delhi Surajkund Road, Faridabad, Phone: +91-129-4198100 (30 lines)

Key Indicator 2.5

Current Manual of Examination Automation System with screenshots highlighting the automated examination processes via i-cloud EMS

Registrar

i-cloud EMS Manual

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AREA OF OPERATION:-

Examination

Table of Contents

Vinay

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Registrar

iCloud EMS

1. Introduction

In order to reduce paper-based activities and speed up overall academic processes in Manav Rachna, a cloud-based EMS is being used which aims at automating majority of academics tasks at Manav Rachna. Manav Rachna International Institute of Research and Studies (MRIIRS) has subscribed to a comprehensive EMS (Education Management System) which provides integrated solution to enhance and digitize the processes like Admissions, Fee, Student's academic life cycle, Transport, Hostel, Feedback, Grievance, Recruitment , HR processes and other administrative operations in the university through its web mobile based applications.

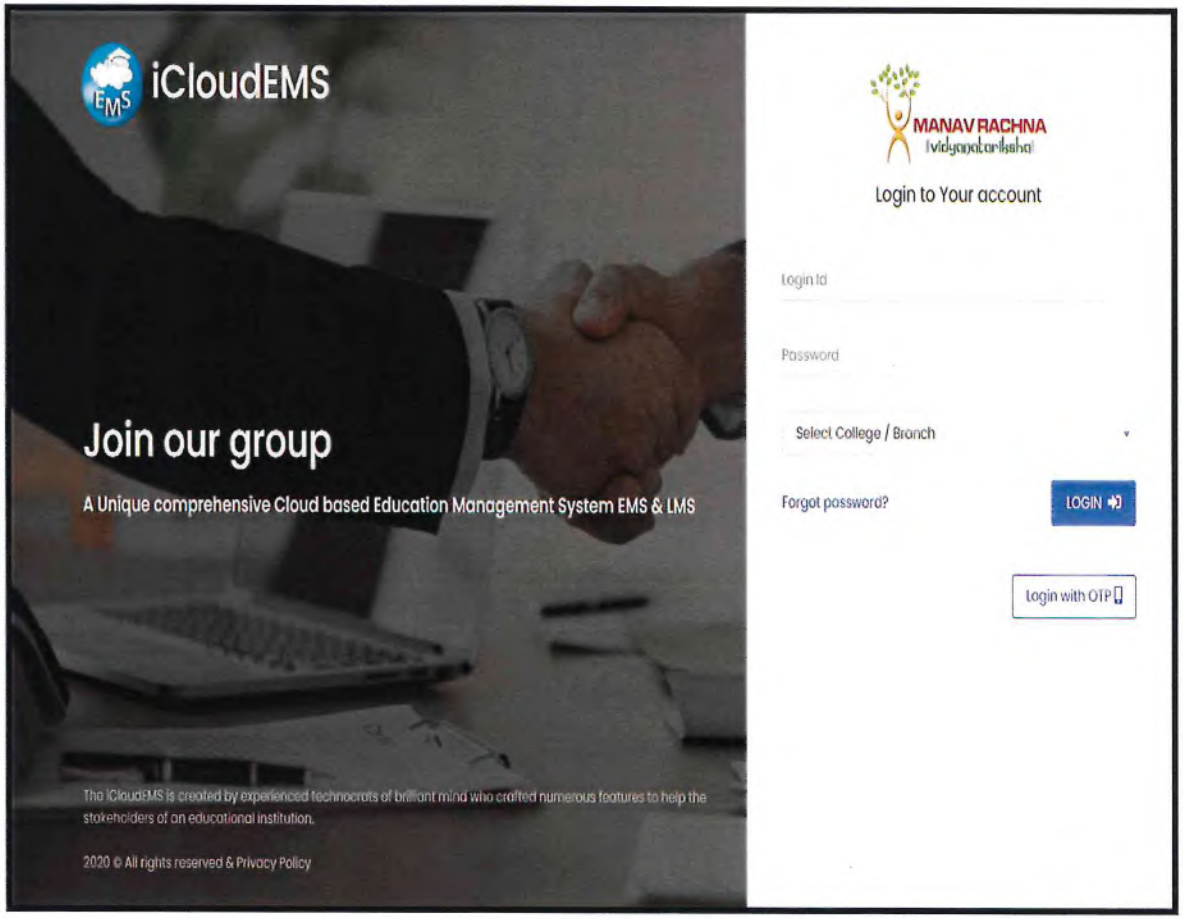

Figure 1: Login Page

2. Student Course Registration

Introduction:

- There are multiple things that are part of student course registration like course creation, course program mapping, time table creation, course approval etc.
- The activities that are integrated to each other and are related to student course registration are handled by Timetable coordinators of various departments. Other higher level activities like course approval, session plan approval is done by Head of Department.
- The Staff members who are assigned the role of timetable coordinator are responsible of creating the courses with proper nomenclature as per study schemes, course programming mapping, group forming, course allotment, time table creation etc.
- Other activities like creation of session plan, marking of class attendance, assigning assignments and content uploading are performed by the respective subject teachers.

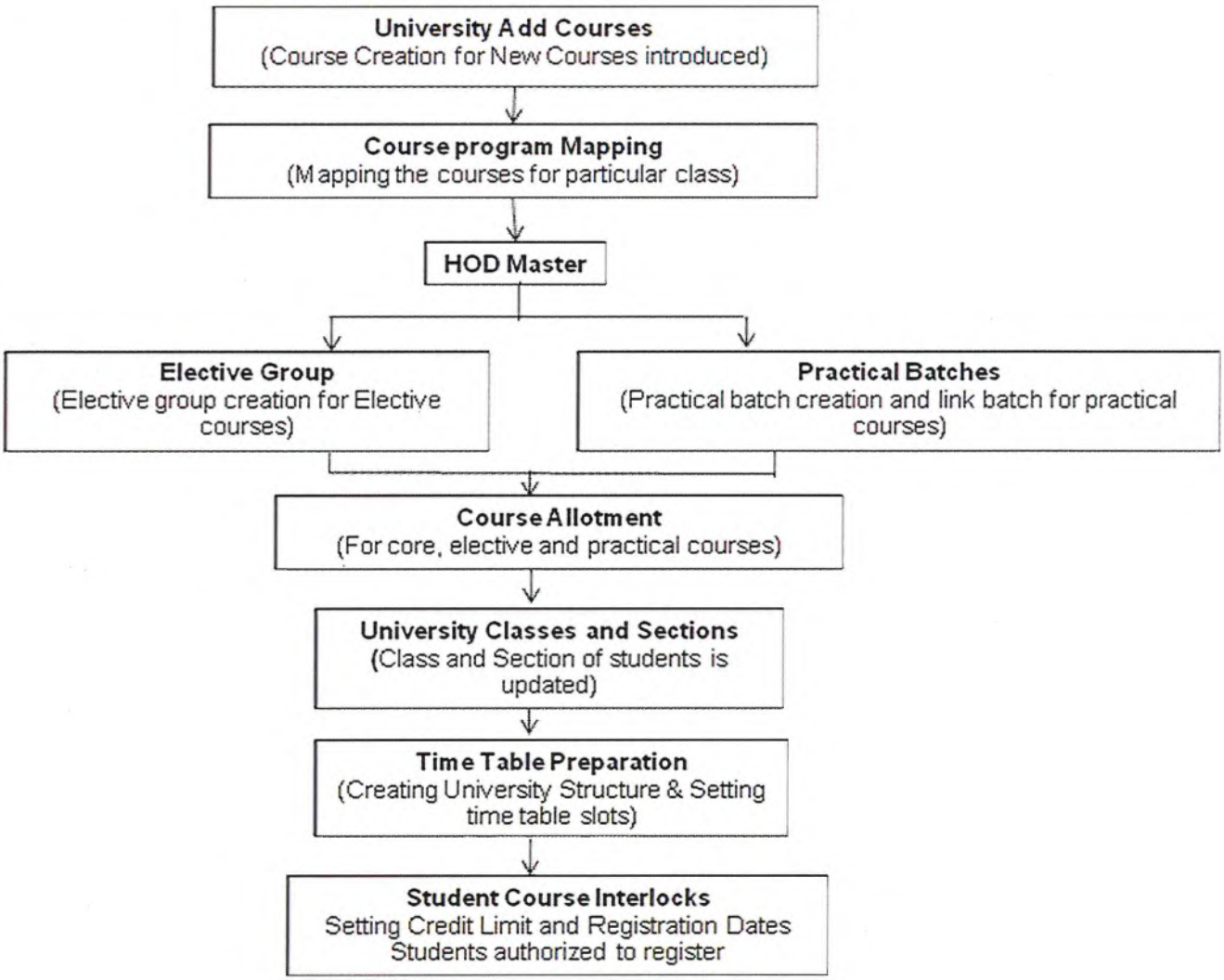

Figure 2.1: Process Flowchart of Student Course Registration

- For the commencement of the semester in the beginning following activities are executed at the EMS Coordinator and HOD end:
    a. Course Creation
    b. Course Program Mapping
    c. Course Registration by Students
    d. Assigning Sections to the students for the semester to be commenced
    e. Creation of Practical/Elective Batches of the students
    f. Course Allotment to faculty members
    g. Creating Timetable & Alternate Arrangements (if any)
    h. Course Approval (performed at HoD level)

STEP 1: COURSE CREATION –

- All the courses that are a part of the curriculum are created as per their baskets mentioned in the scheme. The system facilitates to use the same courses for the next batch if the same course is being taught.
- If any new course is being introduced then it can be added through the tab "University Add Courses" in Settings at the EMS Coordinator level.

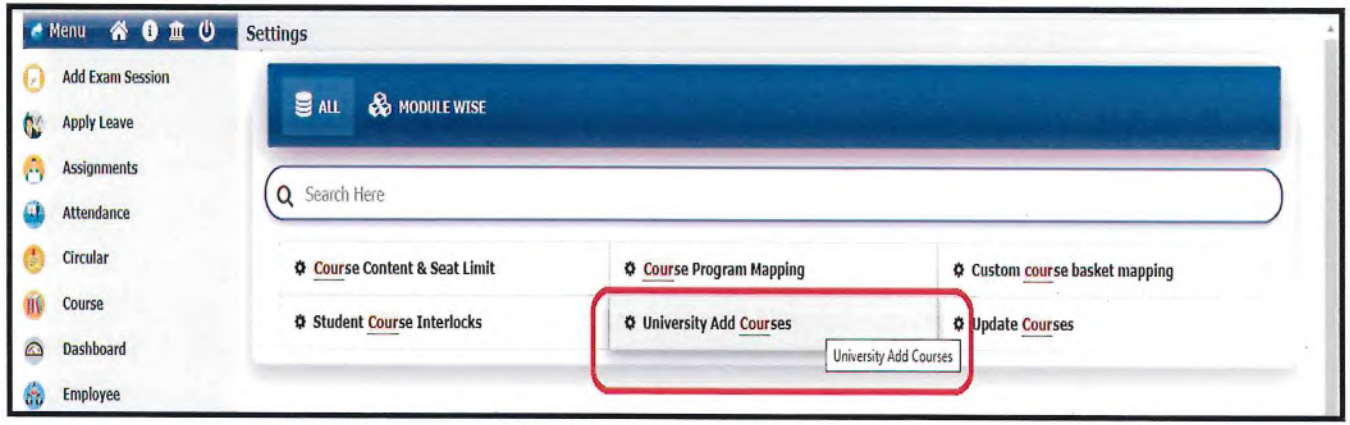

Figure 2.2: Snapshot of Course Creation Window

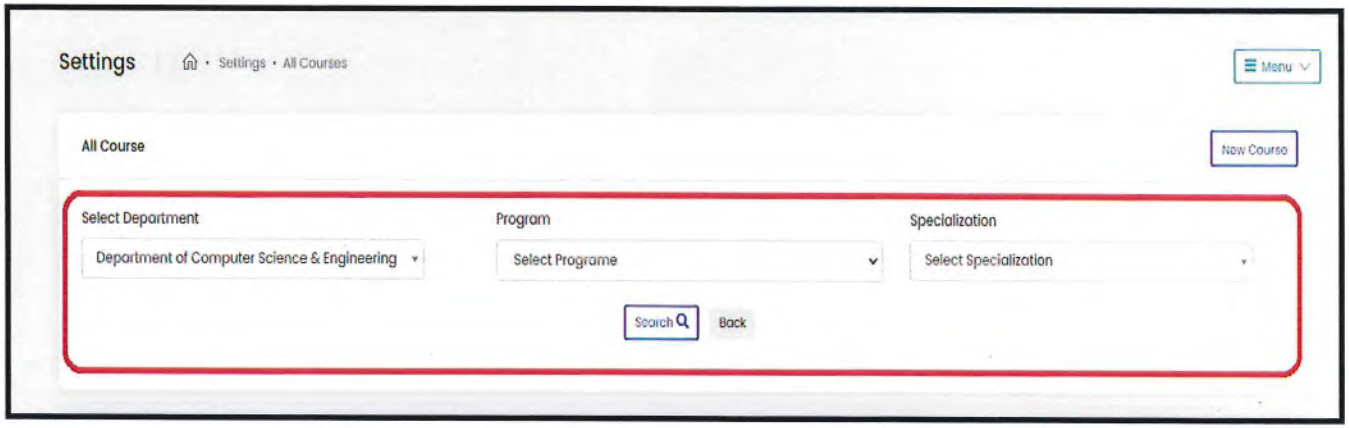

Figure 2.3: Selection of course list- department wise

Show All entries

Export to Excel

Search:

SR No.	Class	Section	Course	Course Code	Course Basket type	Lecture Type	Credit	Is Open Course	Course Short Name	Load/week(hr)	Edit
1	B.Tech. CSE	Sem 1	introduction to open source software	CS-104	Gnrl	PP	2	1	IOSS	2	-
2	B.Tech. CSE	Sem 1	mathematics-i	BSC-MA-101	CORE	PP	4	1	Math-I	5	-
3	B.Tech. CSE	Sem 1	chemistry-i	BSC-CH-101	CORE	PP	4	1	Chem-I	5	-
4	B.Tech. CSE	Sem 1	programming for problem solving	ESC-CS-101	CORE	PP	3	1	PPS	3	-
5	B.Tech. CSE	Sem 1	workshop/manufacturing practices	ESC-ME-102	CORE	PP	3	0	W/MP	1	-
6	B.Tech. CSE	Sem 1	workshop/manufacturing practices	ESC-ME-102	CORE	PP	3	1	W/MP	1	-
7	B.Tech. CSE	Sem 1	semiconductor physics	BSC-PH-104	CORE	PP	4	1	SemiC Phys	4	-
8	B.Tech. CSE	Sem 1	mathematics for computer science & engineering-ii	BSC-MA-201	CORE	PP	4	1	Math-II (CSE)	4	-
9	B.Tech. CSE	Sem 1	chemistry	BCH-100	CORE	PP	4	1	Chemistry	4	-
10	B.Tech. CSE	Sem 1	programming for problem solving	BCS-101	CORE	PP	4	1	PPS	3	-

Figure 2.4: List of Courses along with their details

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Figure 2.5: New Course Adding button

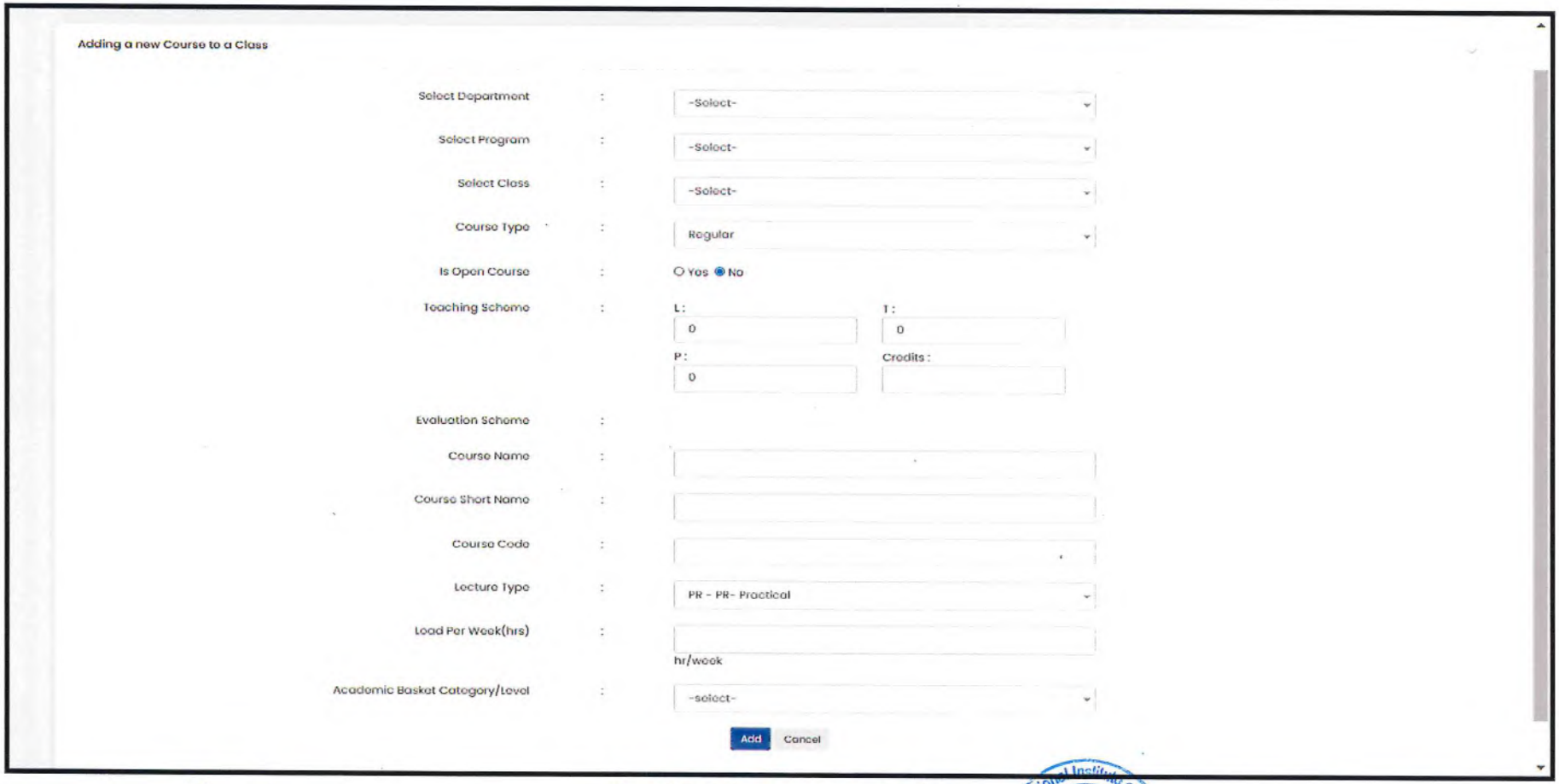

Figure 2.6: Adding a new course window

STEP 2: COURSE PROGRAM MAPPING –

- From the list of the courses, the courses as per the study scheme offered in upcoming semester and class are mapped through 'Course Program Mapping' window.
- All the courses i.e. core (both lectures and tutorials), electives, practical etc are mapped to the semester.
- Course list is present on the left side under "Course Pool" from where required courses are moved to right side under "Already Mapped Courses" list.

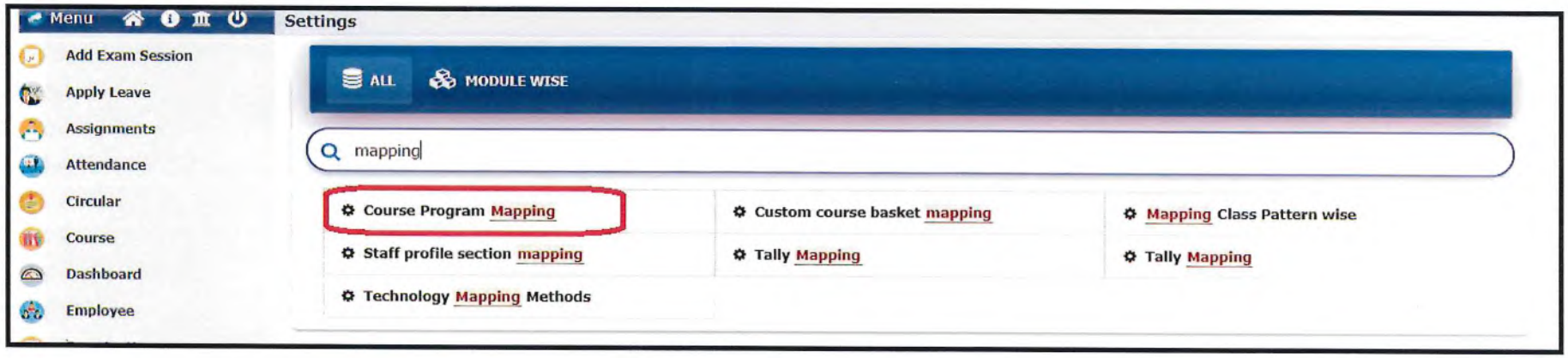

Figure 2.7: Course Program Mapping Setting

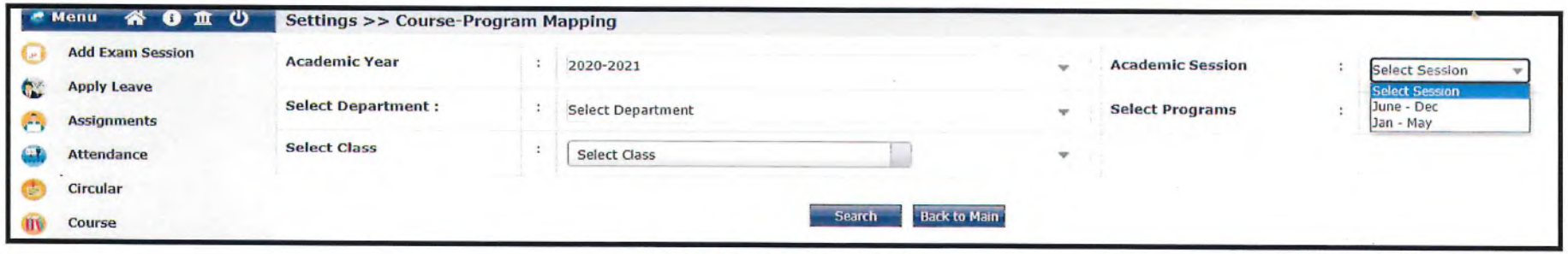

Figure 2.8: Selection of required filters

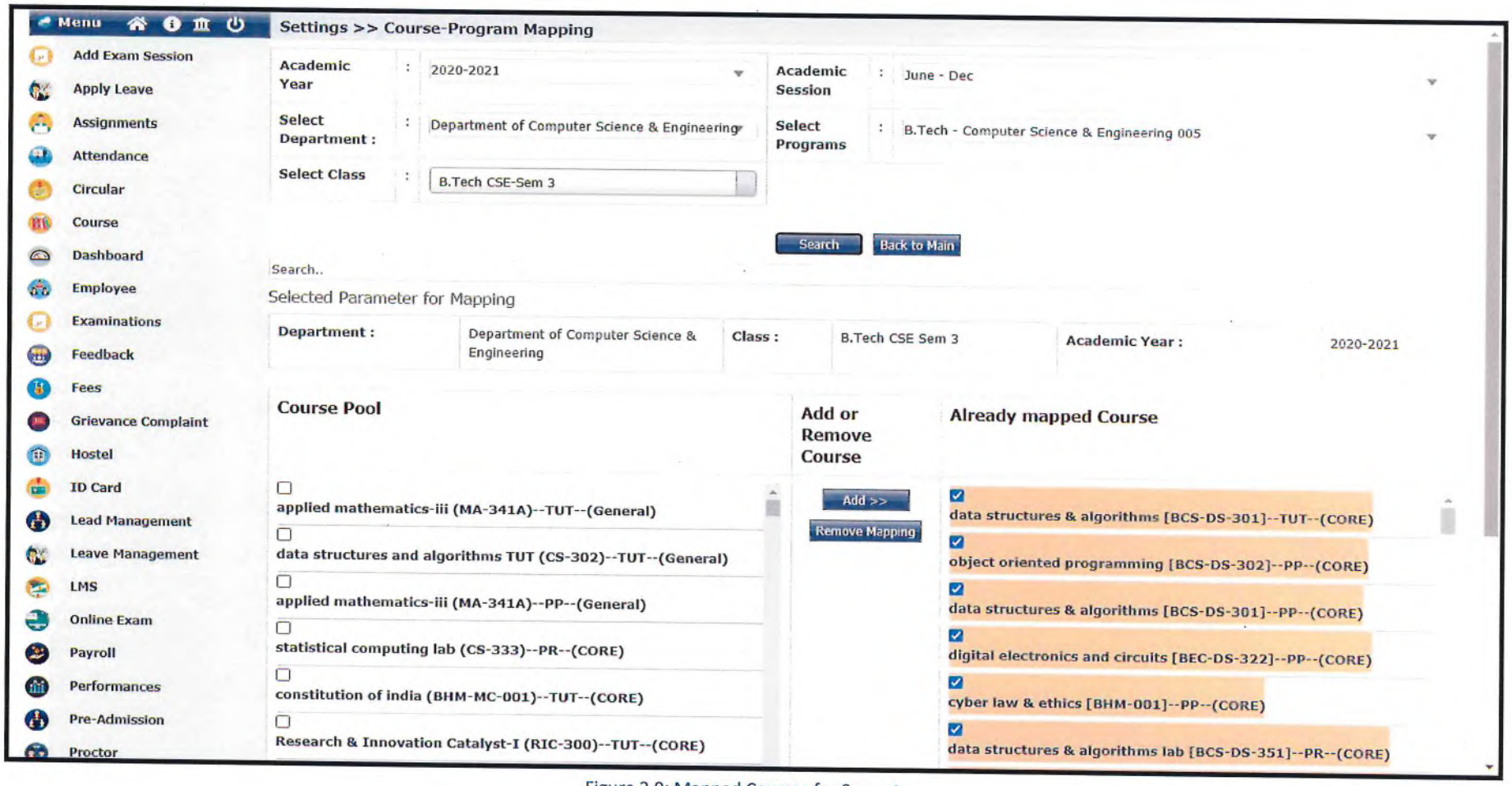

Figure 2.9: Mapped Courses for Semester

STEP 3: COURSE REGISTRATION –

- All the mapped courses are visible at student's portal for registration from where they have to "Apply" for all the core courses and desired elective courses.
- For this activity a specify time window is provided to students that is decided by competent authorities and set by EMS Coordinators on the system. This is done through "Student Course Interlock" option available under "Settings".

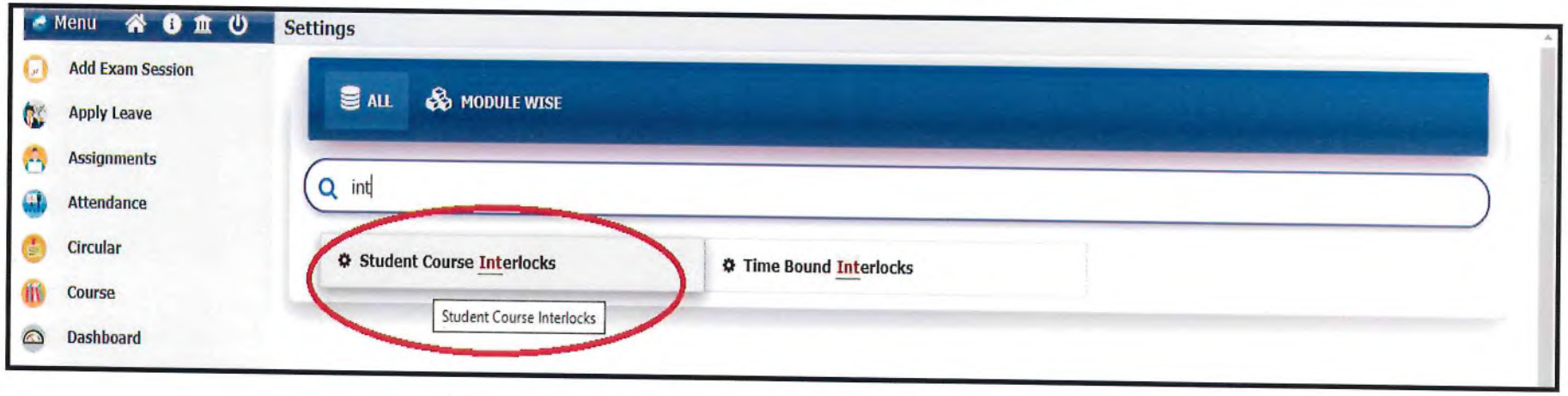

Figure 2.10: Settings showing Student Course Interlocks

- There are 5 sub-settings that can be performed in "Student Course Interlock" :
  i. Requisites – The user can set pre-requisites, co-requisites and anti-requisites through this tab.
  ii. Credit Limit – The registration window for students along with the credit limit value offered to them as per the study scheme is set under credit limit.
  iii. Event Attendance limits – To set the maximum number of event attendance any student can be benefitted with is set through event attendance limit. (Done either by Registrar Office or by Administrator)
  iv. Course Authorization – The list of students who belong to particular class is displayed from which the time table coordinators can select the students who are allowed to do registration for the upcoming semester.
  v. Basket-wise Limit – This setting enable the restriction on credits offered under various course baskets like Generic Electives, Open electives etc.

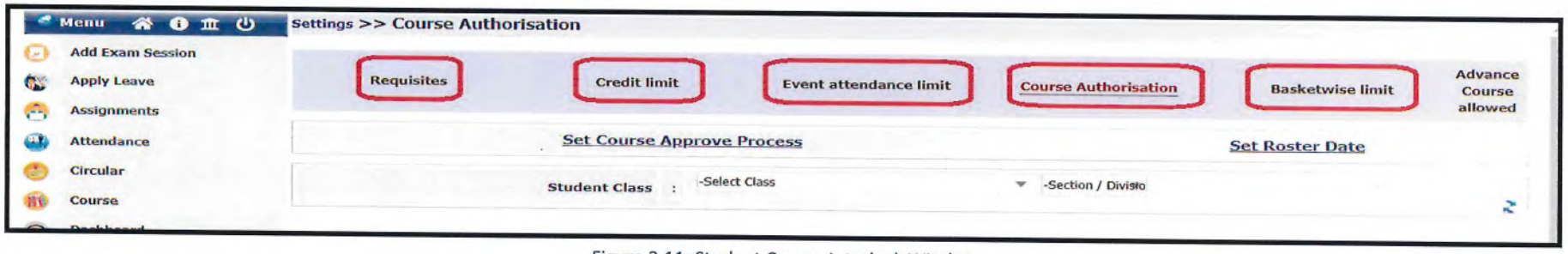

Figure 2.11: Student Course Interlock Window

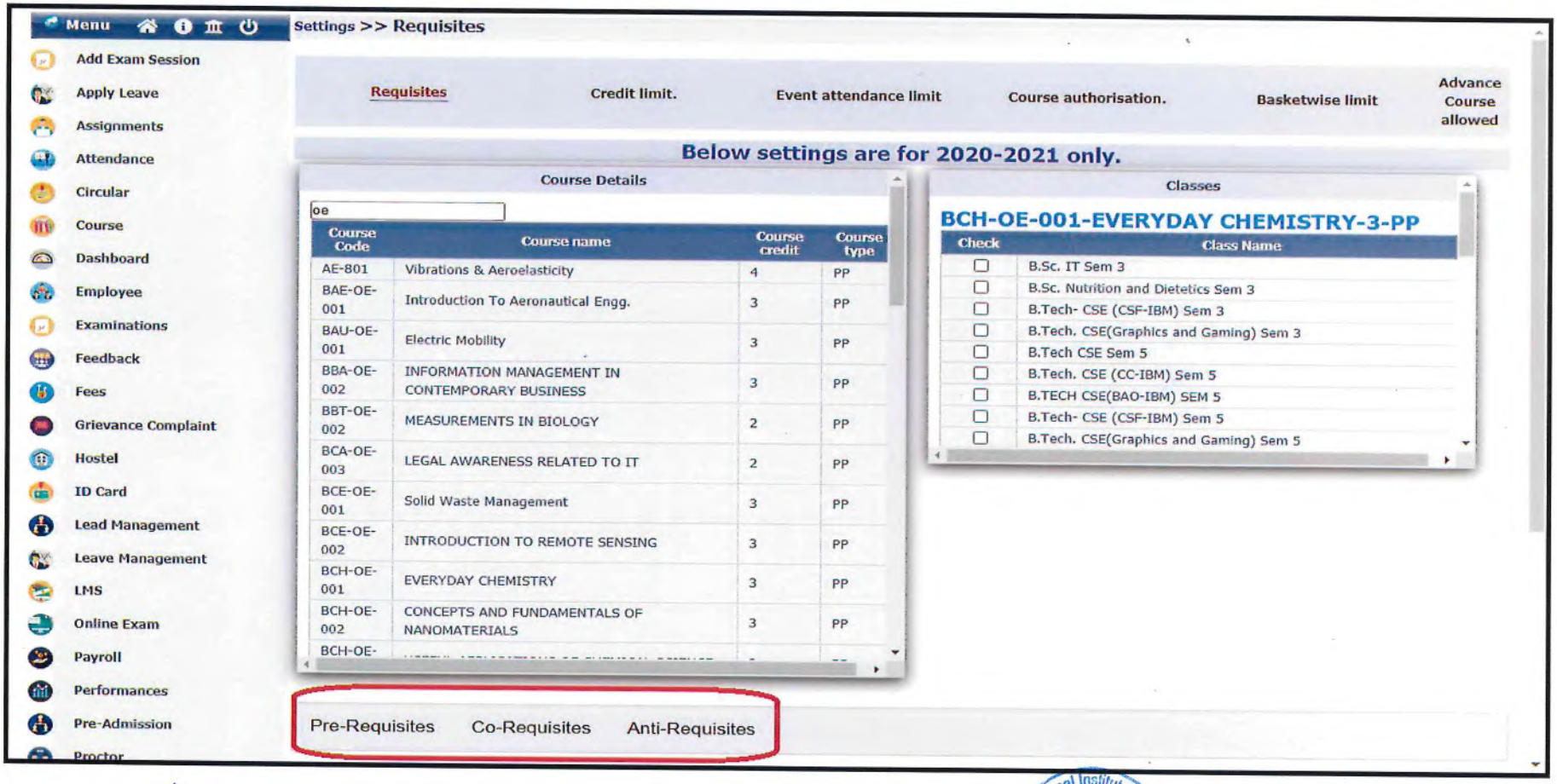

Figure 2.12: Setting of Pre/Co/Anti- Requisites

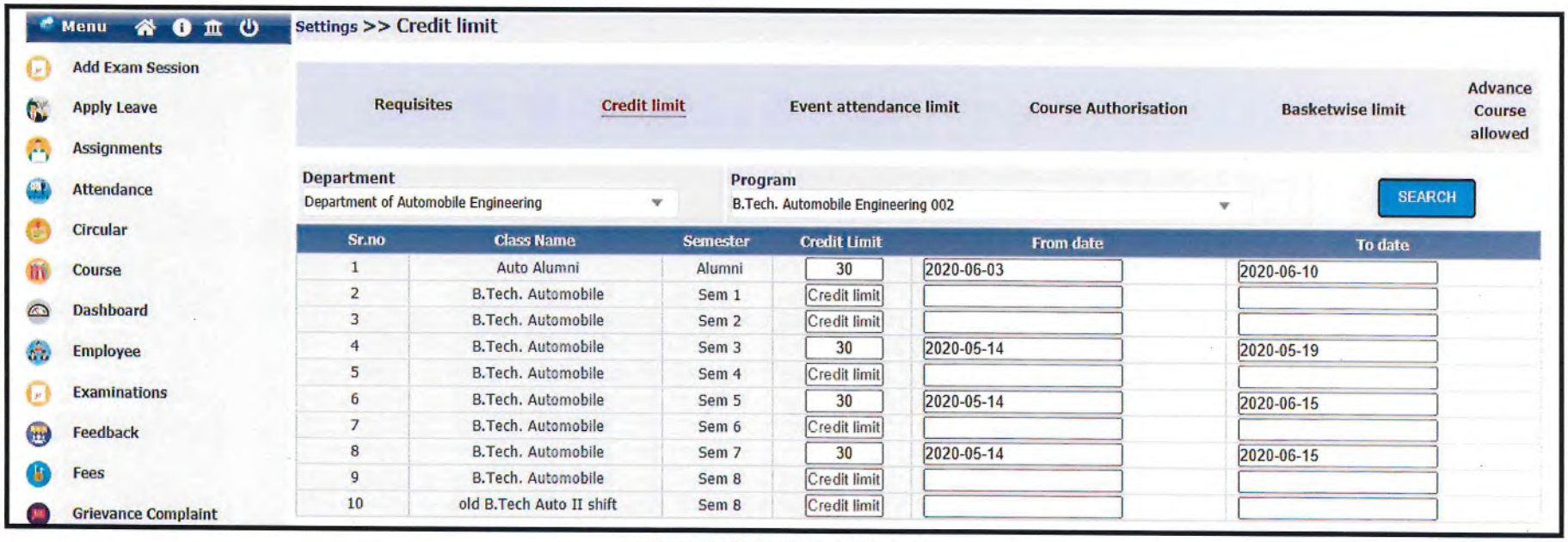

Figure 2.13: Credit Limit Window

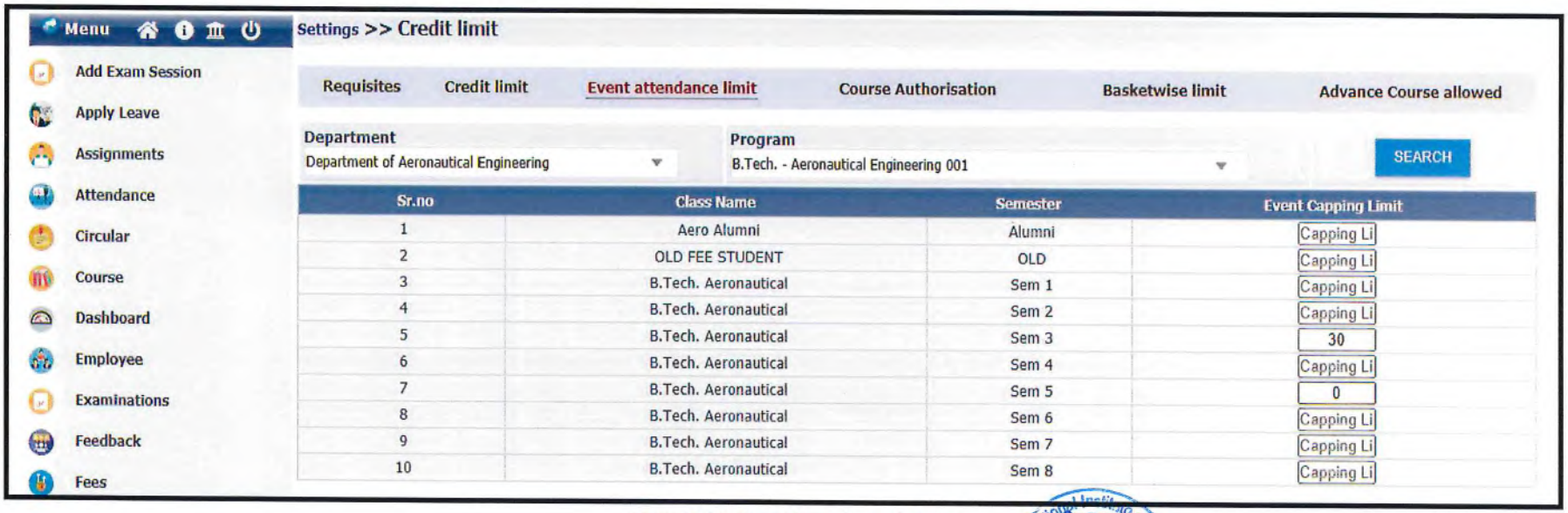

Figure 2.14: Event Attendance Capping

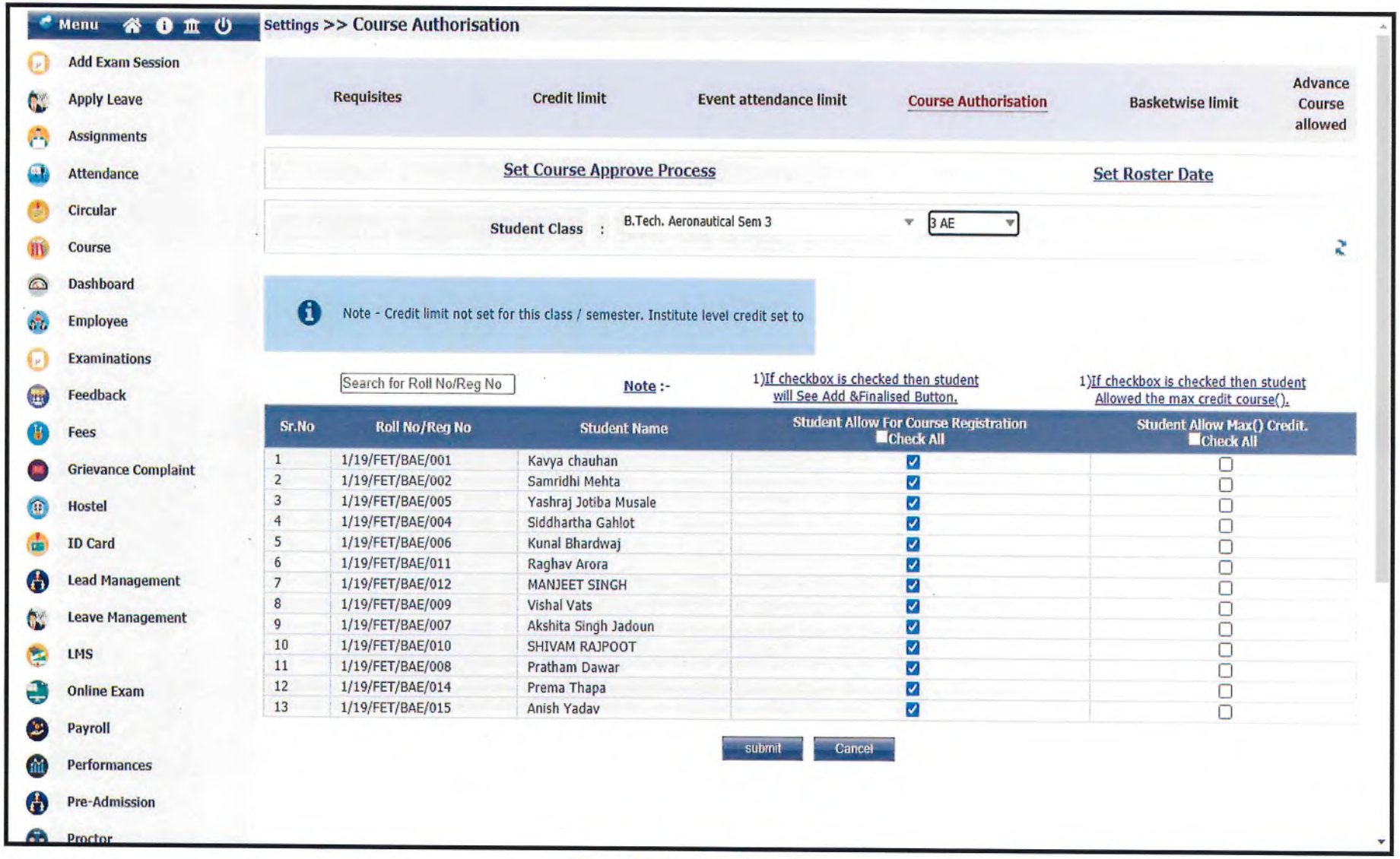

Figure 2.15: Course Authorization

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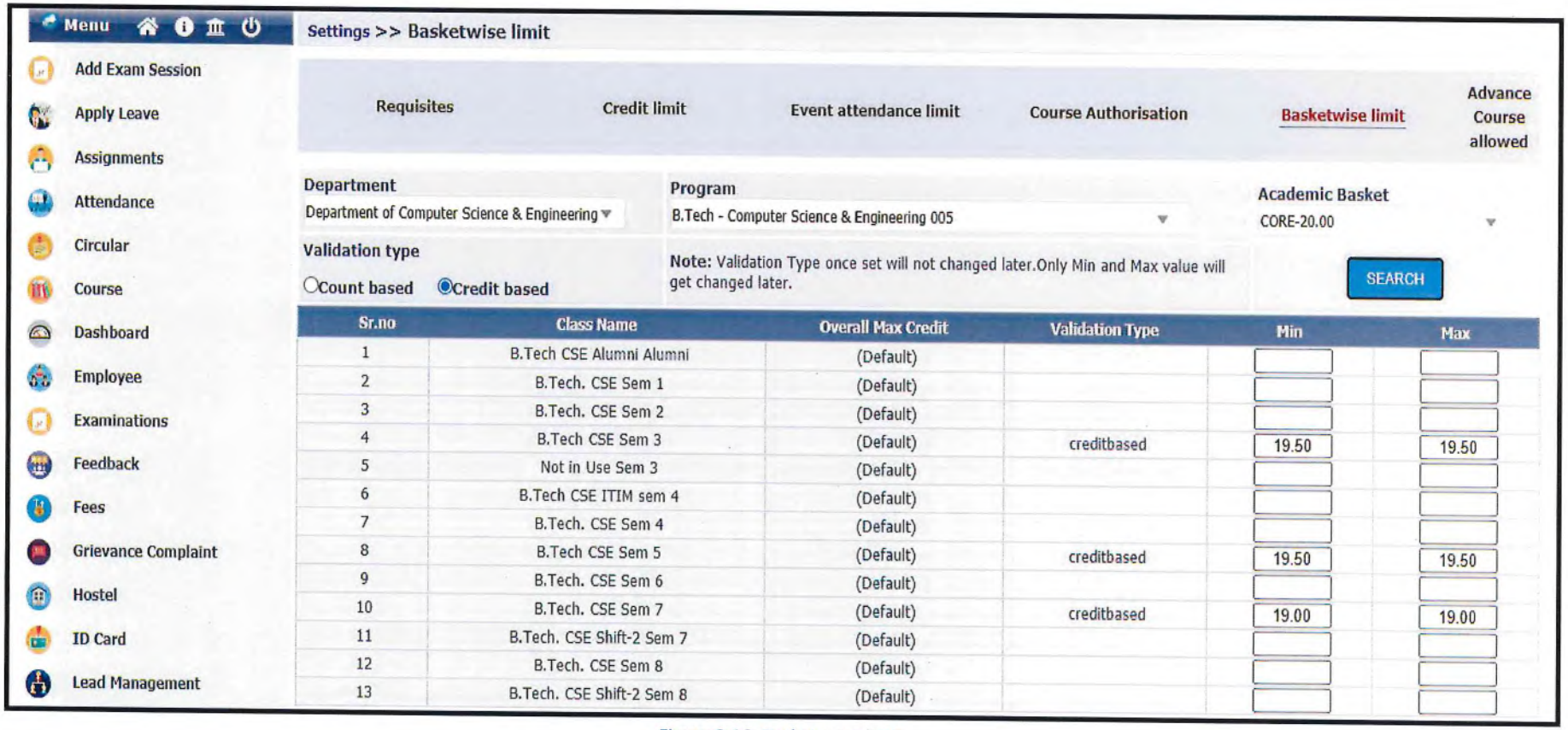

Figure 2.16: Basket-wise limit

- Once all the values under all relevant fields are entered by the timetable coordinator, allowed students are able to proceed with their registration process.
- The students when apply for the subject are able to modify their registration before their registration for that subject is approved, and in case, the change is required after approval, they need to take special permission.

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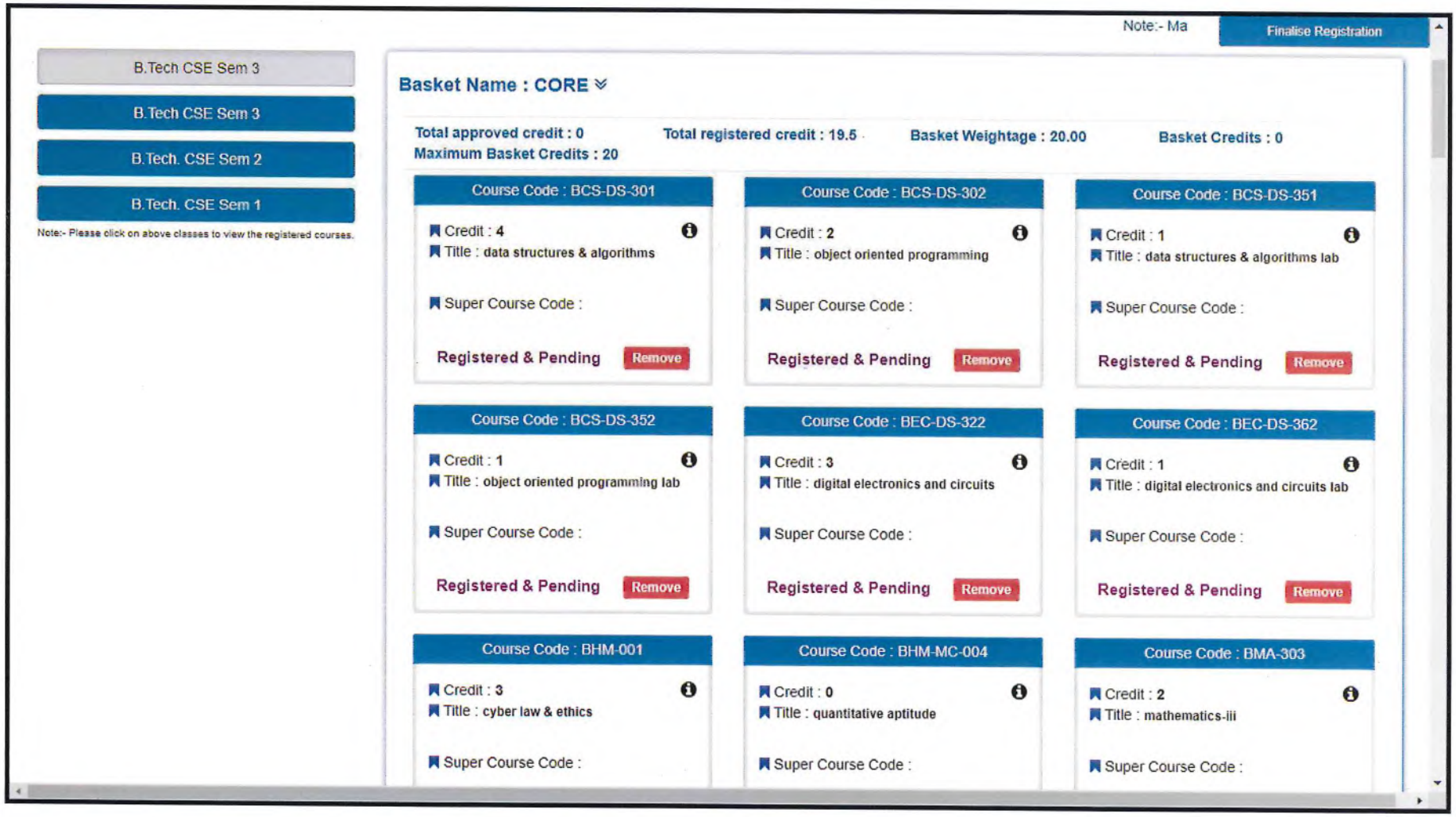

Figure 2.17: Registration Window of Student with "Registered & Approval pending Courses"

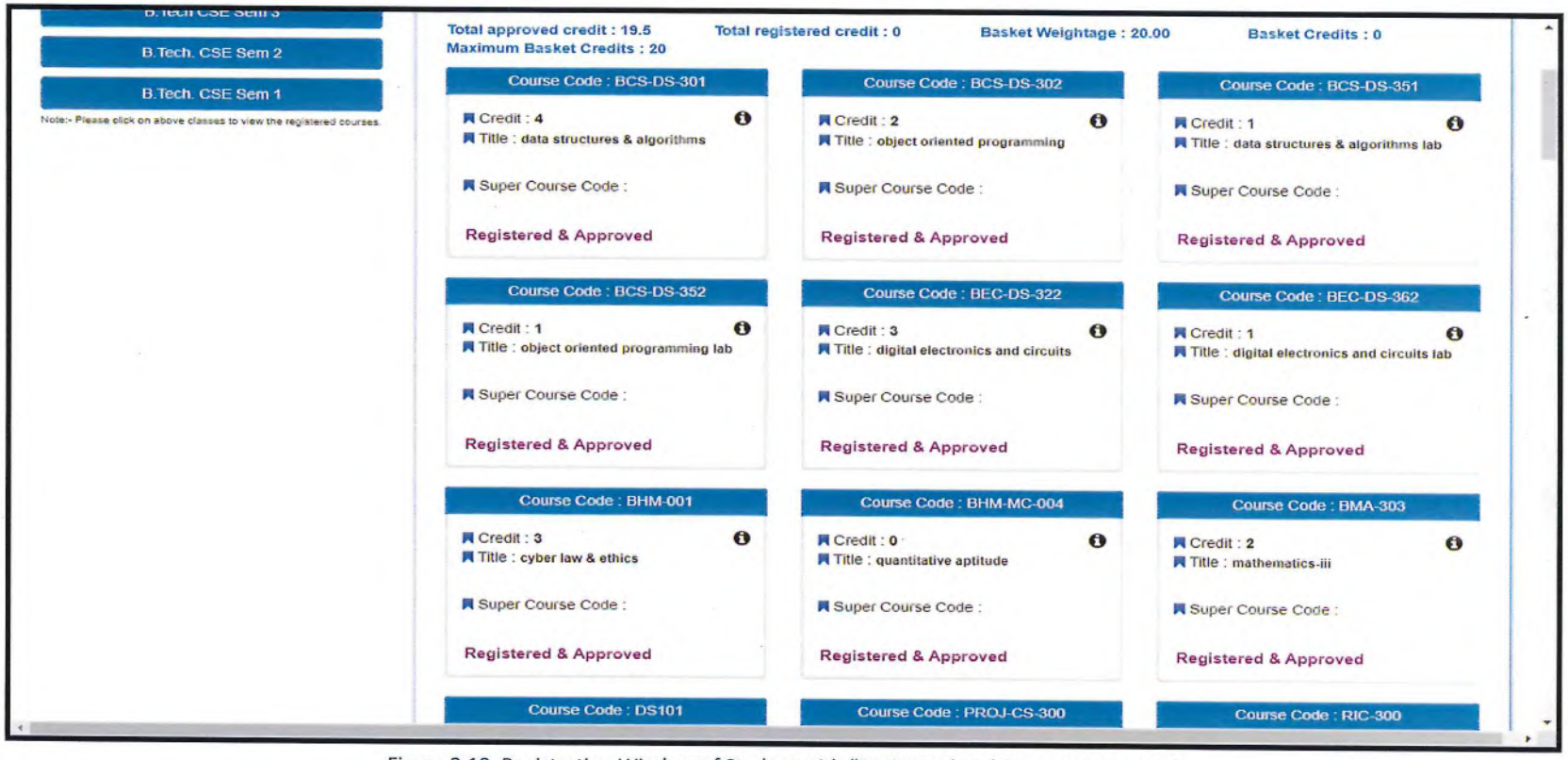

Figure 2.18: Registration Window of Student with "Registered and Approved Courses"

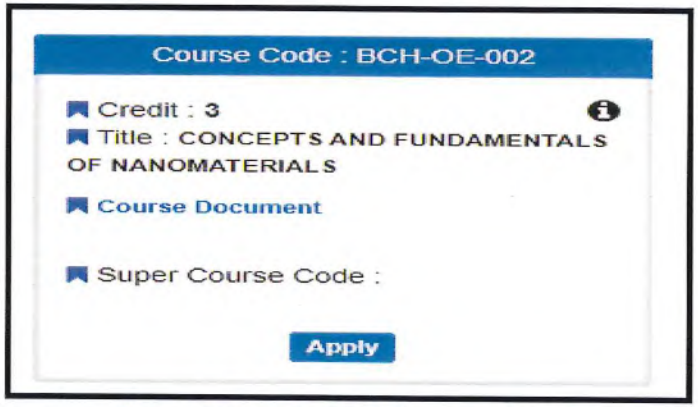

Figure 2.19: Sample of "Not Registered Course"

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STEP 4: ASSIGNING SECTIONS –

- Since the students are promoted to new class, there is requirement of assigning the desired sections to them so that different classes can be created. This is achievable through Setting >> Assign Section/Division to student

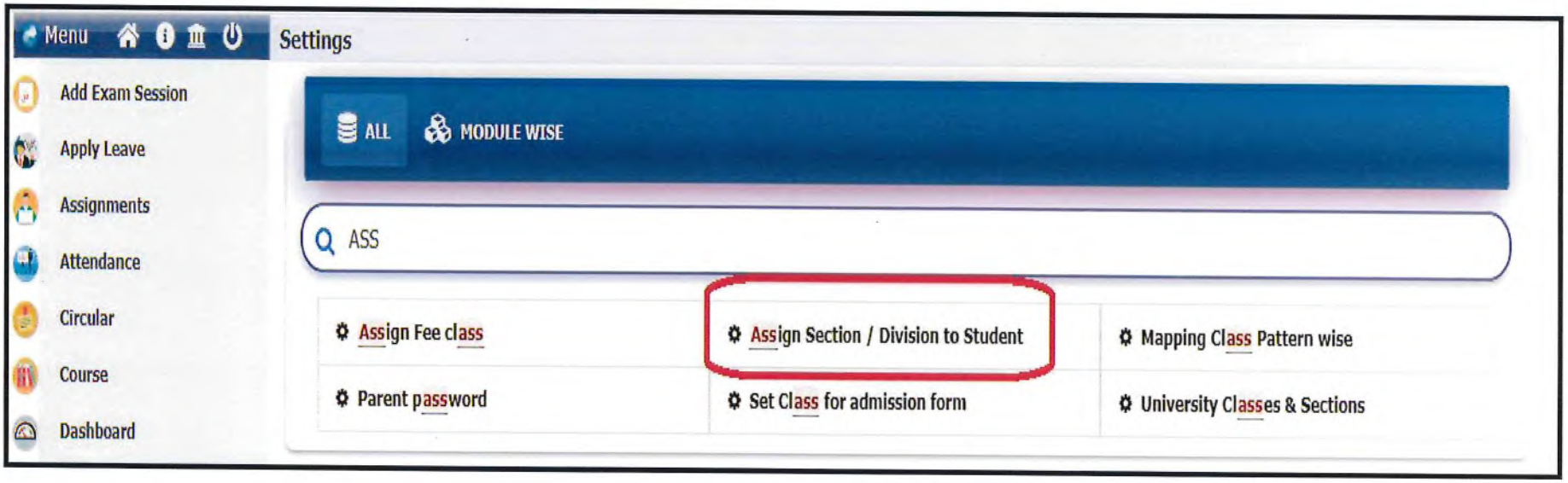

Figure 2.20: Assign Section/Division to Student

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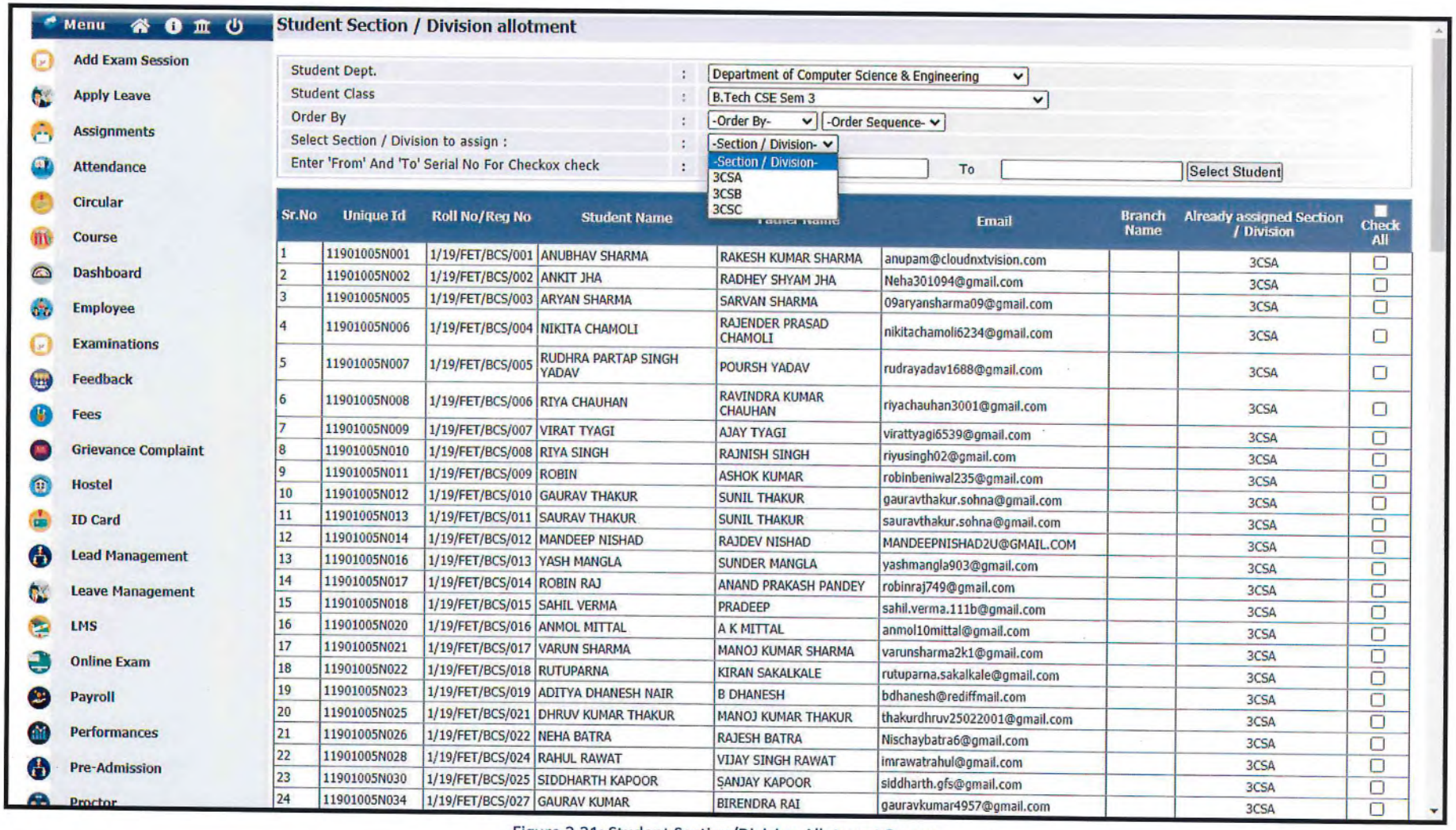

Student Section / Division allotment

Student Dept.	:	Department of Computer Science & Engineering
Student Class	:	B.Tech CSE Sem 3
Order By	:	-Order By- -Order Sequence-
Select Section / Division to assign :	:	-Section / Division-
Enter 'From' And 'To' Serial No For Checkox check	:	To Select Student

-Section / Division-
3CSA
3CSB
3CSC

Sr.No	Unique Id	Roll No/Reg No	Student Name	Father Name	Email	Branch Name	Already assigned Section / Division	Check All
1	11901005N001	1/19/FET/BCS/001	ANUBHAV SHARMA	RAKESH KUMAR SHARMA	anupam@cloudnxtvision.com		3CSA	
2	11901005N002	1/19/FET/BCS/002	ANKIT JHA	RADHEY SHYAM JHA	Neha301094@gmail.com		3CSA	
3	11901005N005	1/19/FET/BCS/003	ARYAN SHARMA	SARVAN SHARMA	09aryansharma09@gmail.com		3CSA	
4	11901005N006	1/19/FET/BCS/004	NIKITA CHAMOLI	RAJENDER PRASAD CHAMOLI	nikitachamoli6234@gmail.com		3CSA	
5	11901005N007	1/19/FET/BCS/005	RUDHRA PARTAP SINGH YADAV	POURSH YADAV	rudrayadav1688@gmail.com		3CSA	
6	11901005N008	1/19/FET/BCS/006	RIYA CHAUHAN	RAVINDRA KUMAR CHAUHAN	riyachauhan3001@gmail.com		3CSA	
7	11901005N009	1/19/FET/BCS/007	VIRAT TYAGI	AJAY TYAGI	virattyagi6539@gmail.com		3CSA	
8	11901005N010	1/19/FET/BCS/008	RIYA SINGH	RAJNISH SINGH	riyusingh02@gmail.com		3CSA	
9	11901005N011	1/19/FET/BCS/009	ROBIN	ASHOK KUMAR	robinbeniwal235@gmail.com		3CSA	
10	11901005N012	1/19/FET/BCS/010	GAURAV THAKUR	SUNIL THAKUR	gauravthakur.sohna@gmail.com		3CSA	
11	11901005N013	1/19/FET/BCS/011	SAURAV THAKUR	SUNIL THAKUR	sauravthakur.sohna@gmail.com		3CSA	
12	11901005N014	1/19/FET/BCS/012	MANDEEP NISHAD	RAJDEV NISHAD	MANDEEPNISHAD2U@GMAIL.COM		3CSA	
13	11901005N016	1/19/FET/BCS/013	YASH MANGLA	SUNDER MANGLA	yashmangla903@gmail.com		3CSA	
14	11901005N017	1/19/FET/BCS/014	ROBIN RAJ	ANAND PRAKASH PANDEY	robinraj749@gmail.com		3CSA	
15	11901005N018	1/19/FET/BCS/015	SAHIL VERMA	PRADEEP	sahil.verma.111b@gmail.com		3CSA	
16	11901005N020	1/19/FET/BCS/016	ANMOL MITTAL	A K MITTAL	anmol10mittal@gmail.com		3CSA	
17	11901005N021	1/19/FET/BCS/017	VARUN SHARMA	MANOJ KUMAR SHARMA	varunsharma2k1@gmail.com		3CSA	
18	11901005N022	1/19/FET/BCS/018	RUTUPARNA	KIRAN SAKALKALE	rutuparna.sakalkale@gmail.com		3CSA	
19	11901005N023	1/19/FET/BCS/019	ADITYA DHANESH NAIR	B DHANESH	bdhanesh@rediffmail.com		3CSA	
20	11901005N025	1/19/FET/BCS/021	DHRUV KUMAR THAKUR	MANOJ KUMAR THAKUR	thakurdhruv25022001@gmail.com		3CSA	
21	11901005N026	1/19/FET/BCS/022	NEHA BATRA	RAJESH BATRA	Nischaybatra6@gmail.com		3CSA	
22	11901005N028	1/19/FET/BCS/024	RAHUL RAWAT	VIJAY SINGH RAWAT	imrawatrahul@gmail.com		3CSA	
23	11901005N030	1/19/FET/BCS/025	SIDDHARTH KAPOOR	SANJAY KAPOOR	siddharth.gfs@gmail.com		3CSA	
24	11901005N034	1/19/FET/BCS/027	GAURAV KUMAR	BIRENDRA RAI	gauravkumar4957@gmail.com		3CSA	

Figure 2.21: Student Section/Division Allotment Screen

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STEP 5: PRACTICAL / ELECTIVE BATCH CREATION –

- There are certain courses for a class that are mandatory and certain courses are Electives. In order to separate the student lists for the Elective Courses, the batch for the particular Elective courses is created.
- There is "HOD Master" setting through which the batch creation and course allotment tasks are performed.
- List of all the groups for a particular class can be viewed from the 'View Elective Group' window and can be updated as and when required from 'Update Elective Group' window.
- Similarly, the practical batches can be created and updated for the practical courses. The practical courses are linked with the practical groups created through 'Link batch' tab.

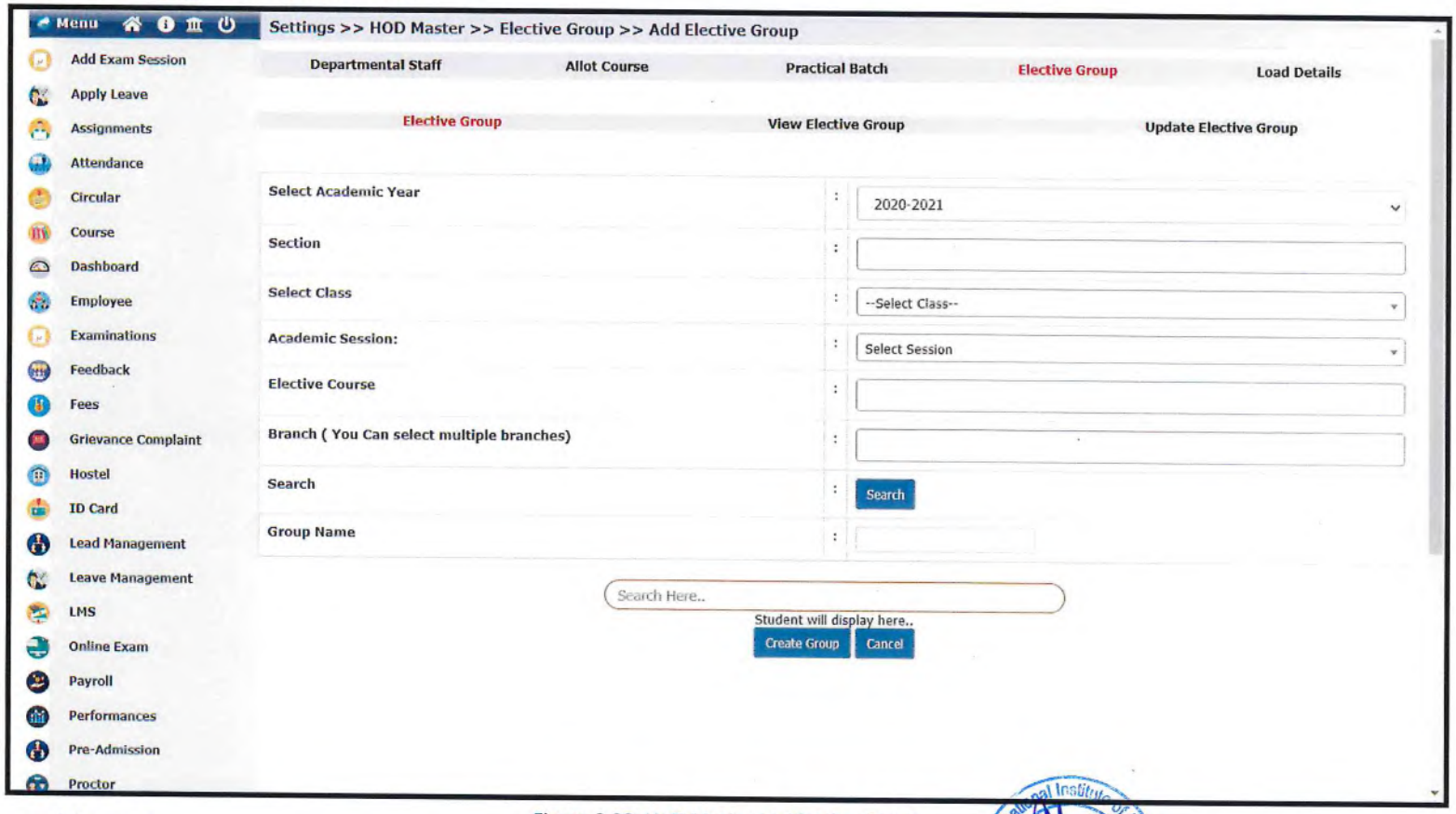

Figure 2.22: HoD Master >> Elective Group

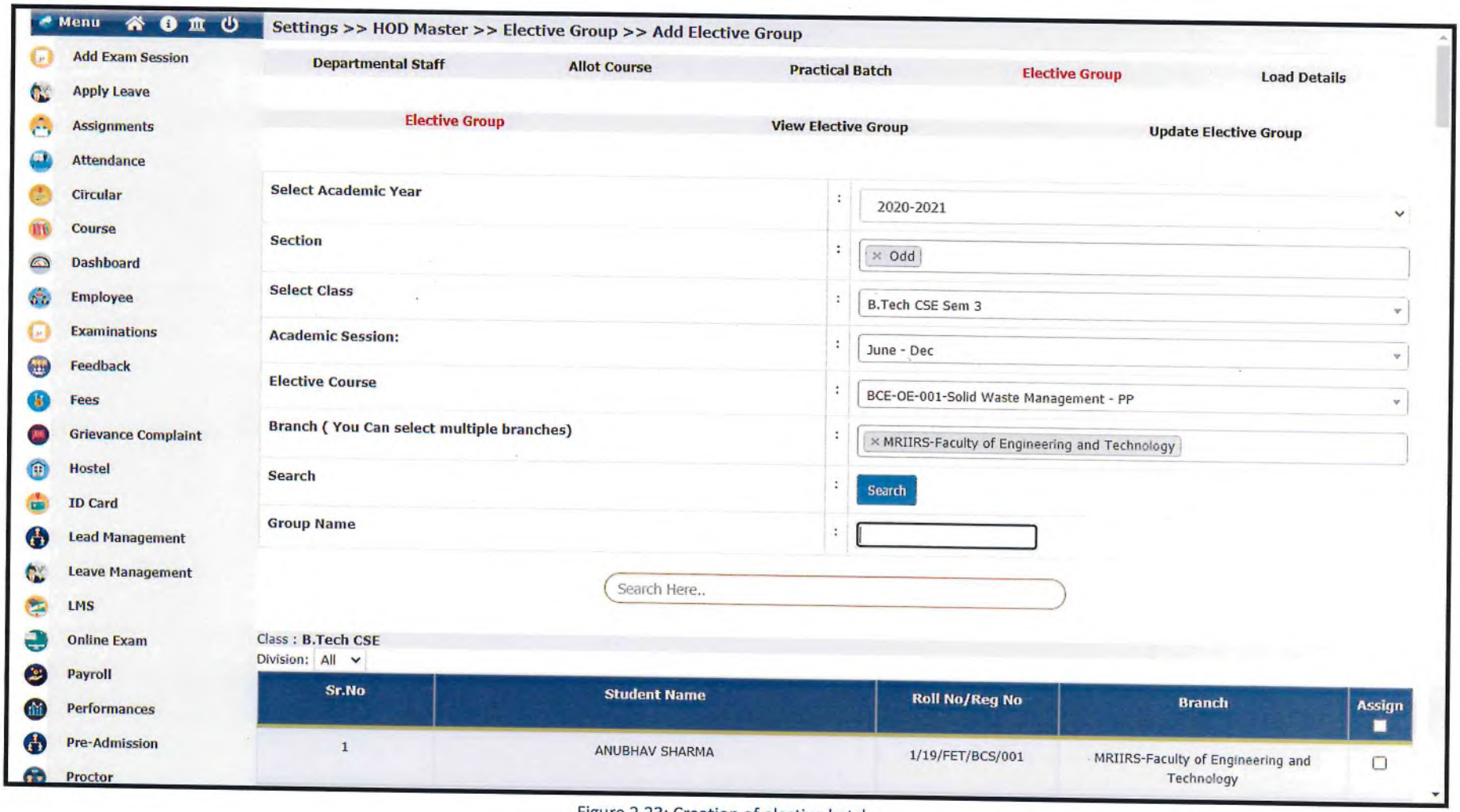

Figure 2.23: Creation of elective batch

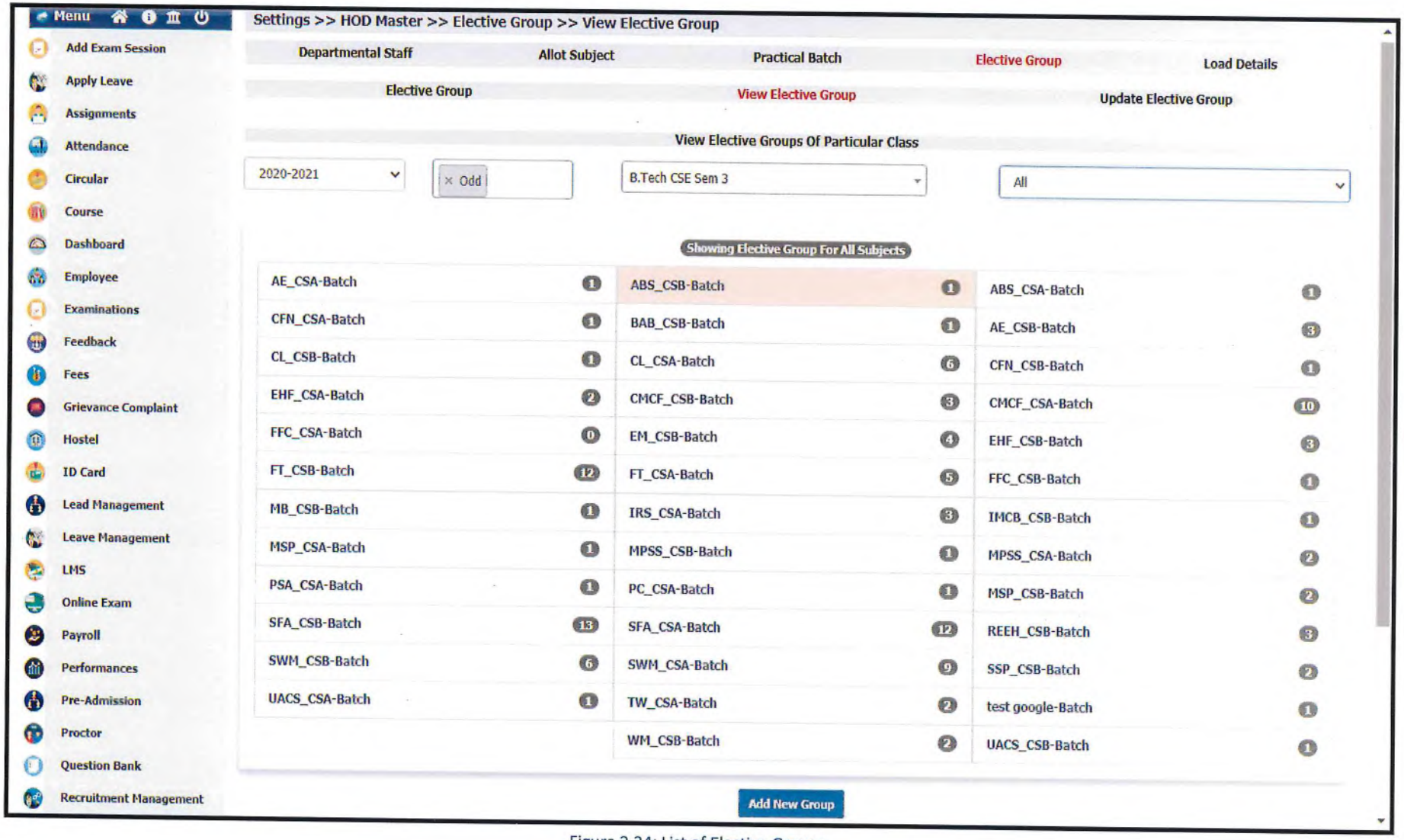

Figure 2.24: List of Elective Groups

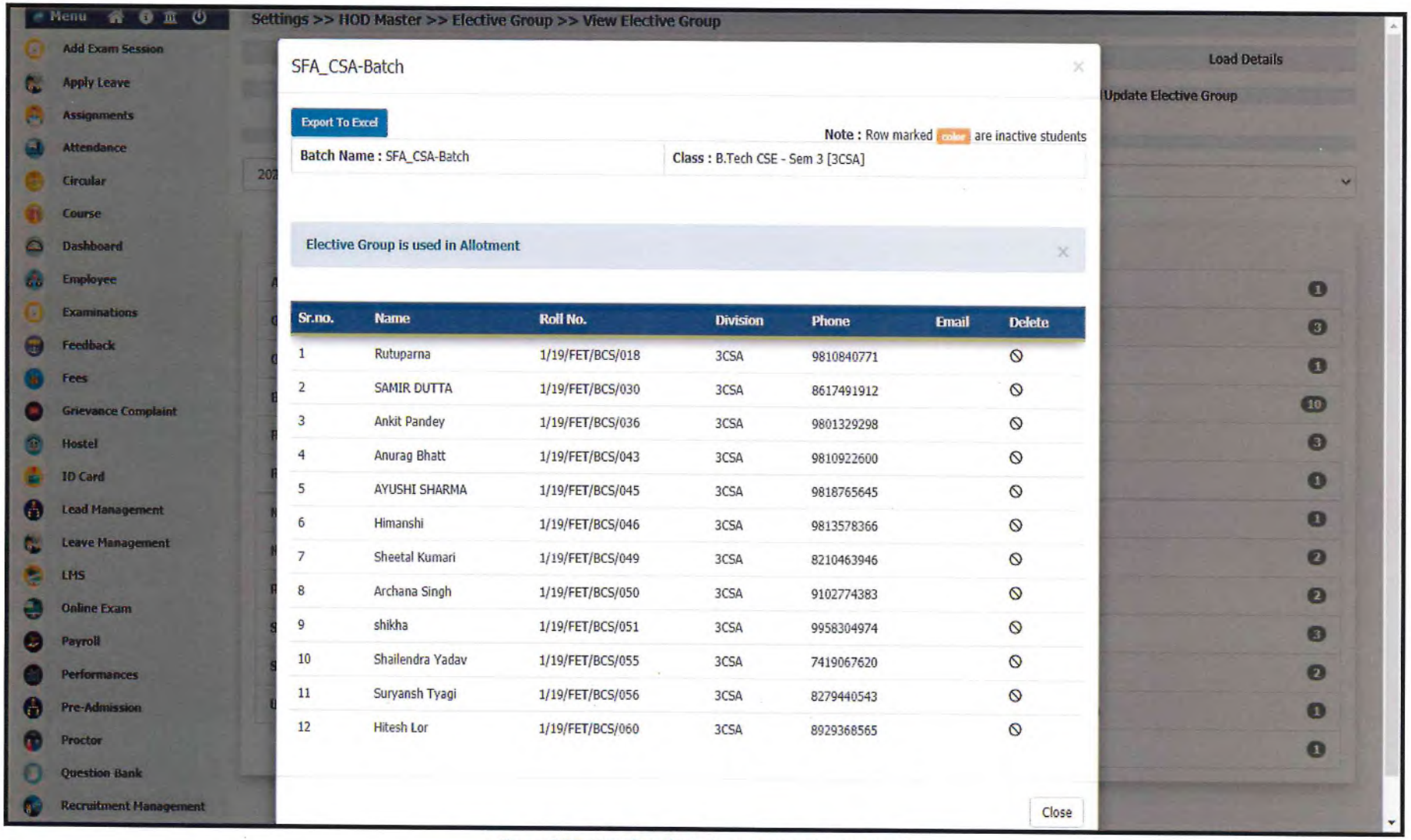

Figure 2.25: List of students in particular Elective Batch

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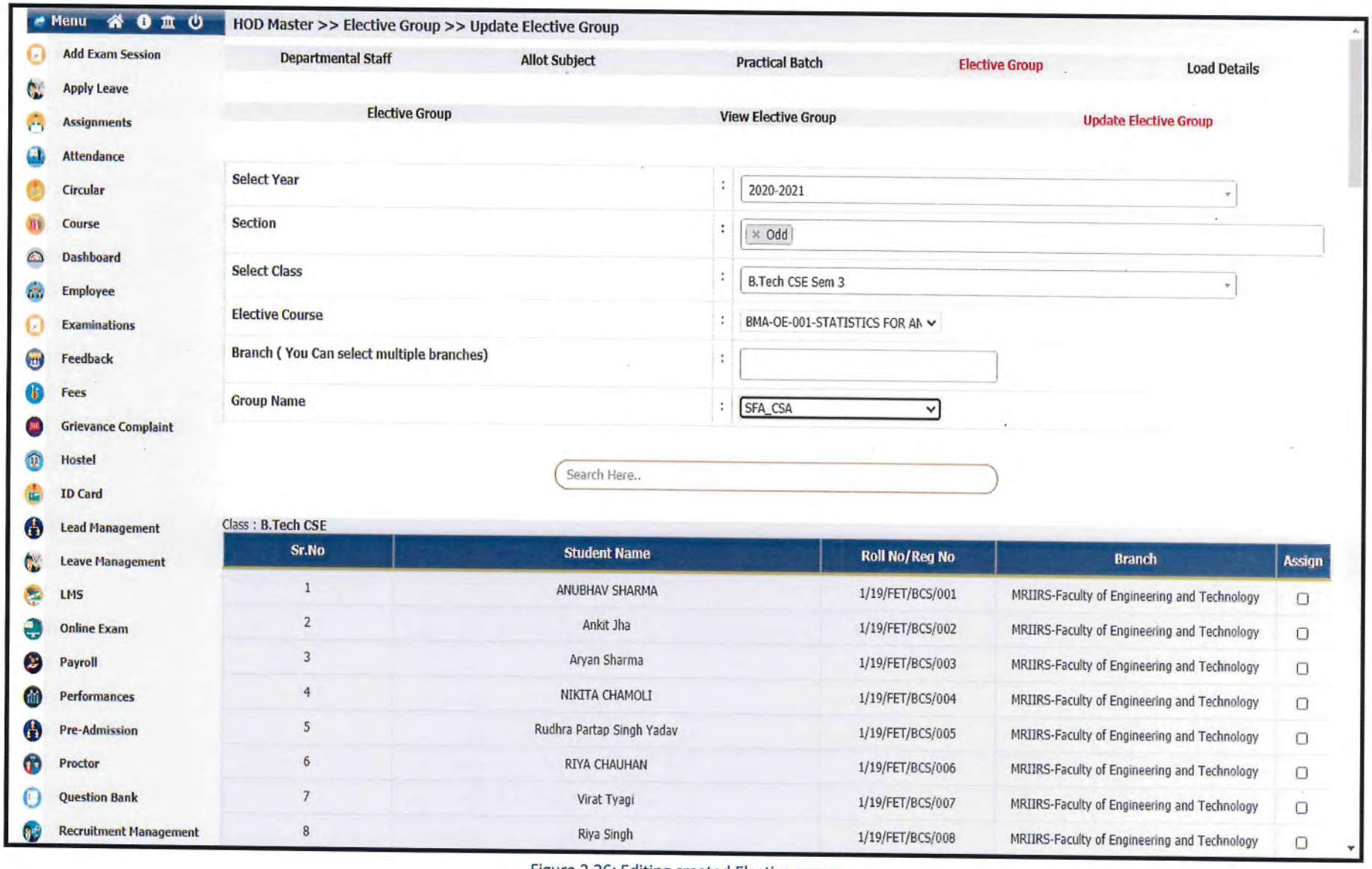

Figure 2.26: Editing created Elective group

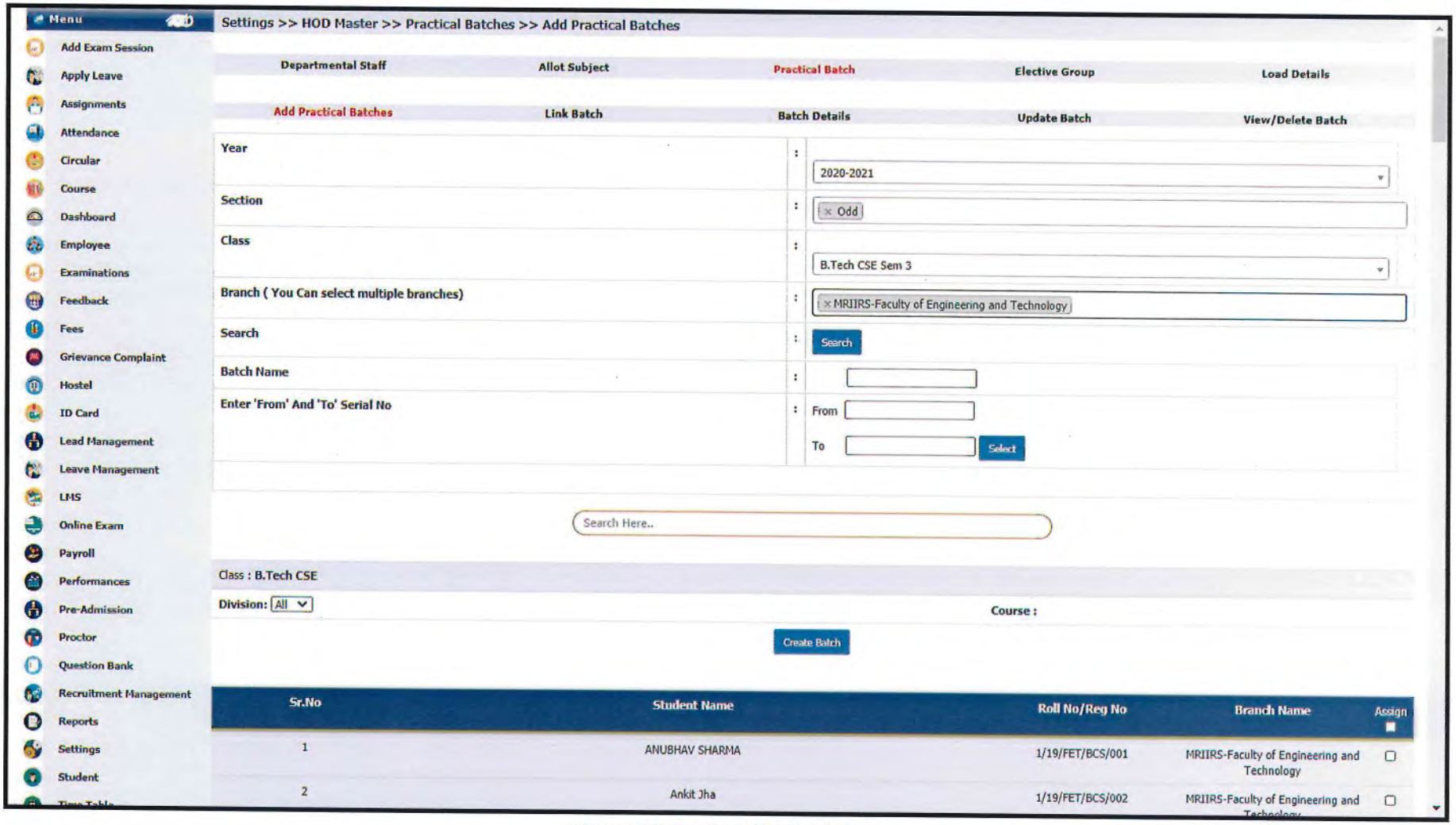

Figure 2.27: Creation of Practical Batch

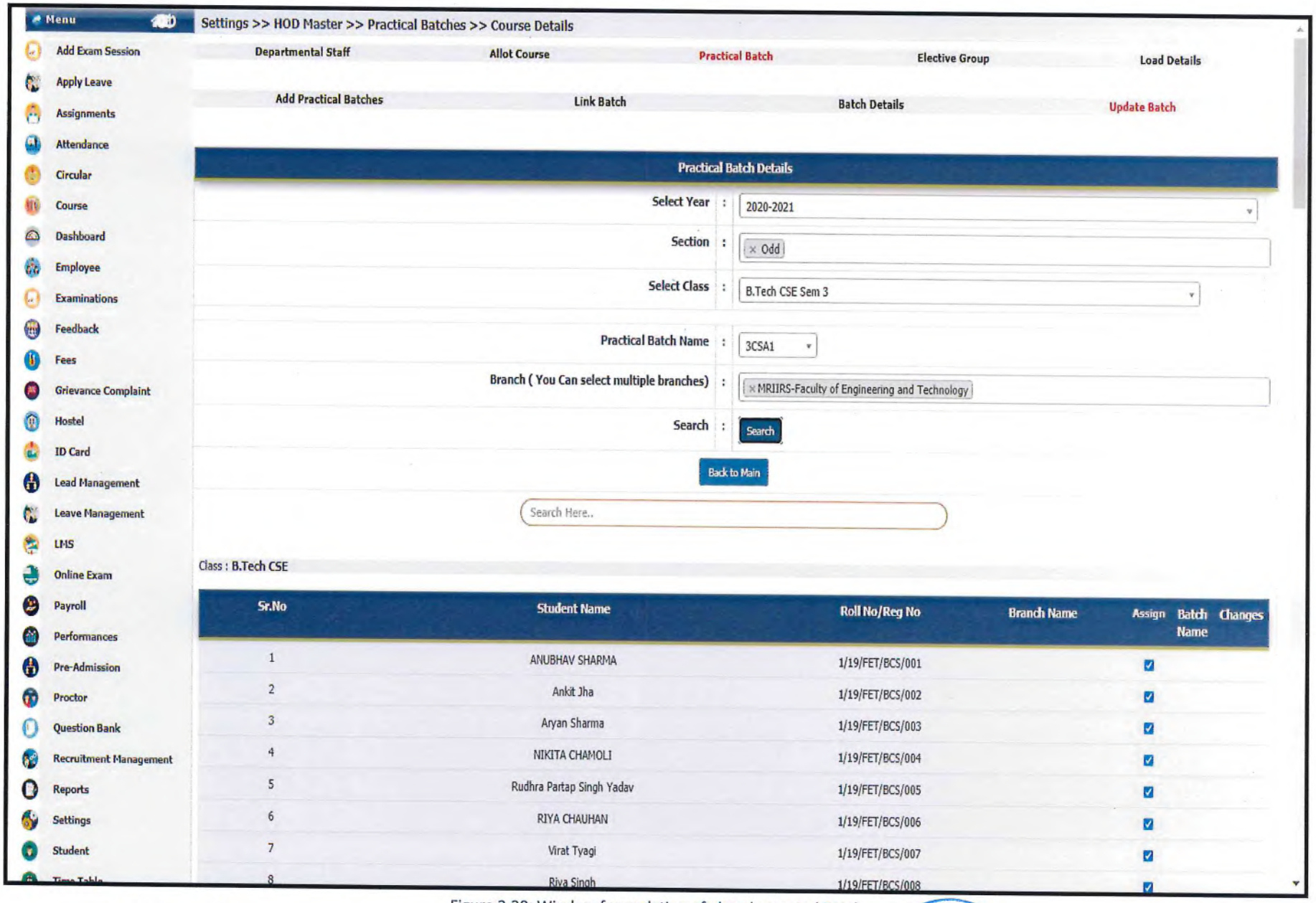

Figure 2.28: Window for updation of already created Batch

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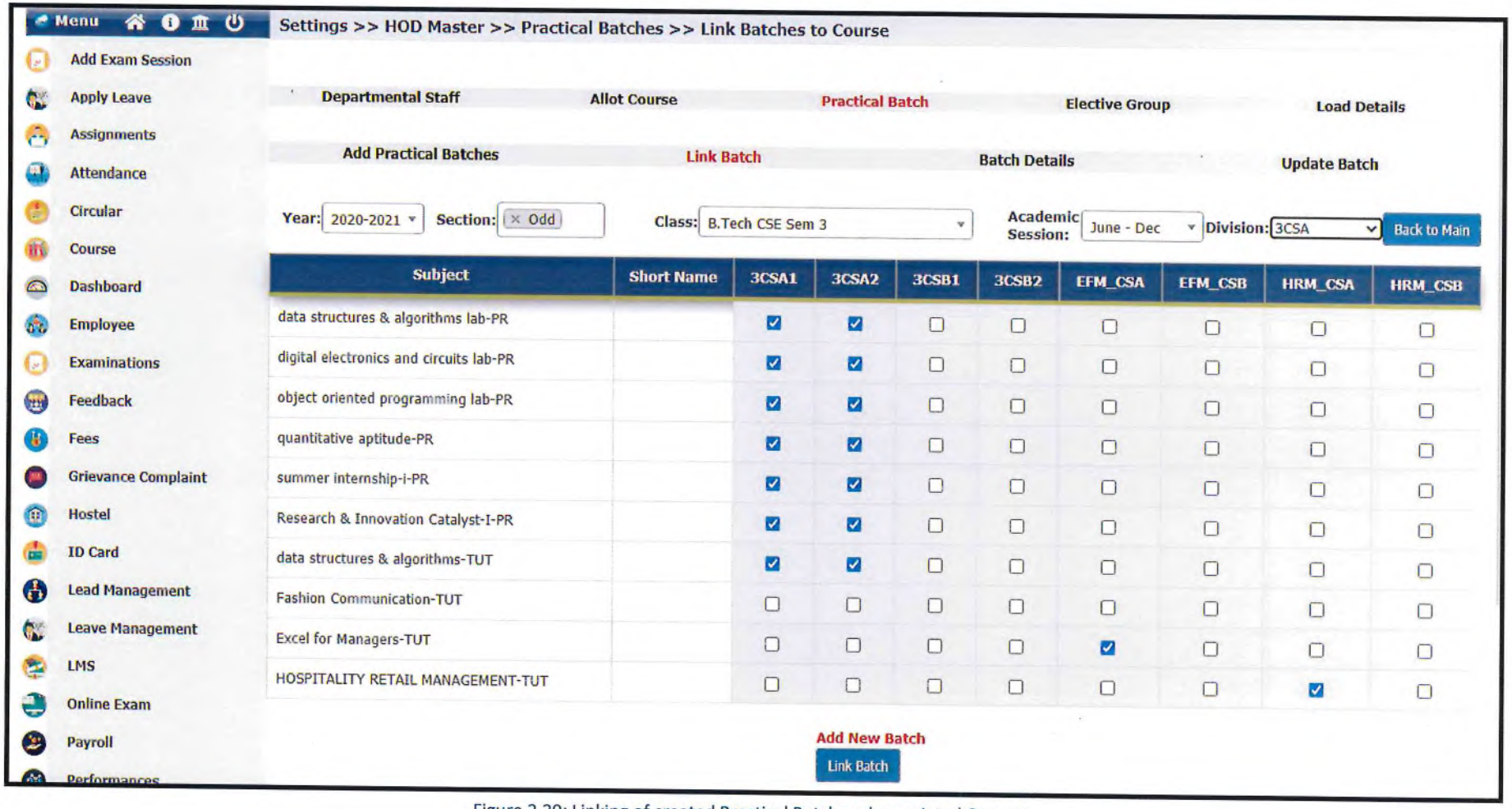

Figure 2.29: Linking of created Practical Batch and associated Courses

STEP 6: COURSE ALLOTMENT TO FACULTY MEMBERS –

- Once course creation, course program mapping and elective/practical batch creation is done, the next step is to do the binding between courses and the faculty member who will be taking that particular subject.
- Multiple faculties can be added for each course, since more than one faculty may handle lab courses.
- This allotment is done by EMS coordinator as per the approved teaching load. The steps followed for allotting courses are Settings >> HOD Master >> Allot Course.

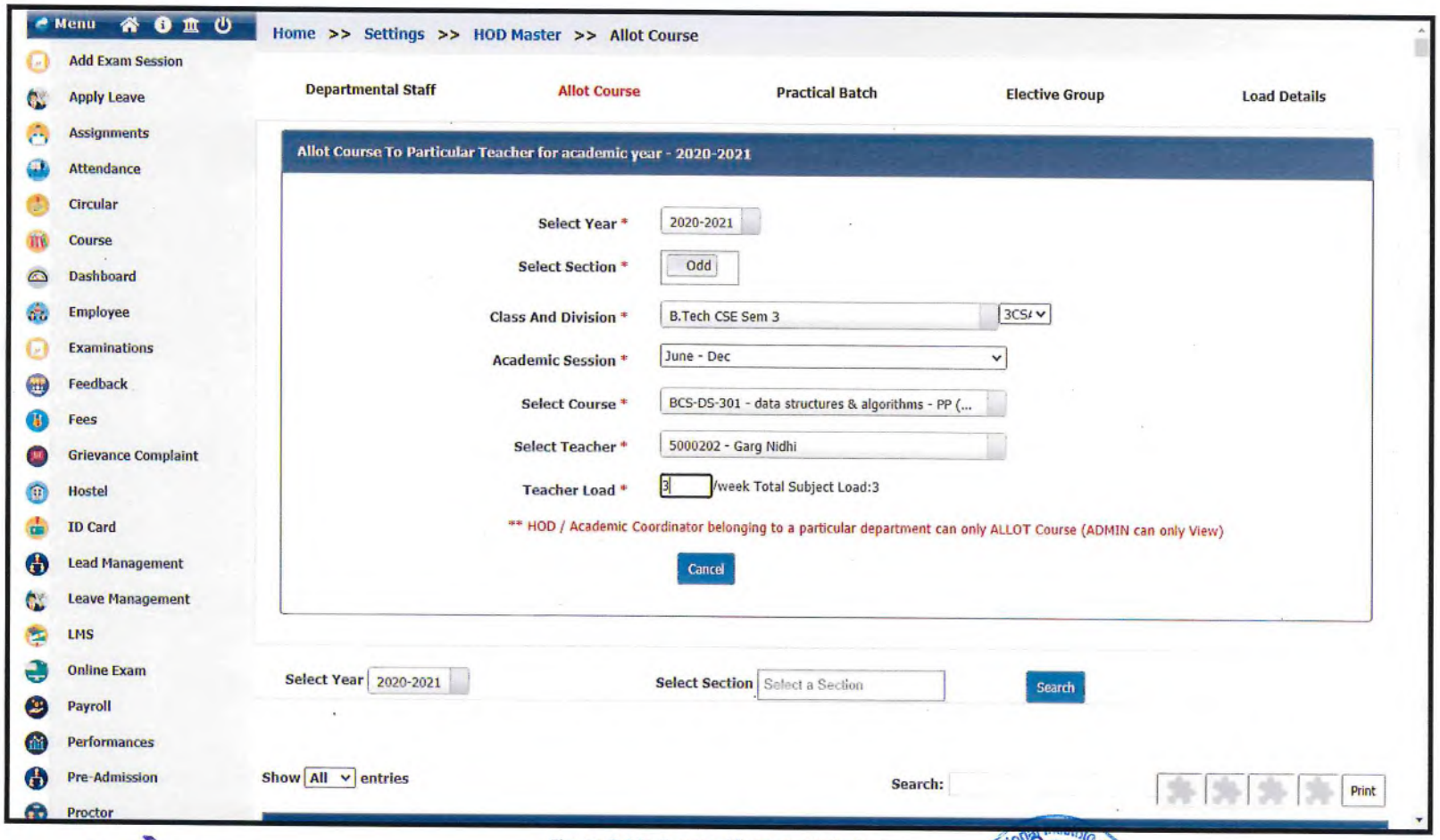

Figure 2.30: Course Allotment Window

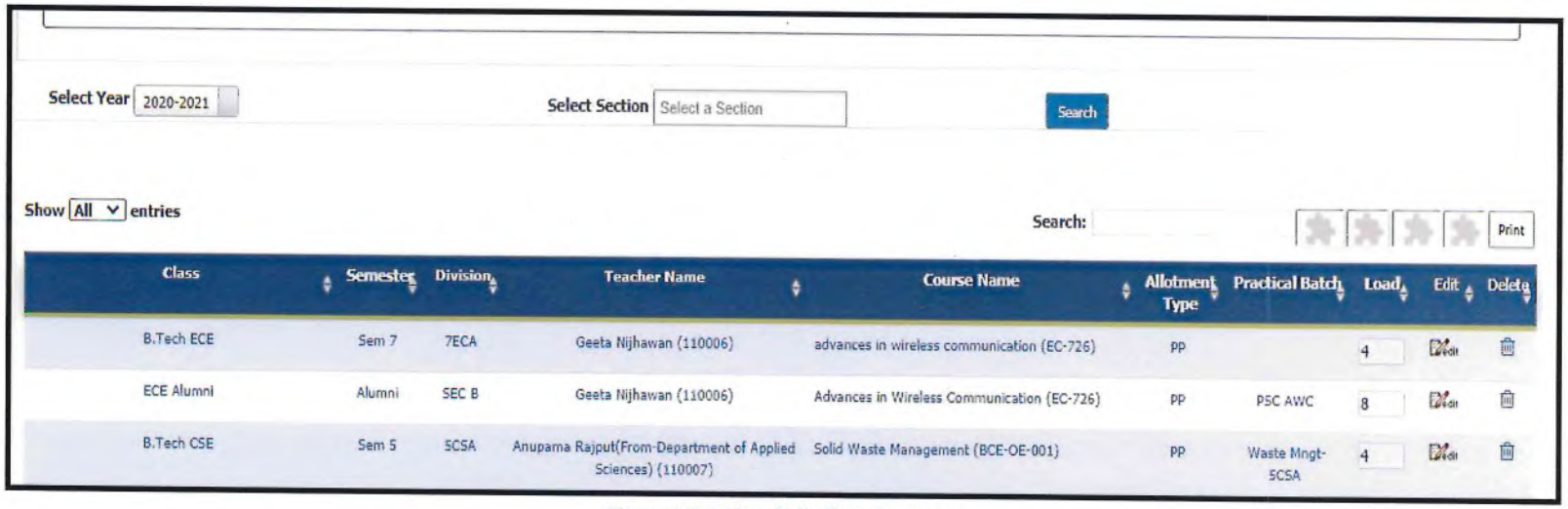

Figure 2.31: List of all alloted courses

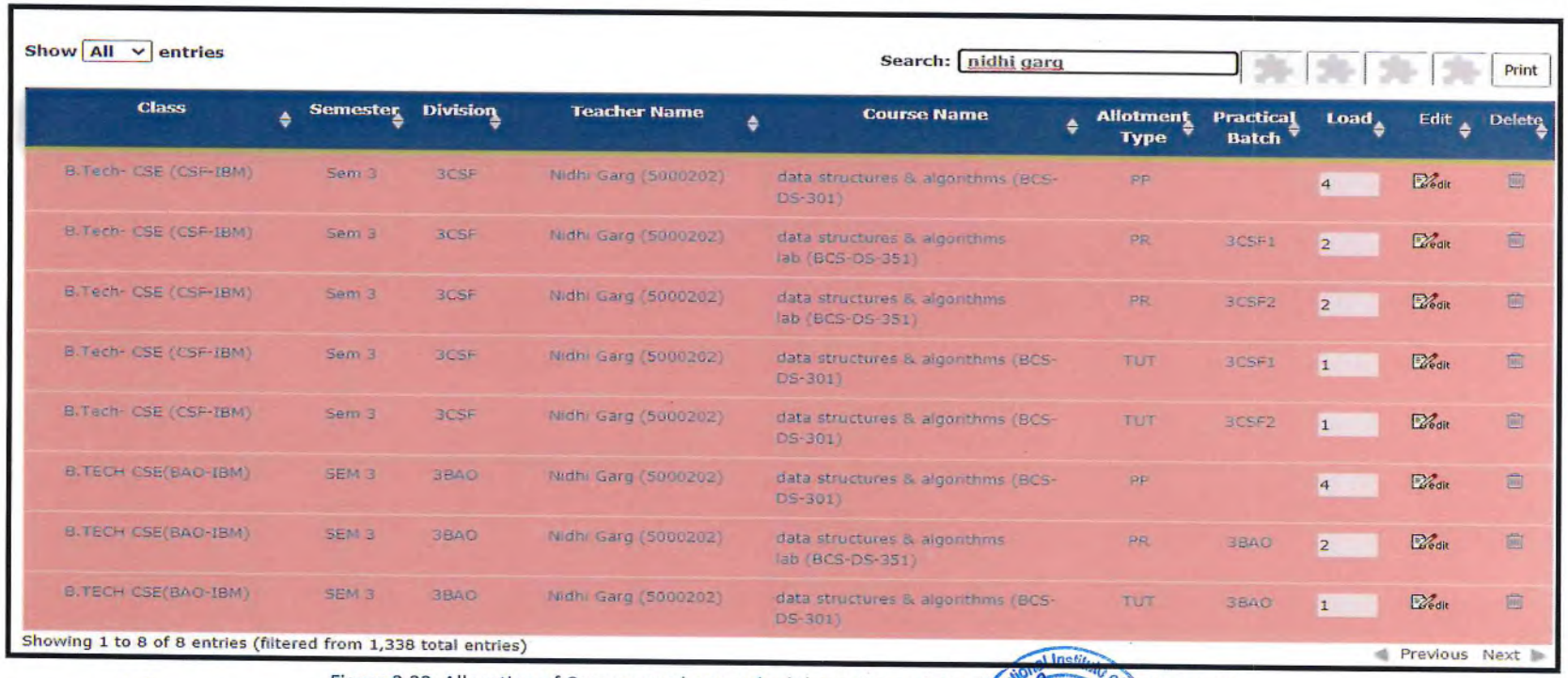

Figure 2.32: Allocation of Courses can be searched through search bar (faculty name based search)

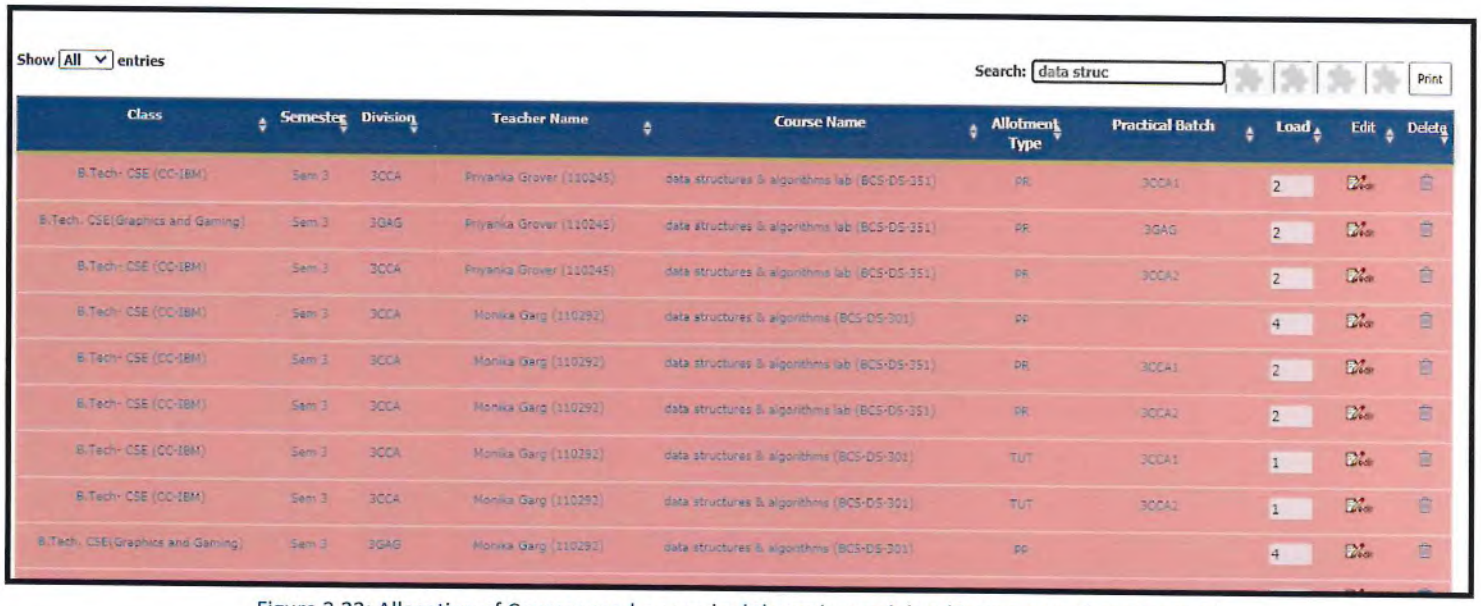

Figure 2.33: Allocation of Courses can be searched through search bar (Course name based search)

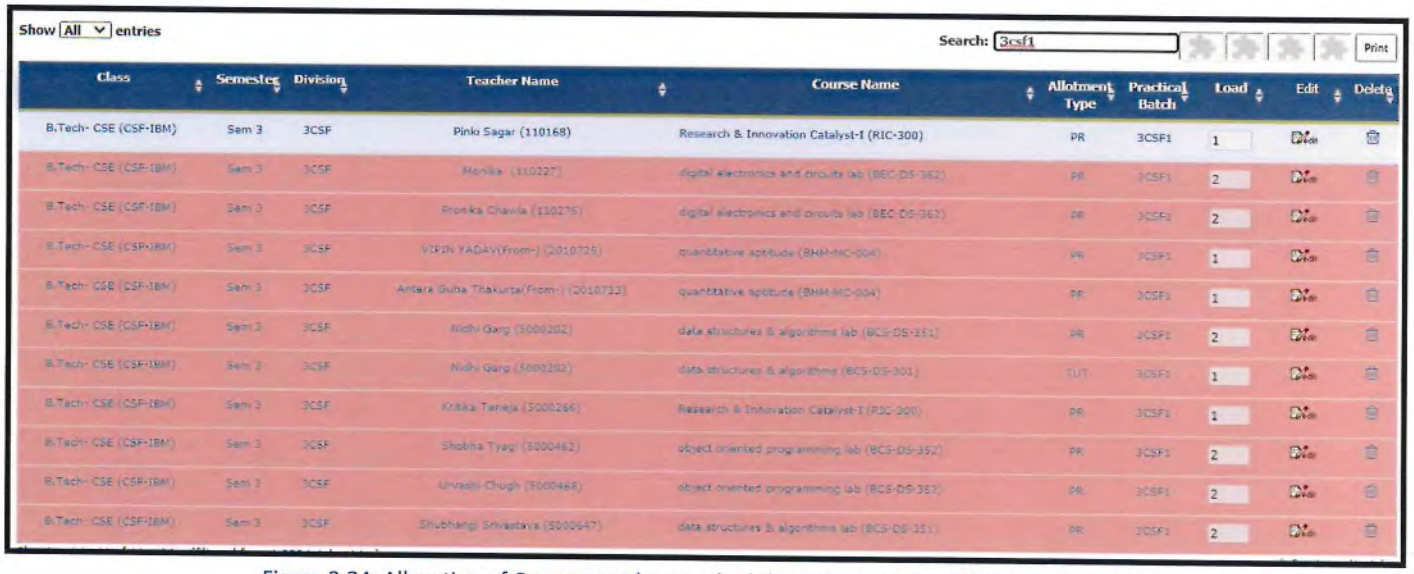

Figure 2.34: Allocation of Courses can be searched through search bar (Class based search)

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STEP 7: COURSE ALLOTMENT TO FACULTY MEMBERS –

- Once allotment is done, the EMS coordinators can now proceed with creation of class-wise timetable.
- In order to do so, the first step is preparing the timetable "University Structure" so that the timeslots for classes can be defined, which is present in "Settings".

University Schedule Structure

Back to Main | Add Lecture Timing

	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	holiday						
2	holiday						
3	holiday						
4	holiday						
5	holiday						
6	holiday						
7	holiday						
8	holiday						
9	holiday						
10	holiday						
11	holiday						
12	holiday						
13	holiday						

Number of Terms in a year	:	2
Starting date of Academic year	:	2020-05-25
Ending date of Academic year	:	2021-06-30
Holiday(s) of the week	:	Sunday,
No. of periods of a day	:	13
Lunch Break after	:	None
I Break after	:	None
II Break after	:	

Back to Main

Figure 2.35: Setting >> University Structure >> Add Lecture Timings

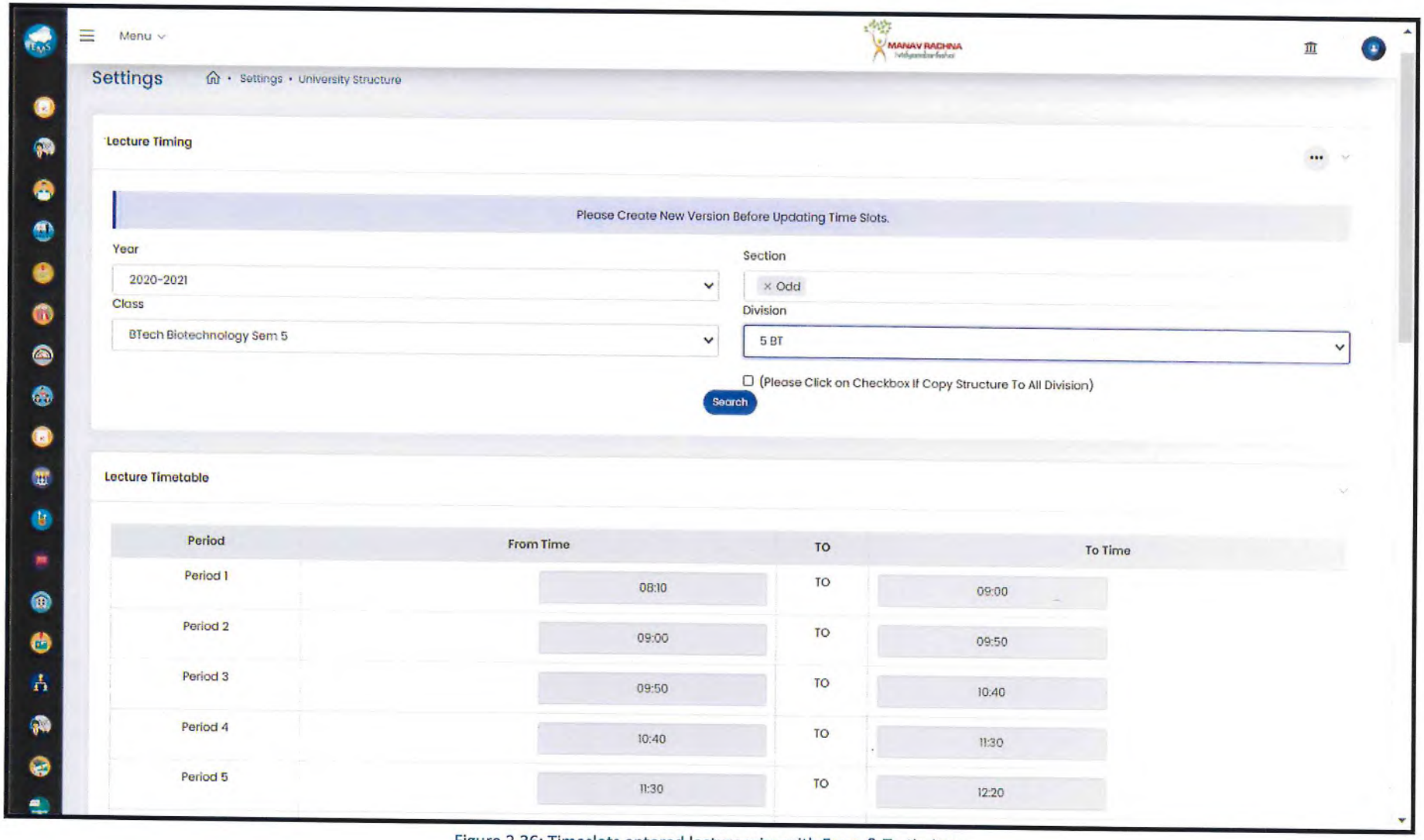

Figure 2.36: Timeslots entered lecture wise with From & To timings

- Timetable is then prepared and new versions can be added as and when required whenever there is some update in teaching load or there is break because of some other academic related event.

Figure 2.37: Main Window >> Time Table

- The values for all fields i.e. Academic Year, Section, Class and Divisions are to be selected and then the time table coordinators can proceed with time table preparation by clicking on "Prepare Timetable" button.

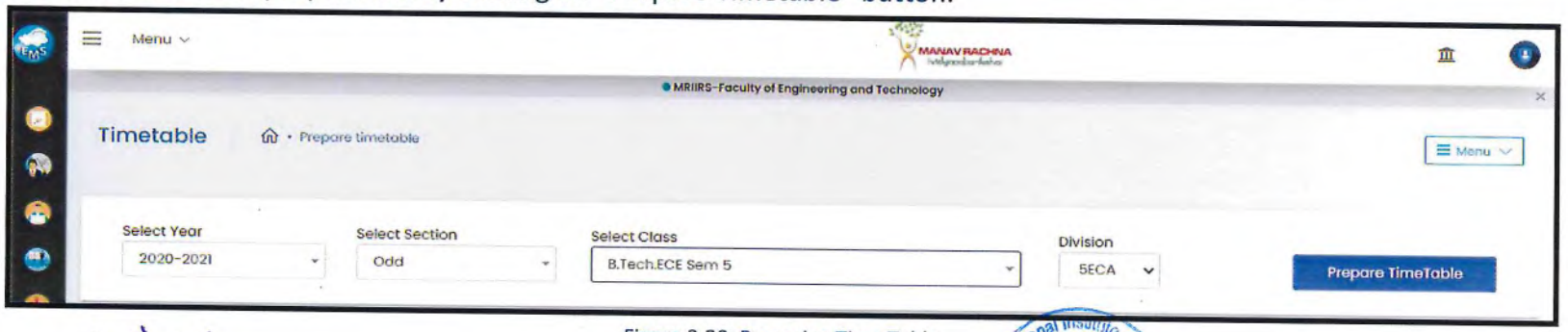

Figure 2.38: Preparing Time Table

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- New version of timetable can be created by clicking on "Add New version" which opens the window asking for Version details.

Figure 2.39: Adding New Version

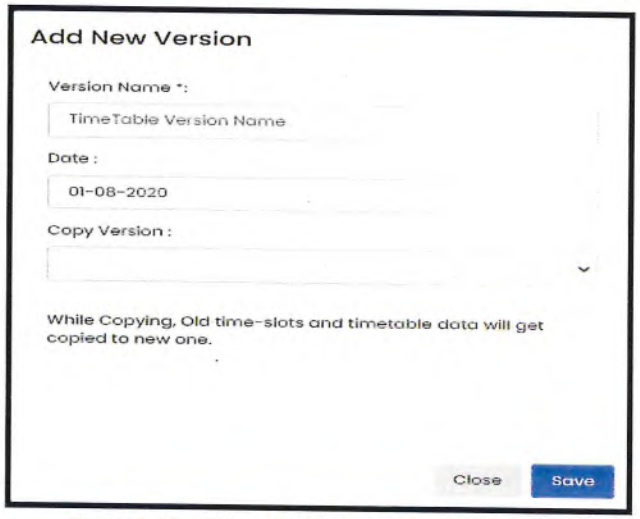

Figure 2.40: Adding of New Timetable Version

- Once version is created, to prepare the timetable for the created version, one has to click on "" icon present in row corresponding to created version.

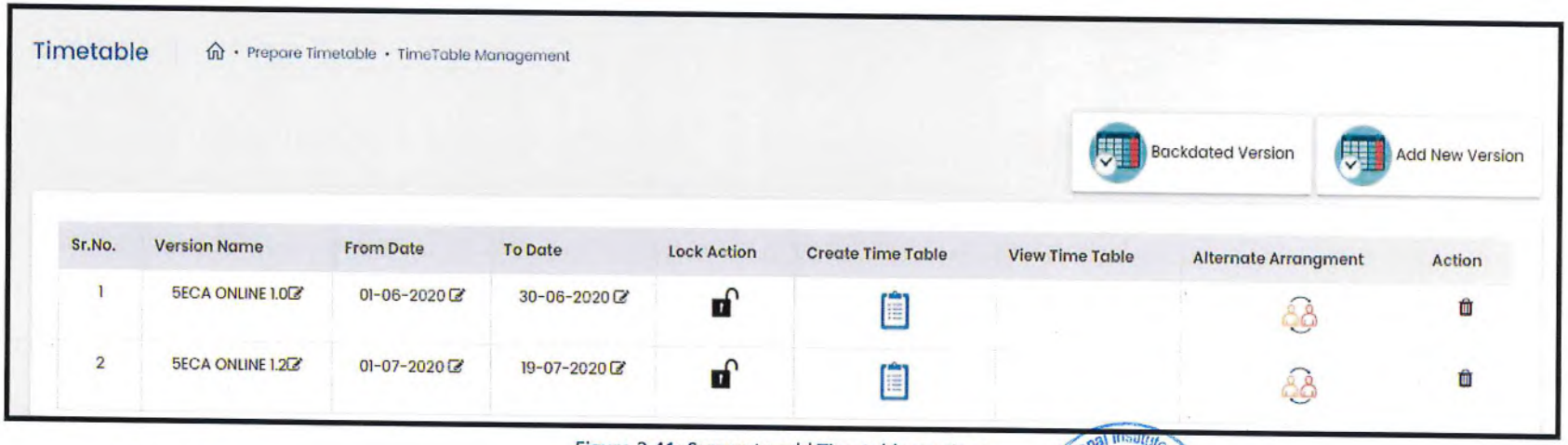

Figure 2.41: Screen to add Timetable versions

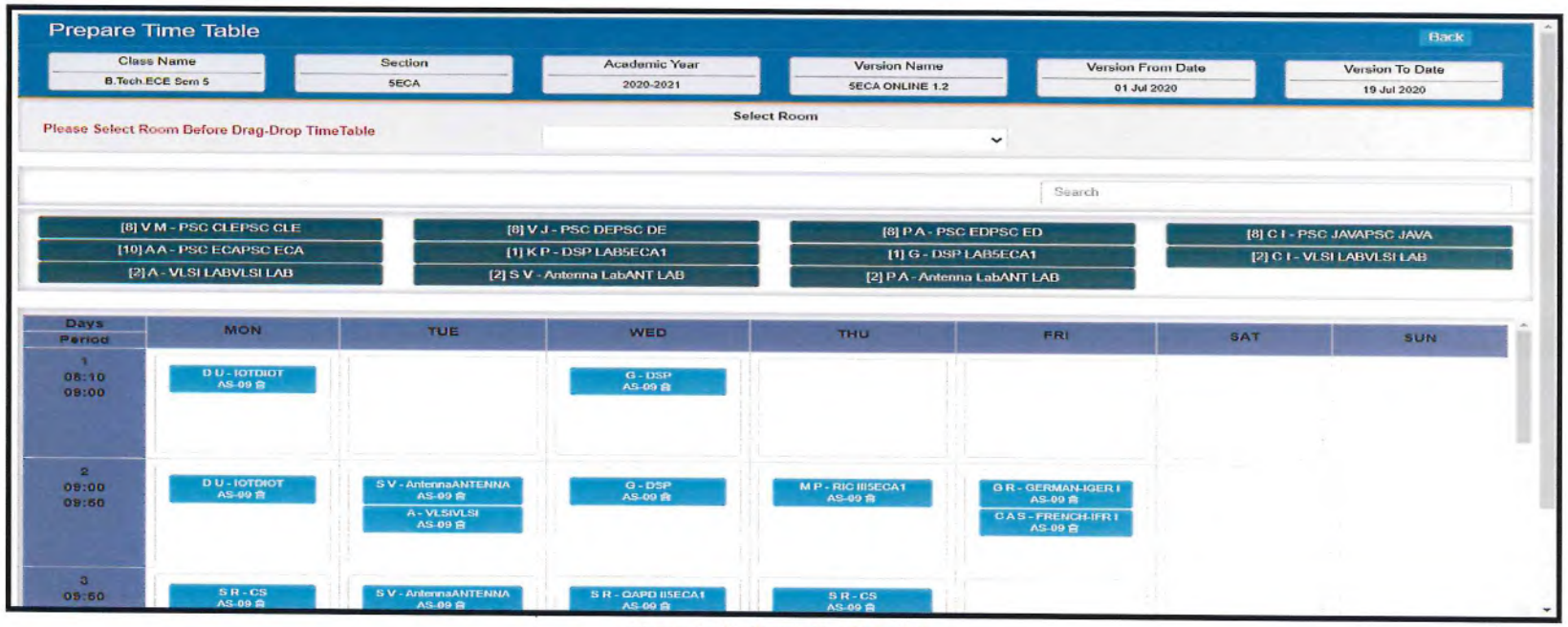

Figure 2.42: Timetable Template

- In case, a faculty is on leave or is assigned some other official duty, then the adjustment of their lectures for that duration can be done on the portal using the "Alternate Arrangement" option.

Figure 2.43: Alternate Arrangement

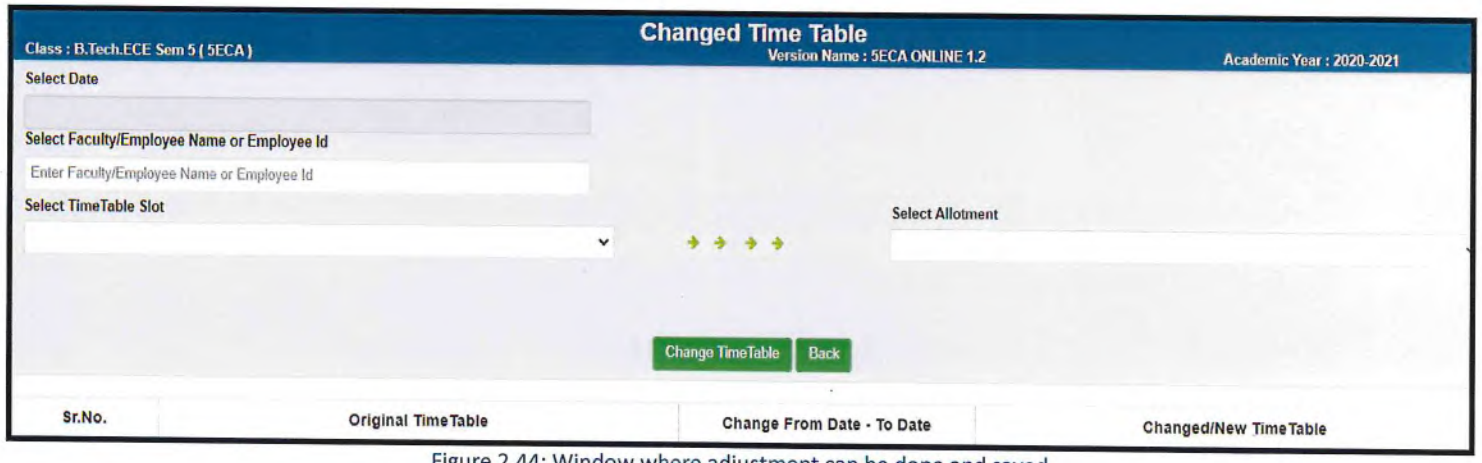

Figure 2.44: Window where adjustment can be done and saved

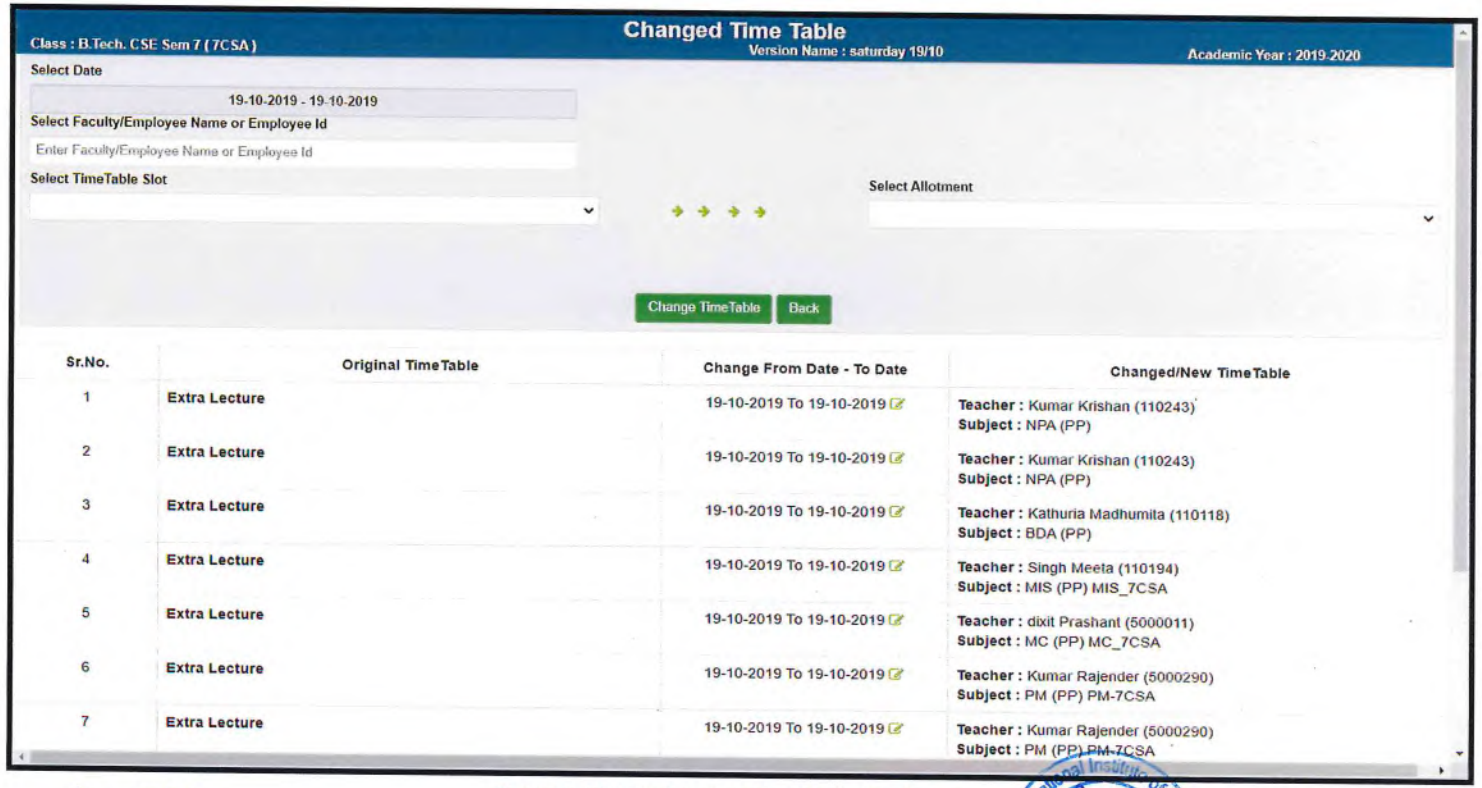

Figure 2.45: List showing scheduled extra lectures

STEP 8: COURSE APPROVAL (BY HEAD OF DEPARTMENT) –

- The course registered by all the students are approved by concerned Heads of Department. This provision is available under "Course" option present in the menu either available on Main screen or in menu ribbon present on left side of screen.
- The steps to reach the window where the list of registered students along with their registered subjects is visible can be reached following the path below:

Course >> Student Course Approval >> Program-wise Student Course Approval

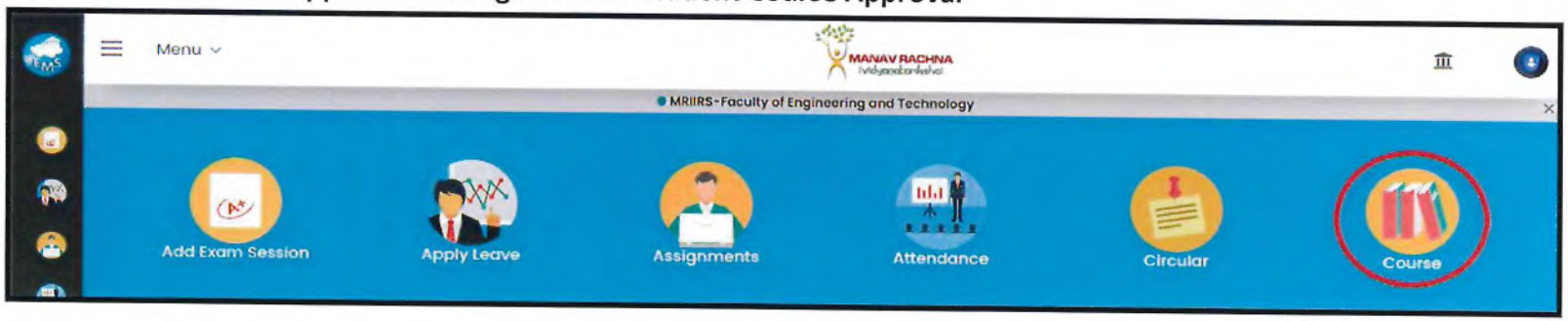

Figure 2.46: Main Window >> Course

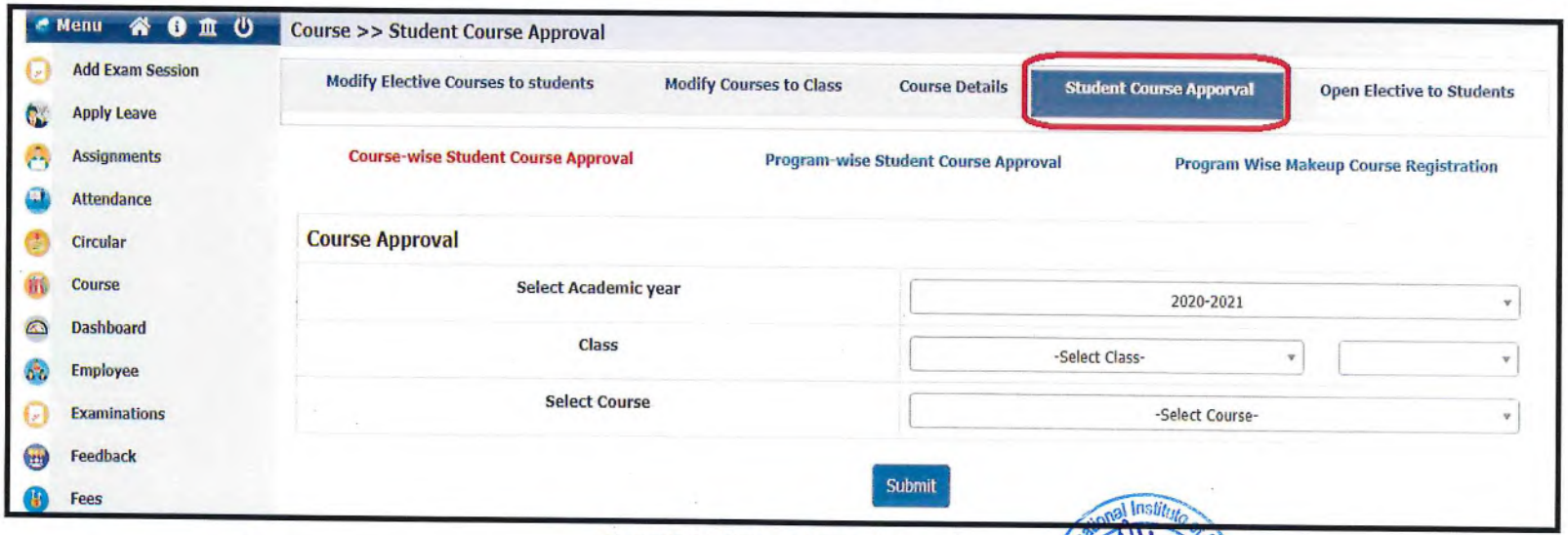

Figure 2.47: Student Course Approval

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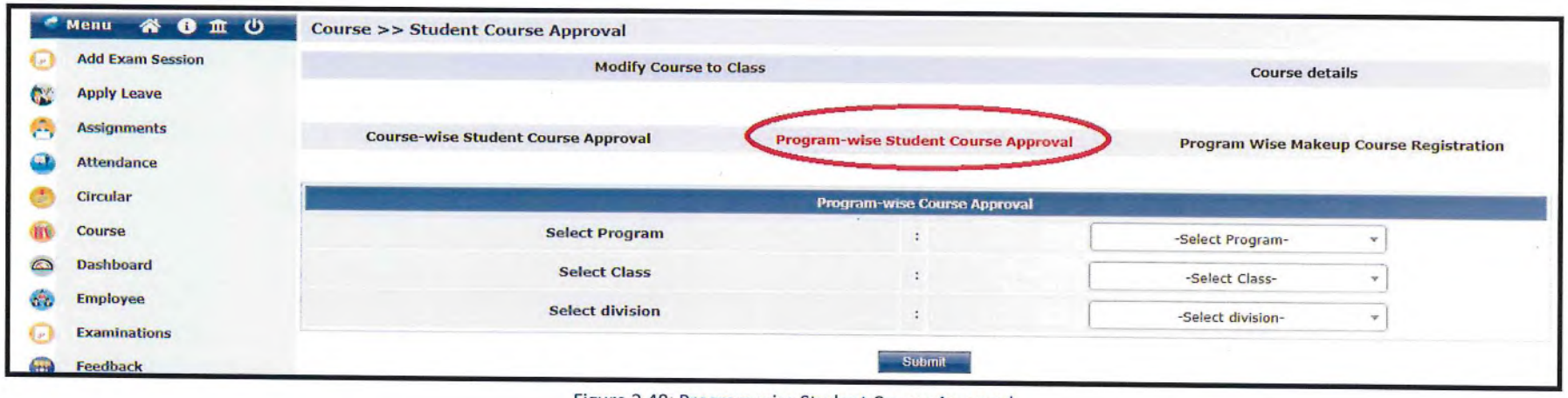
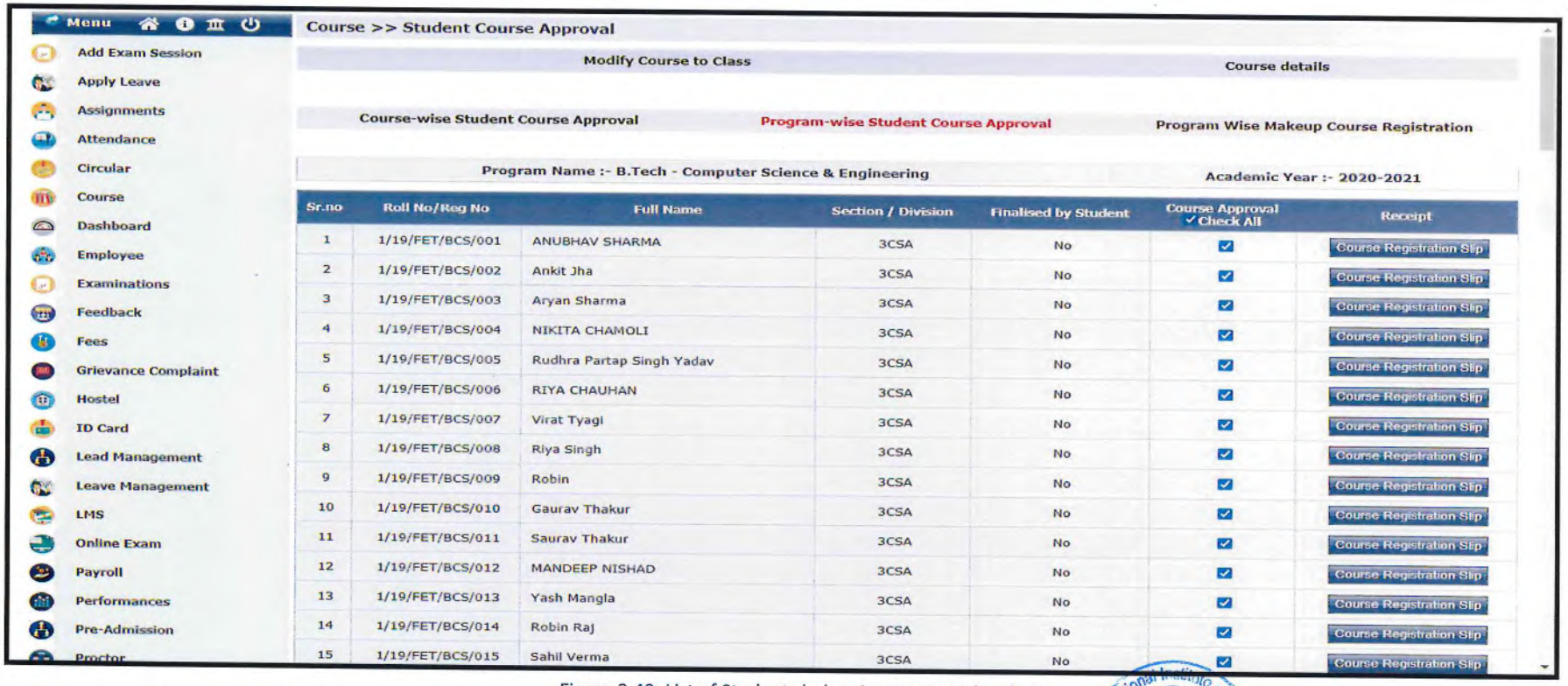


Figure 2.48: Program wise Student Course Approval



Sr.no	Roll No/Reg No	Full Name	Section / Division	Finalised by Student	Course Approval ✓Check All	Receipt
1	1/19/FET/BCS/001	ANUBHAV SHARMA	3CSA	No	☑	Course Registration Slip
2	1/19/FET/BCS/002	Ankit Jha	3CSA	No	☑	Course Registration Slip
3	1/19/FET/BCS/003	Aryan Sharma	3CSA	No	☑	Course Registration Slip
4	1/19/FET/BCS/004	NIKITA CHAMOLI	3CSA	No	☑	Course Registration Slip
5	1/19/FET/BCS/005	Rudhra Partap Singh Yadav	3CSA	No	☑	Course Registration Slip
6	1/19/FET/BCS/006	RIYA CHAUHAN	3CSA	No	☑	Course Registration Slip
7	1/19/FET/BCS/007	Virat Tyagi	3CSA	No	☑	Course Registration Slip
8	1/19/FET/BCS/008	Riya Singh	3CSA	No	☑	Course Registration Slip
9	1/19/FET/BCS/009	Robin	3CSA	No	☑	Course Registration Slip
10	1/19/FET/BCS/010	Gaurav Thakur	3CSA	No	☑	Course Registration Slip
11	1/19/FET/BCS/011	Saurav Thakur	3CSA	No	☑	Course Registration Slip
12	1/19/FET/BCS/012	MANDEEP NISHAD	3CSA	No	☑	Course Registration Slip
13	1/19/FET/BCS/013	Yash Mangla	3CSA	No	☑	Course Registration Slip
14	1/19/FET/BCS/014	Robin Raj	3CSA	No	☑	Course Registration Slip
15	1/19/FET/BCS/015	Sahil Verma	3CSA	No	☑	Course Registration Slip

Figure 2.49: List of Students belonging to particular class

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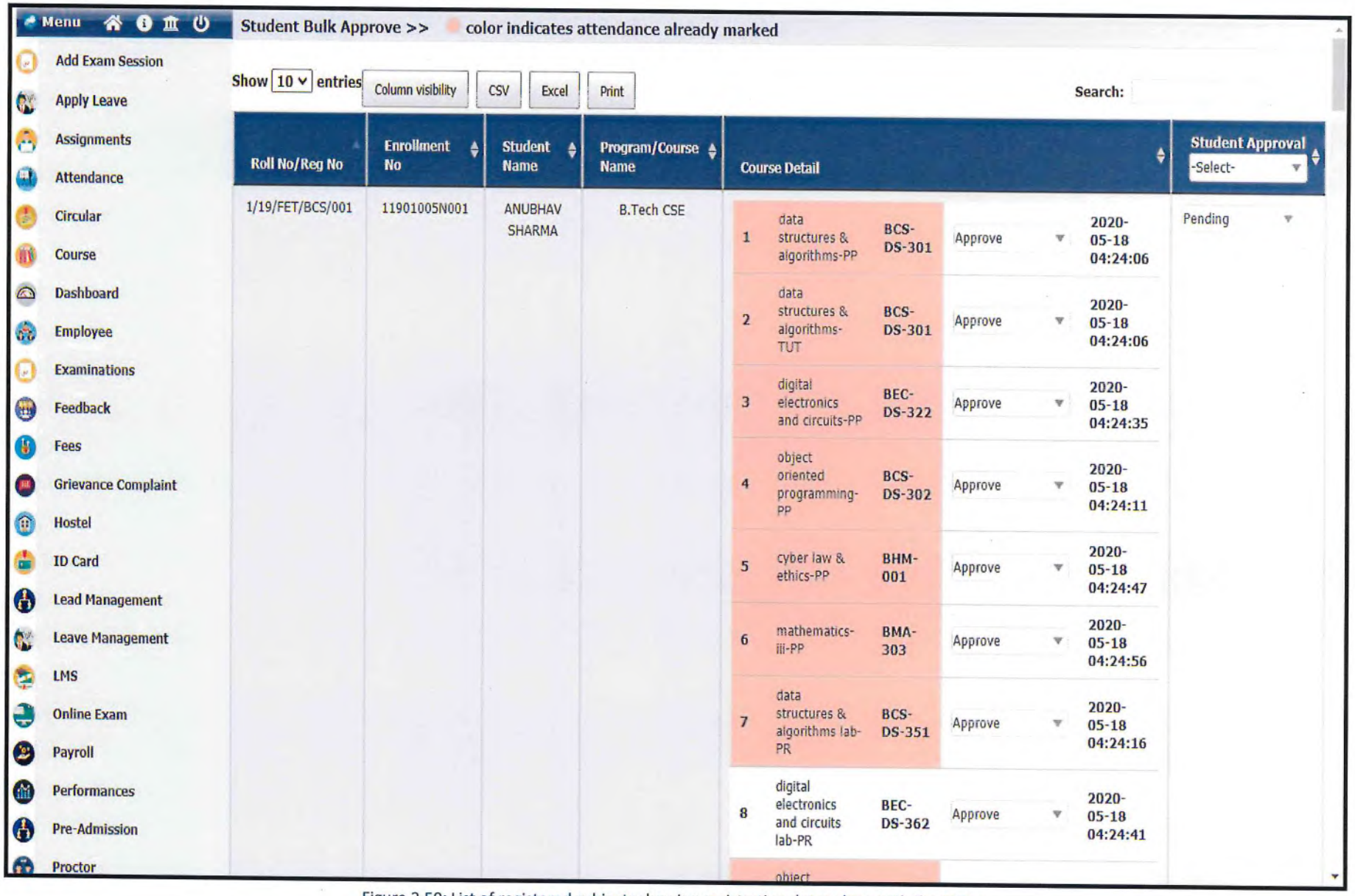


Figure 2.50: List of registered subjects showing registration dates along with the Status

STEP 8: CREATION OF SESSION PLAN –

- The faculty member who are assigned/allotted the course for the semester have to upload the teaching lesson plan on portal in a specific format for which the template can be downloaded from portal itself.
- Since this is faculty related task, the option of session plan is available in "Profile" of faculty under the "Academic" Section.
- Steps to be followed are:
  i. Login to your account
  ii. Select "Profile" option available drop-down that appears once faculty click on the Image icon present on right side of window.

Figure 2.51: Profile option available in drop-down

iii. Click on "Academics" to move to academic section as session plan uploading is an academic activity.

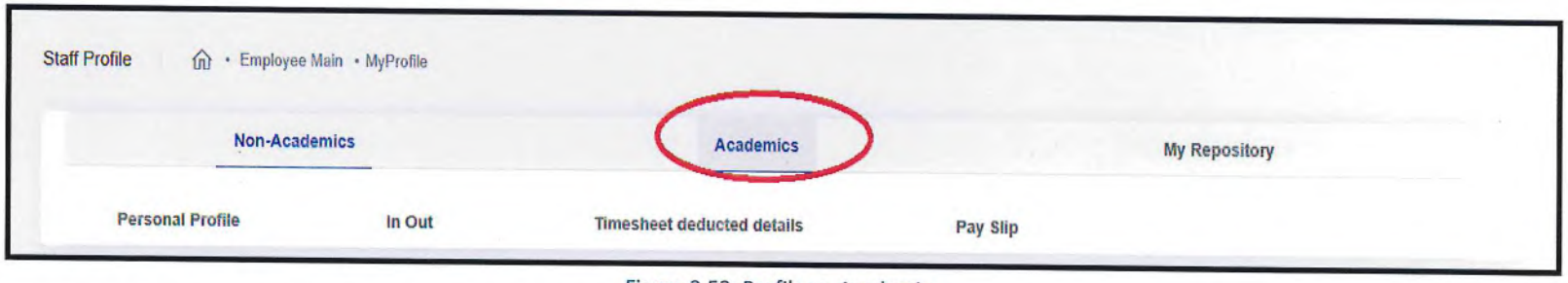


Figure 2.52: Profile >> Academics

iv. The list of all the courses that are assigned to faculty appears for the current Academic Year, where there are some hyperlinked texts available for performing designated tasks like "TOPIC LIST" and "SESSION PLAN". Click on the "Session Plan" hyperlink present corresponding to the subject for which teaching plan is to be uploaded.

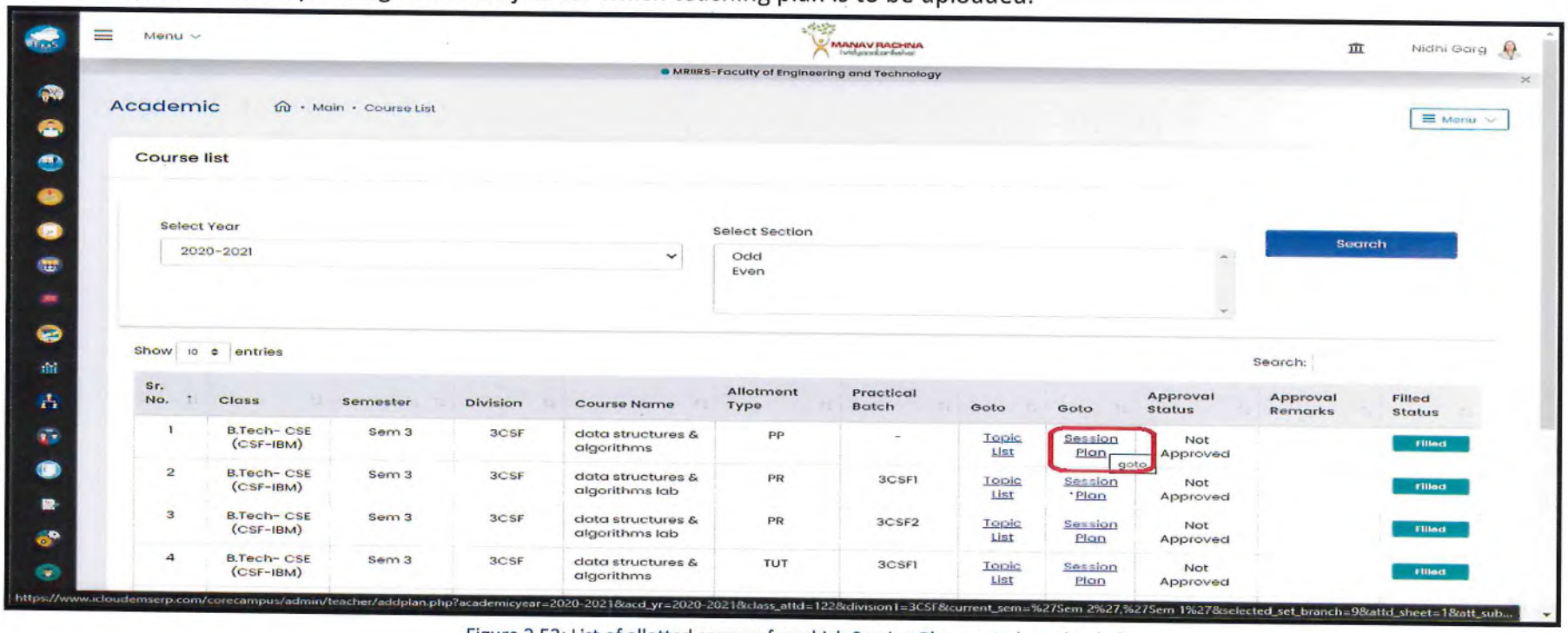


Figure 2.53: List of allotted courses for which Session Plan are to be uploaded

v. A new window opens-up having with many more hyperlinks that allow further more working for that course. To download the required template, select "IMPORT EXCEL" option present on the screen.

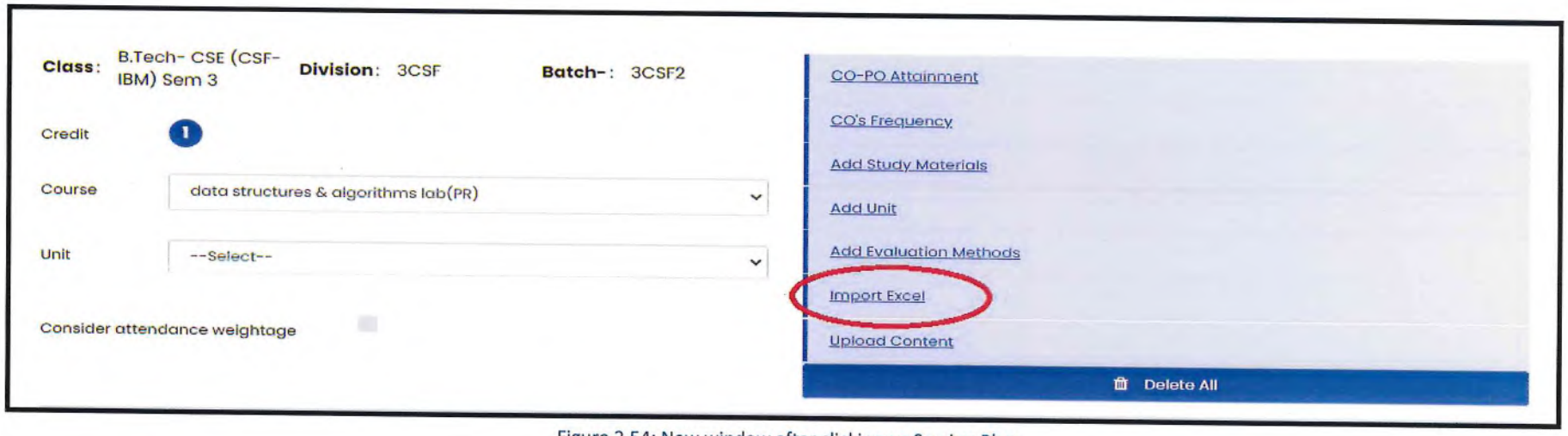


Figure 2.54: New window after clicking on Session Plan

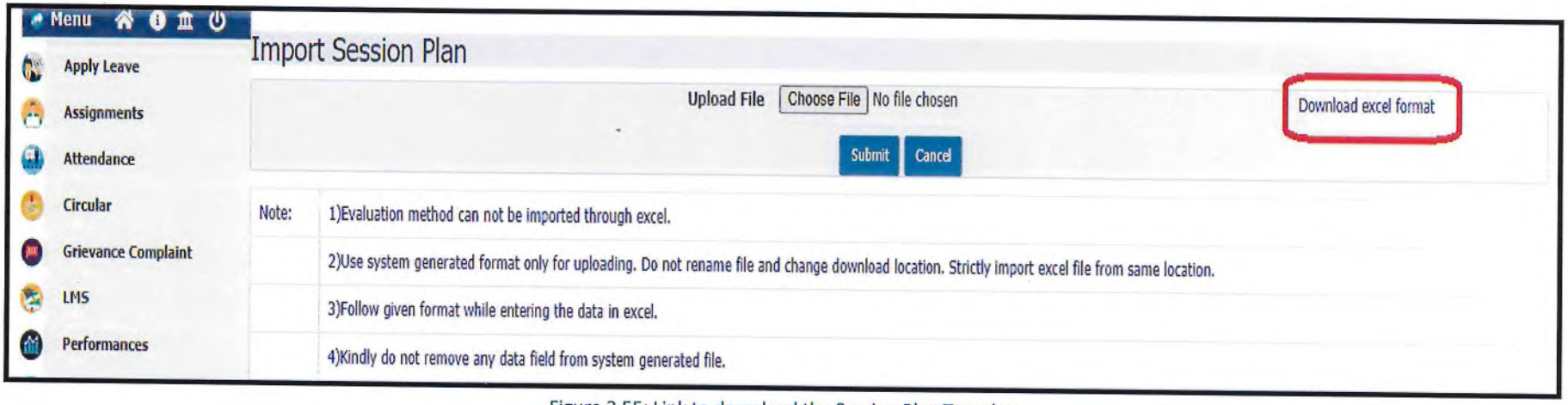
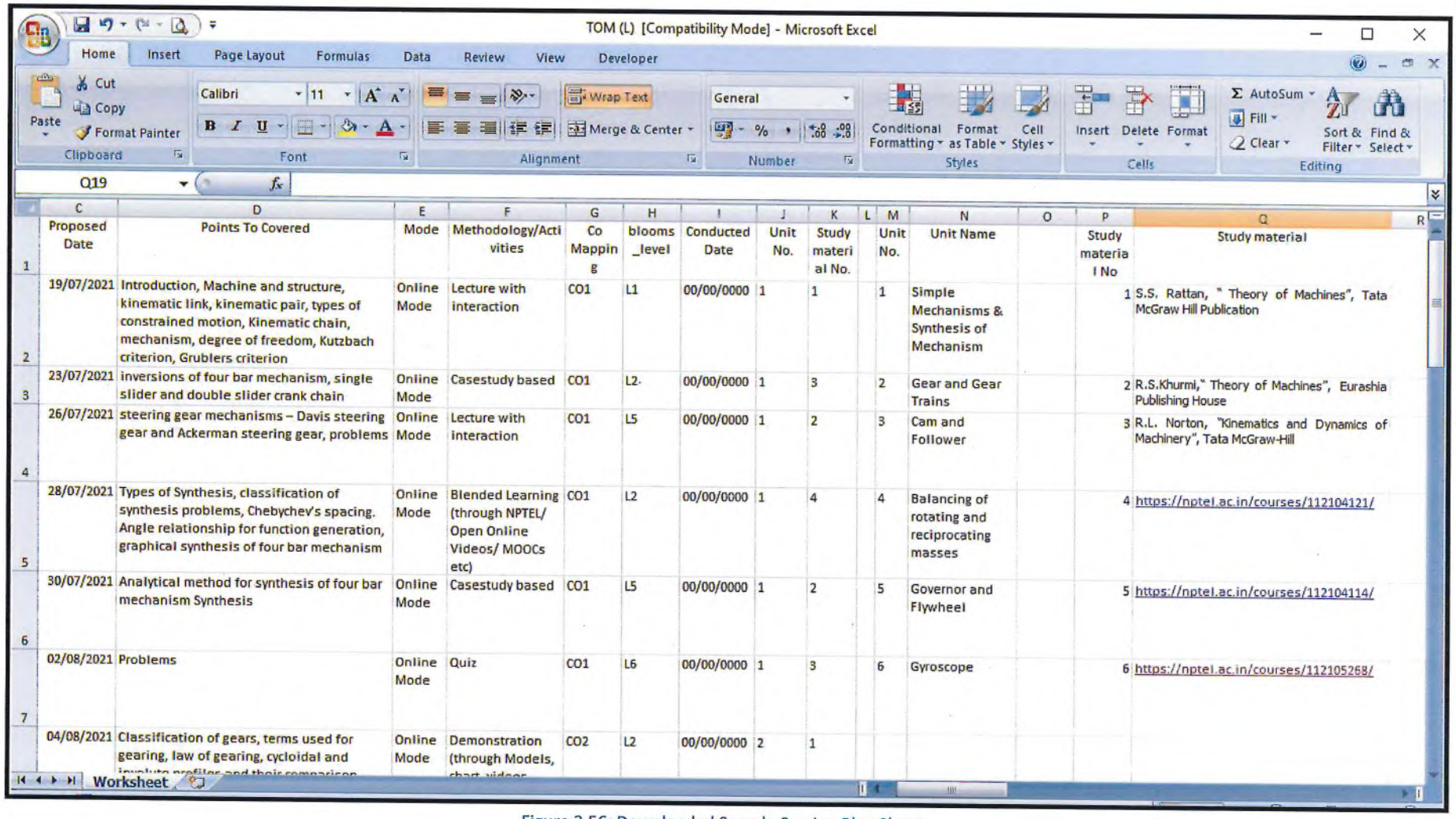


Figure 2.55: Link to download the Session Plan Template



	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1	Proposed Date	Points To Covered	Mode	Methodology/Activities	Co Mapping	blooms _level	Conducted Date	Unit No.	Study material No.		Unit No.	Unit Name		Study material No	Study material	
2	19/07/2021	Introduction, Machine and structure, kinematic link, kinematic pair, types of constrained motion, Kinematic chain, mechanism, degree of freedom, Kutzbach criterion, Grublers criterion	Online Mode	Lecture with interaction	CO1	L1	00/00/0000	1	1		1	Simple Mechanisms & Synthesis of Mechanism		1	S.S. Rattan, " Theory of Machines", Tata McGraw Hill Publication	
3	23/07/2021	inversions of four bar mechanism, single slider and double slider crank chain	Online Mode	Casestudy based	CO1	L2	00/00/0000	1	3		2	Gear and Gear Trains		2	R.S.Khurmi," Theory of Machines", Eurashia Publishing House	
4	26/07/2021	steering gear mechanisms – Davis steering gear and Ackerman steering gear, problems	Online Mode	Lecture with interaction	CO1	L5	00/00/0000	1	2		3	Cam and Follower		3	R.L. Norton, "Kinematics and Dynamics of Machinery", Tata McGraw-Hill	
5	28/07/2021	Types of Synthesis, classification of synthesis problems, Chebychev's spacing. Angle relationship for function generation, graphical synthesis of four bar mechanism	Online Mode	Blended Learning (through NPTEL/ Open Online Videos/ MOOCs etc)	CO1	L2	00/00/0000	1	4		4	Balancing of rotating and reciprocating masses		4	https://nptel.ac.in/courses/112104121/	
6	30/07/2021	Analytical method for synthesis of four bar mechanism Synthesis	Online Mode	Casestudy based	CO1	L5	00/00/0000	1	2		5	Governor and Flywheel		5	https://nptel.ac.in/courses/112104114/	
7	02/08/2021	Problems	Online Mode	Quiz	CO1	L6	00/00/0000	1	3		6	Gyroscope		6	https://nptel.ac.in/courses/112105268/	
	04/08/2021	Classification of gears, terms used for gearing, law of gearing, cycloidal and	Online Mode	Demonstration (through Models,	CO2	L2	00/00/0000	2	1							

Figure 2.56: Downloaded Sample Session Plan Sheet

vi. Faculty member has to make required changes in the downloaded template, and after updating the sheet can be imported from the same screen.

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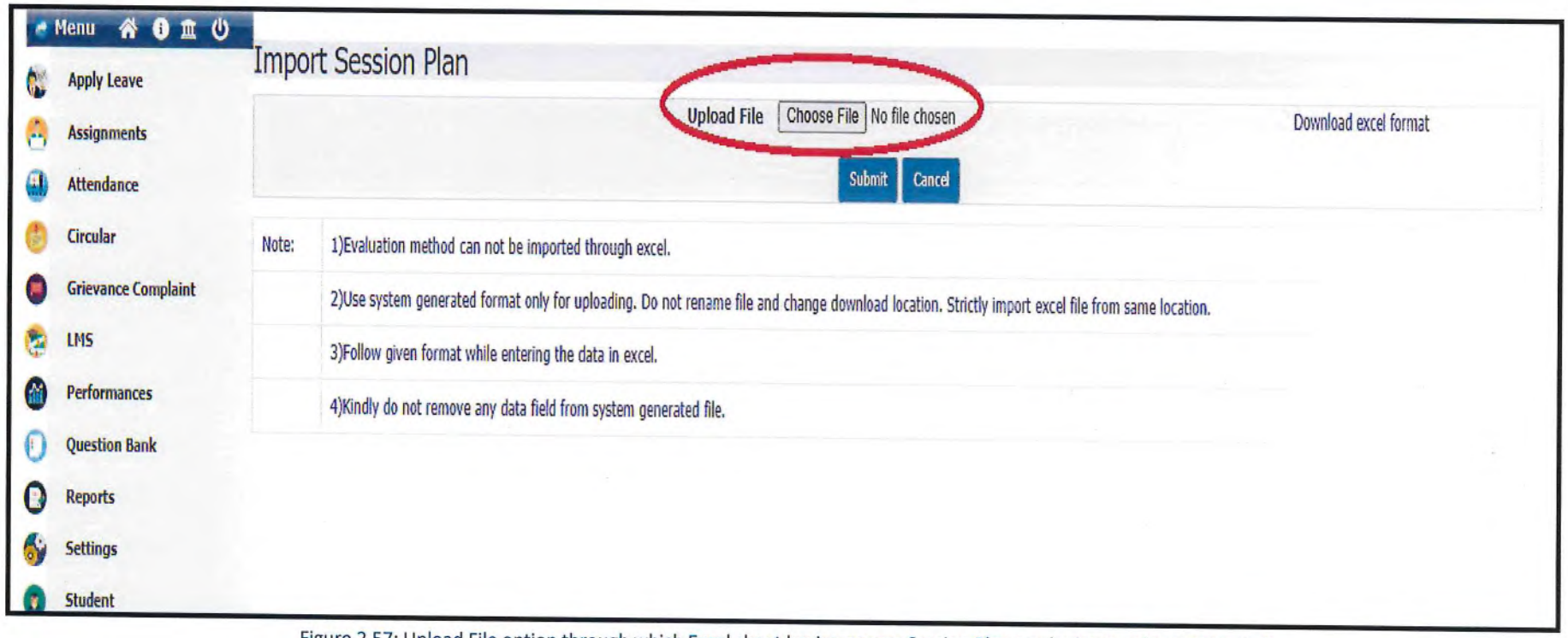

Figure 2.57: Upload File option through which Excel sheet having proper Session Plan can be browsed and uploaded

vii. Once the session plan is uploaded, it is visible on screen as shown below:

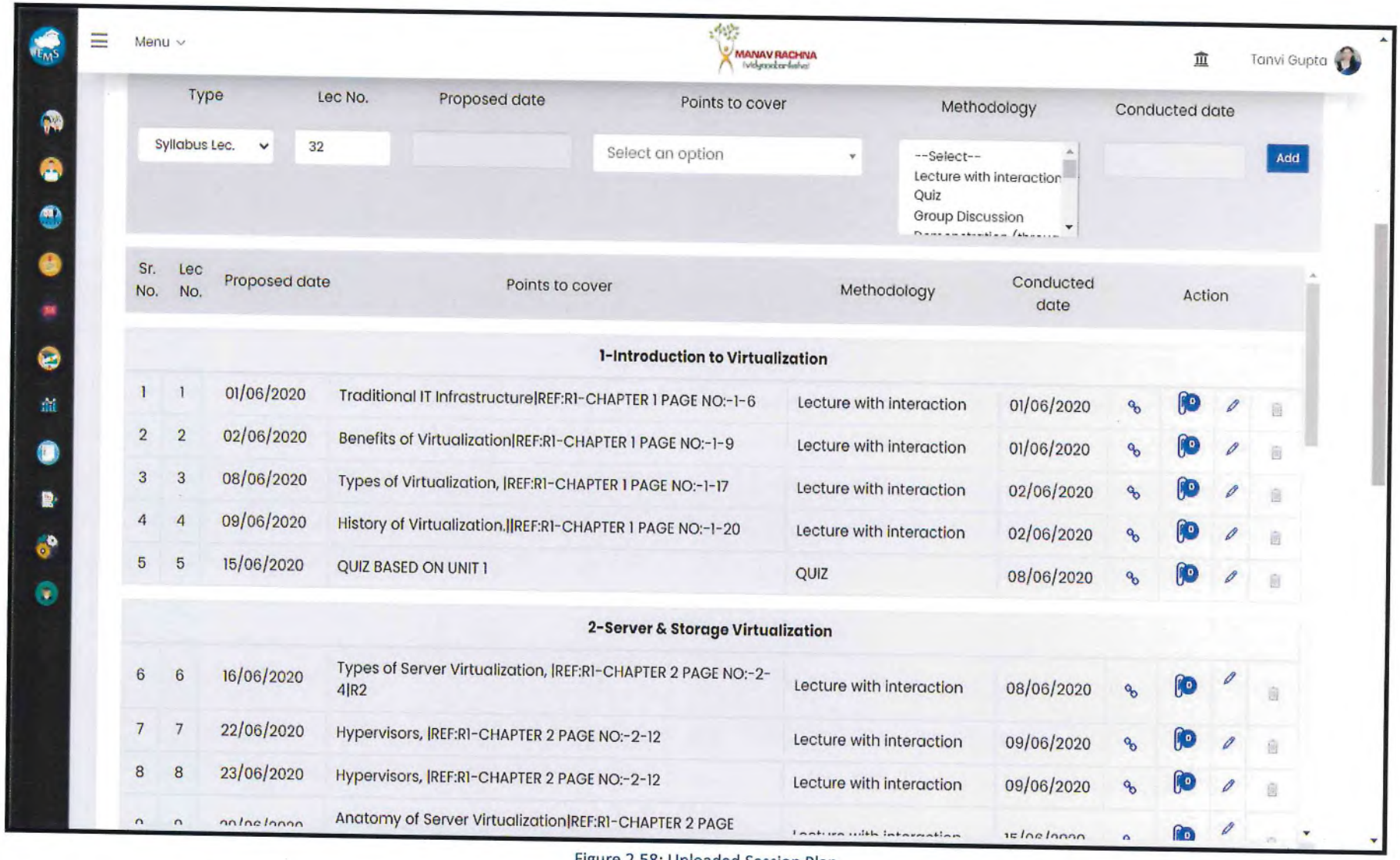

Figure 2.58: Uploaded Session Plan

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- Another option available for Session Plan creation is manual entry from Front End itself that can be accomplished by selecting Unit, entering required value and clicking on ADD.

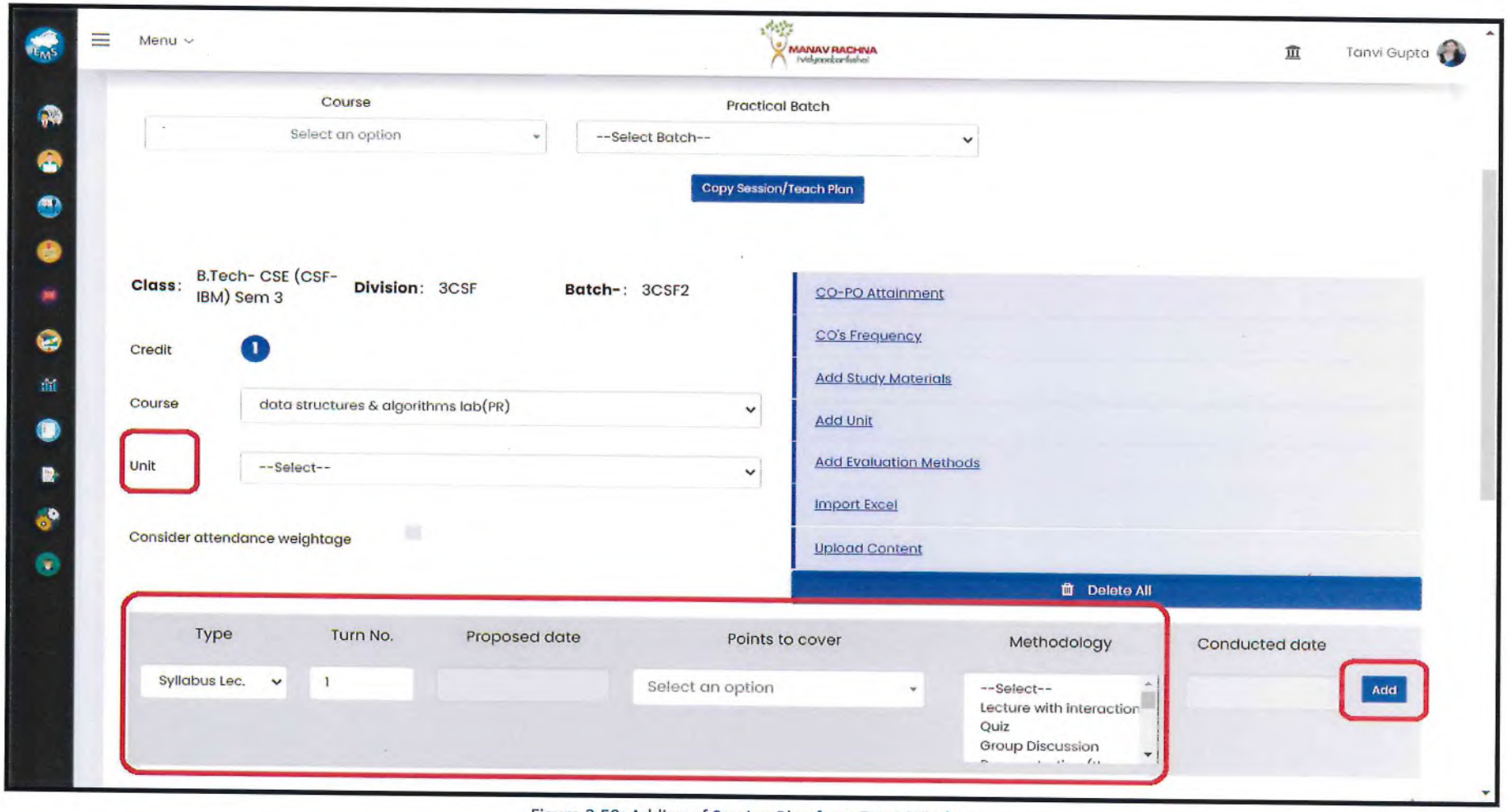

Figure 2.59: Adding of Session Plan from Front Window

STEP 9: MARKING OF ATTENDANCE –

- Faculty members taking classes have to mark the class attendance regularly. This is done by selecting the "ATTENDANCE" icon present on Main window.

Figure 2.604: Attendance Icon present at faculty login

- The slots for attendance marking are visible at their portal with "TAKE" button indicating the required task. And if faculty has marked the attendance, then the button shows "UPDATE" text.

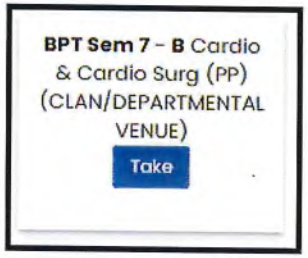

Figure 2.61: "TAKE" means attendance is yet to be marked

Figure 2.62: "UPDATE" showcasing marked

Attendance

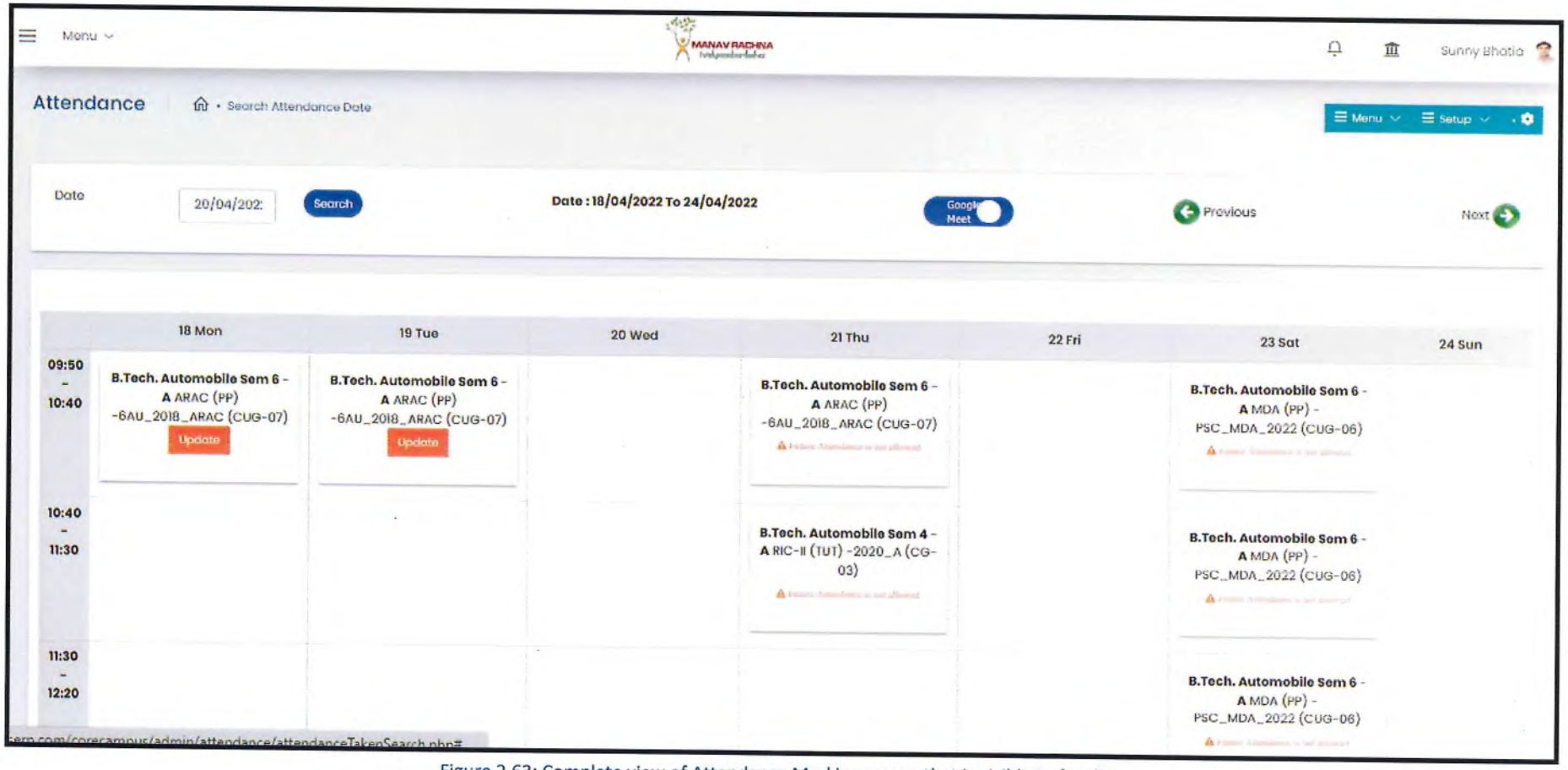

Figure 2.63: Complete view of Attendance Marking screen that is visible to faculty

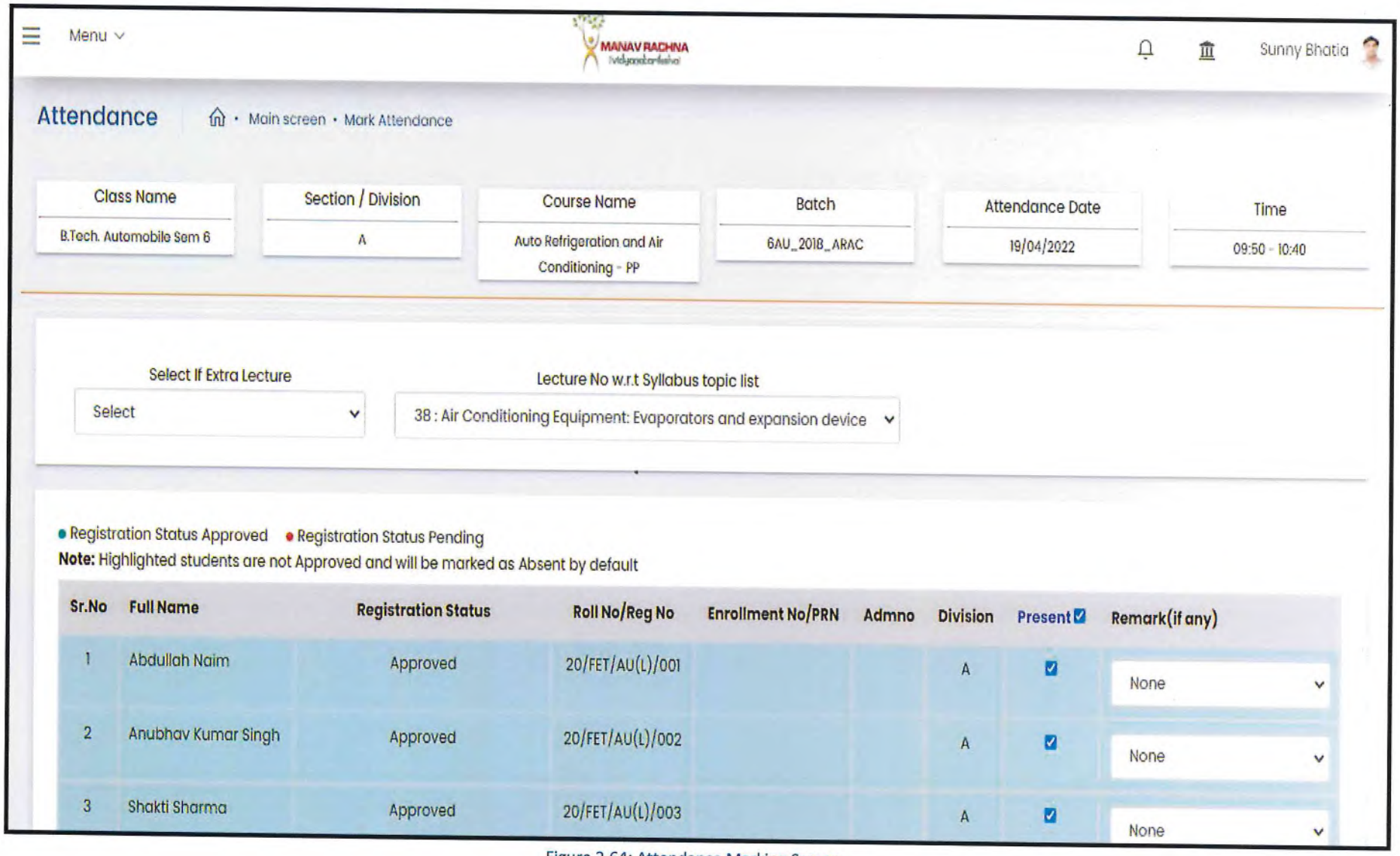

Figure 2.64: Attendance Marking Screen

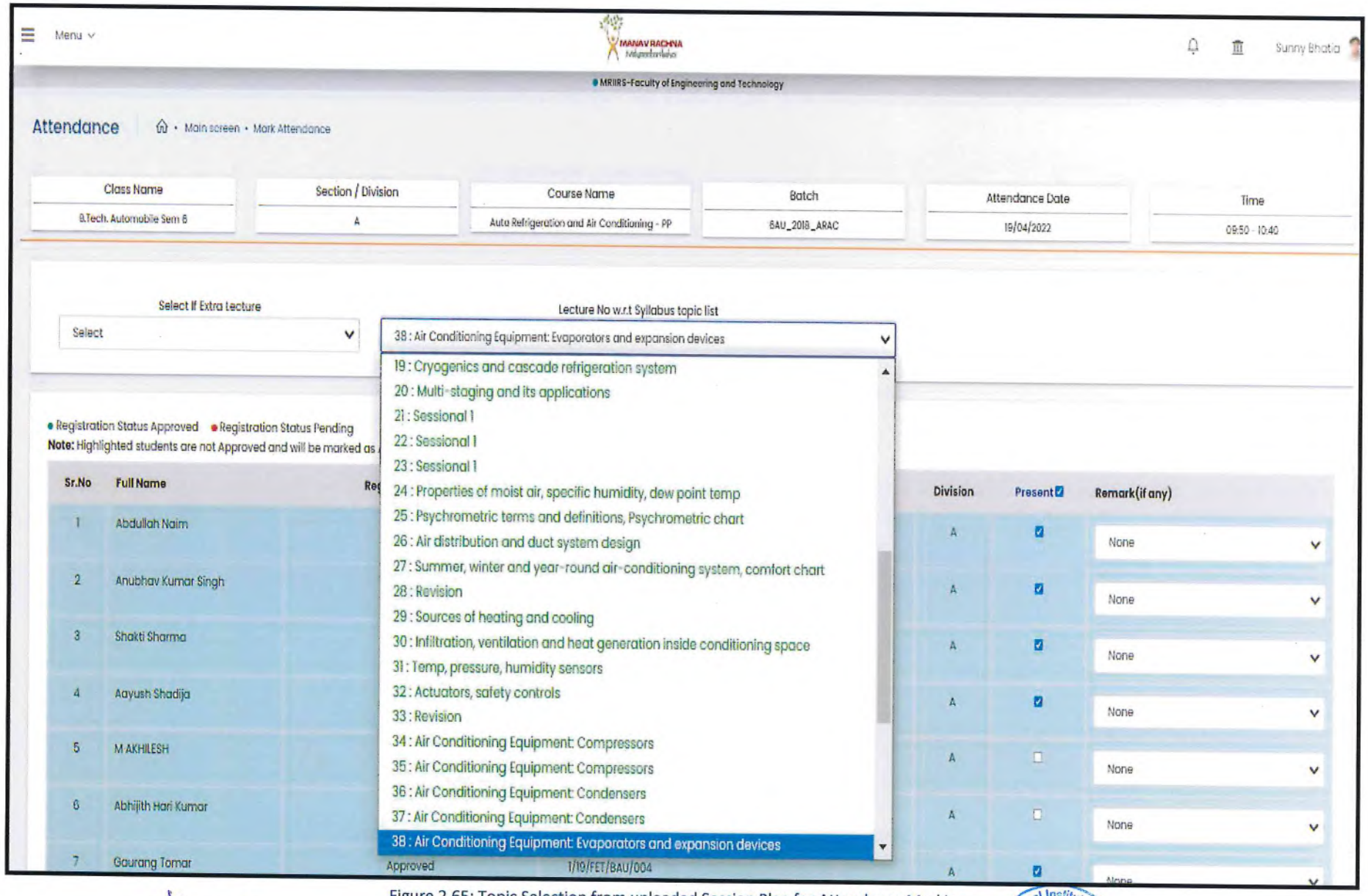

Figure 2.65: Topic Selection from uploaded Session Plan for Attendance Marking

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- The faculty is given "1 day" time to mark the attendance, after which the attendance gets freeze and proper unfreezing approval is needed from the competent authority for getting the permission to mark attendance after defined period.

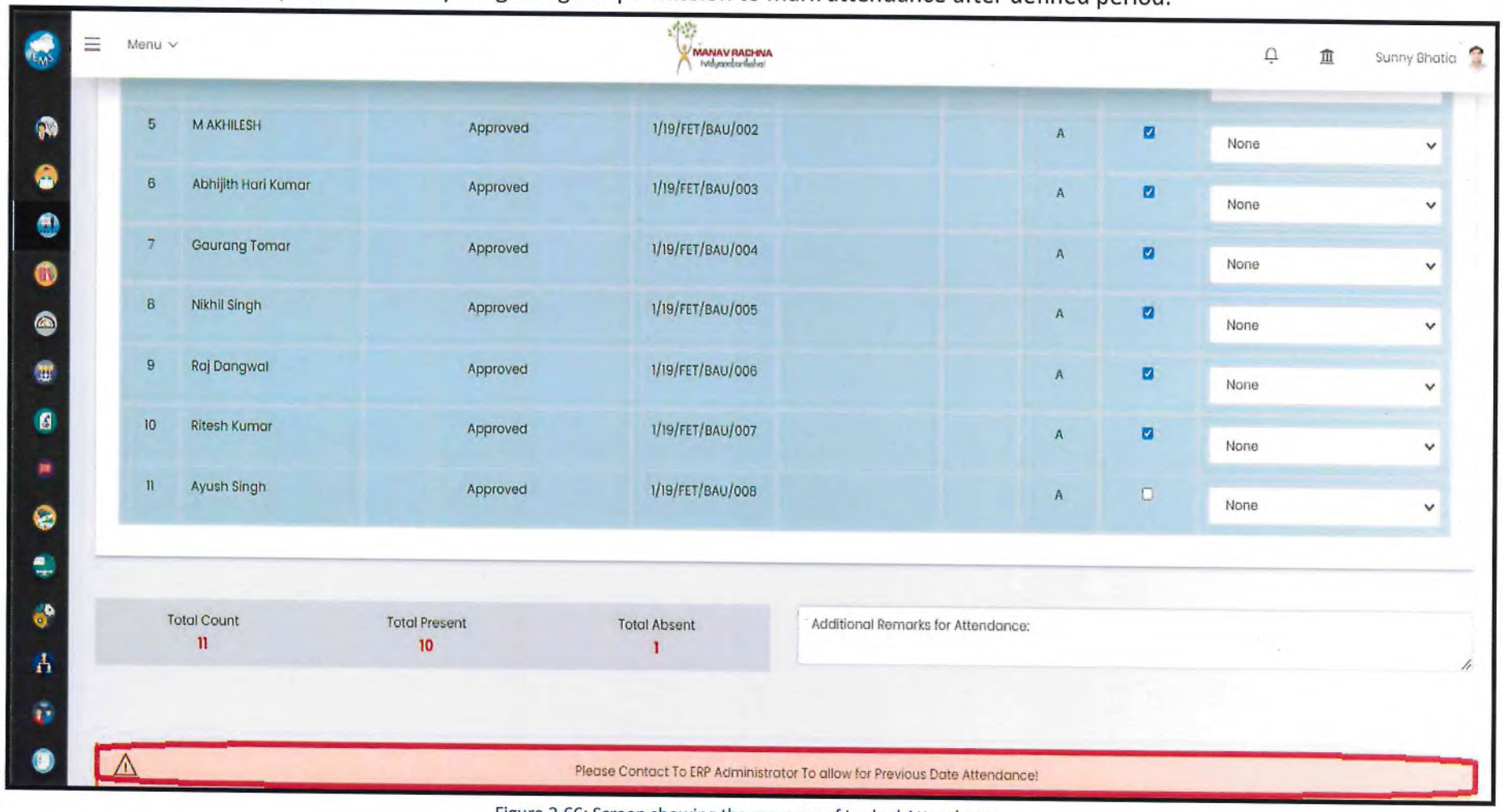

Figure 2.66: Screen showing the message of Locked Attendance

NOTE: *Here the color code has special meaning i.e. Blue rows means the students are approved by HOD for the course, whereas, PINK highlights the students whose registration approval are still pending.*

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STEP 10: CONTENT UPLOADING –

- The study materials related to courses can be uploaded by faculty members over the portal which in turn is easily accessible to students for reference purpose.
- This is again done under Profile >> Academics >> Session Plan corresponding to the courses present in the allotted list.

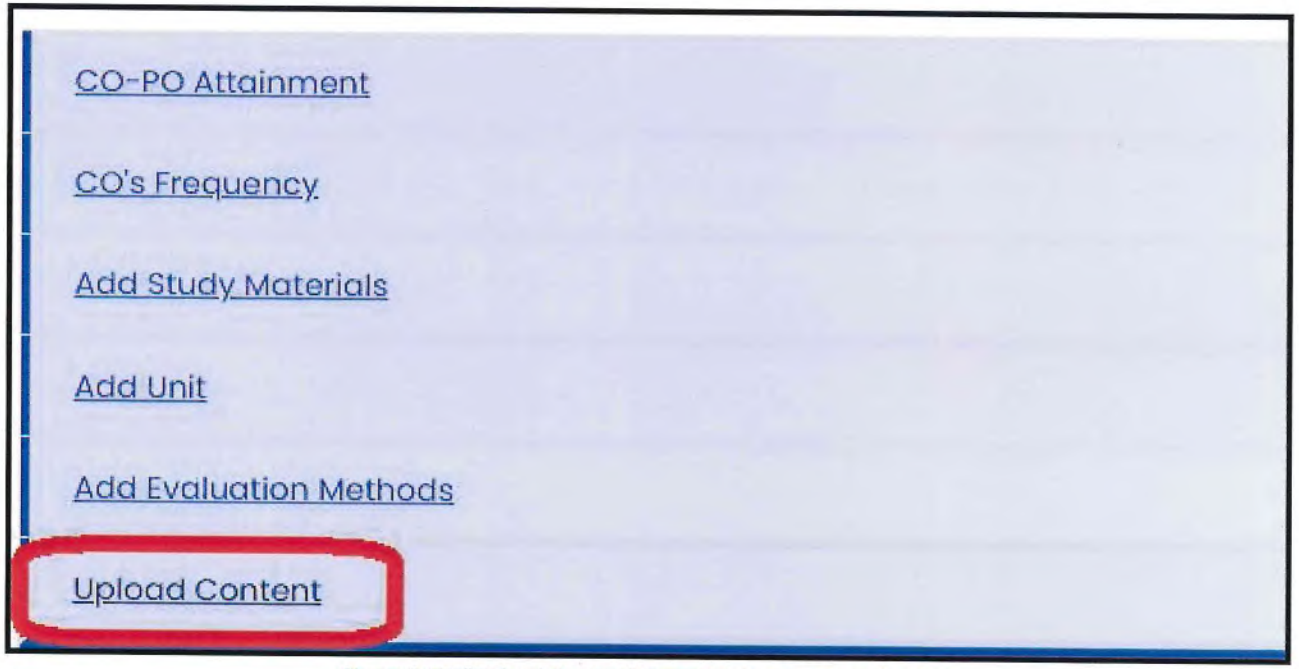

Figure 2.67: "Upload Content" hyperlink for content uploading

- There are two options available for content uploading:
  i. Real time uploading of file through Repository.
  ii. My Content that is collection of all files uploaded by the faculty member.
- The uploaded files need to be linked to the subject that is done by selecting the check box and clicking on "Submit" button.

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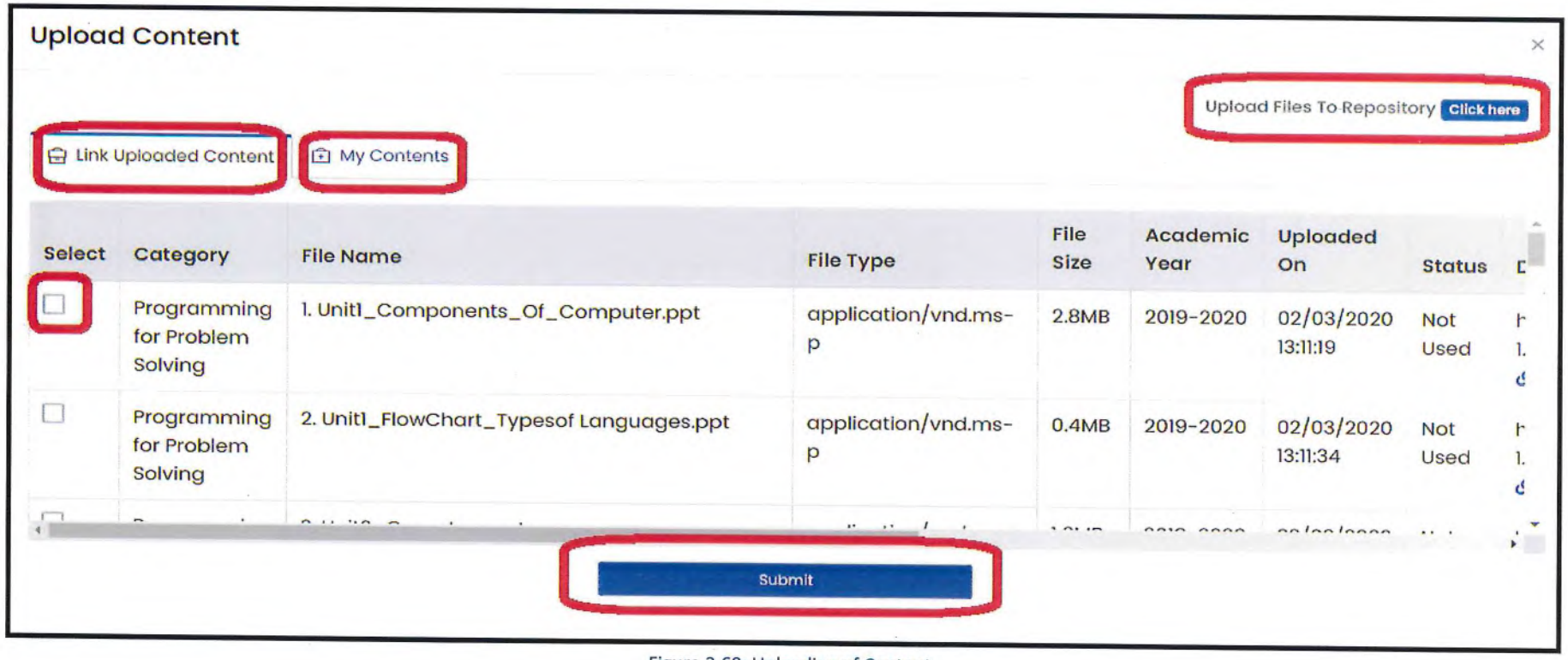

Figure 2.68: Uploading of Content

- Uploaded contents are visible in the session plan itself where the count mentioned along with the topic indicates the no. of files associated with that topic.

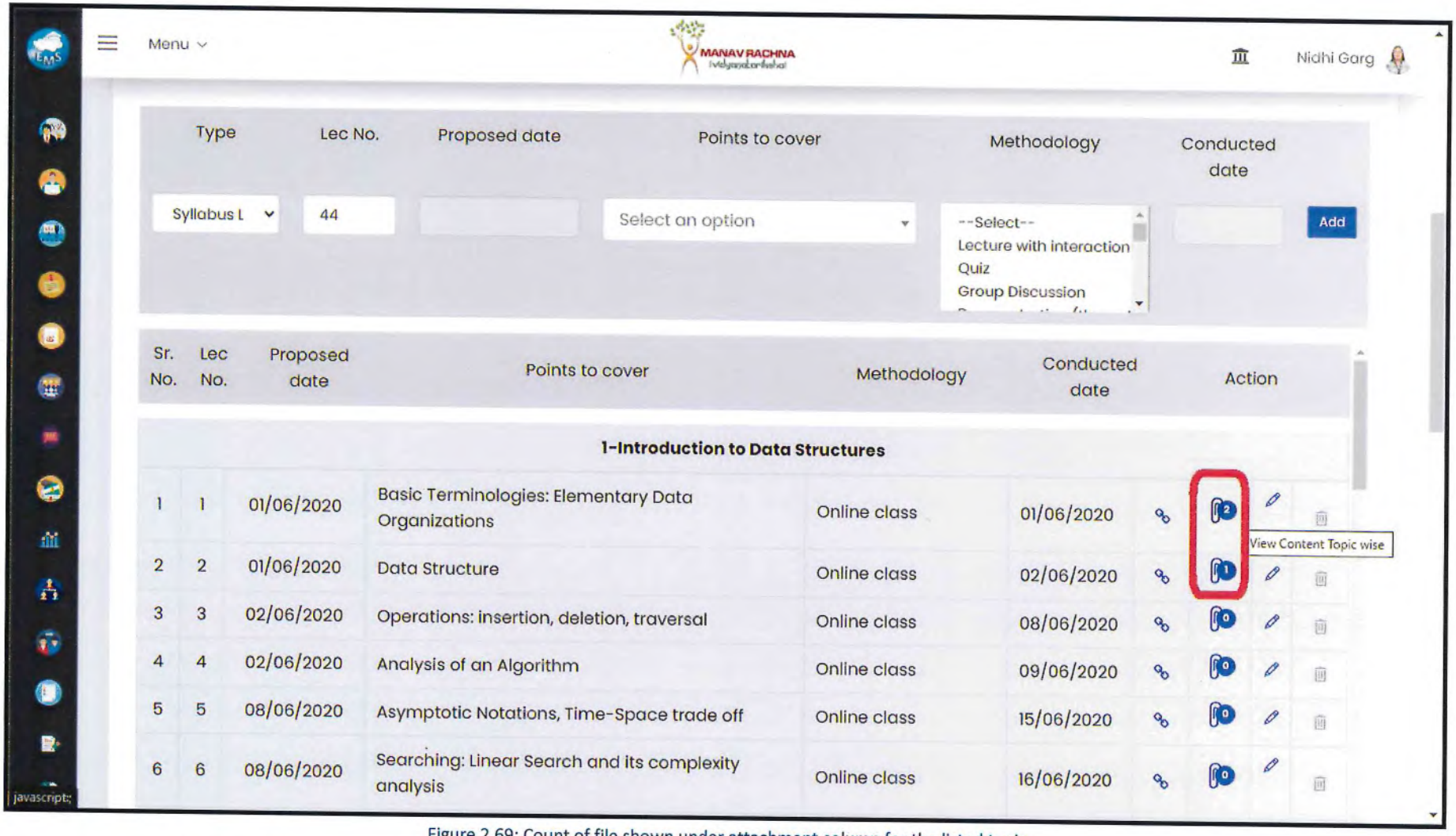

Figure 2.69: Count of file shown under attachment column for the listed topic

STEP 11: ASSIGNING ASSIGNMENTS –

- Faculty can upload the assignment sheet on EMS portal and assign them to students as per requirement along with the submission deadline.
- Students have to individually upload the solved assignment on EMS through their portal. Another student cannot view the assignment of other student.
- Once the Due Date of submitting assignment is over, students cannot upload the solutions on EMS until and unless faculty extends the submission date.
- Steps for assigning assignment are:

i. Login into portal, and Select "Assignment" option.

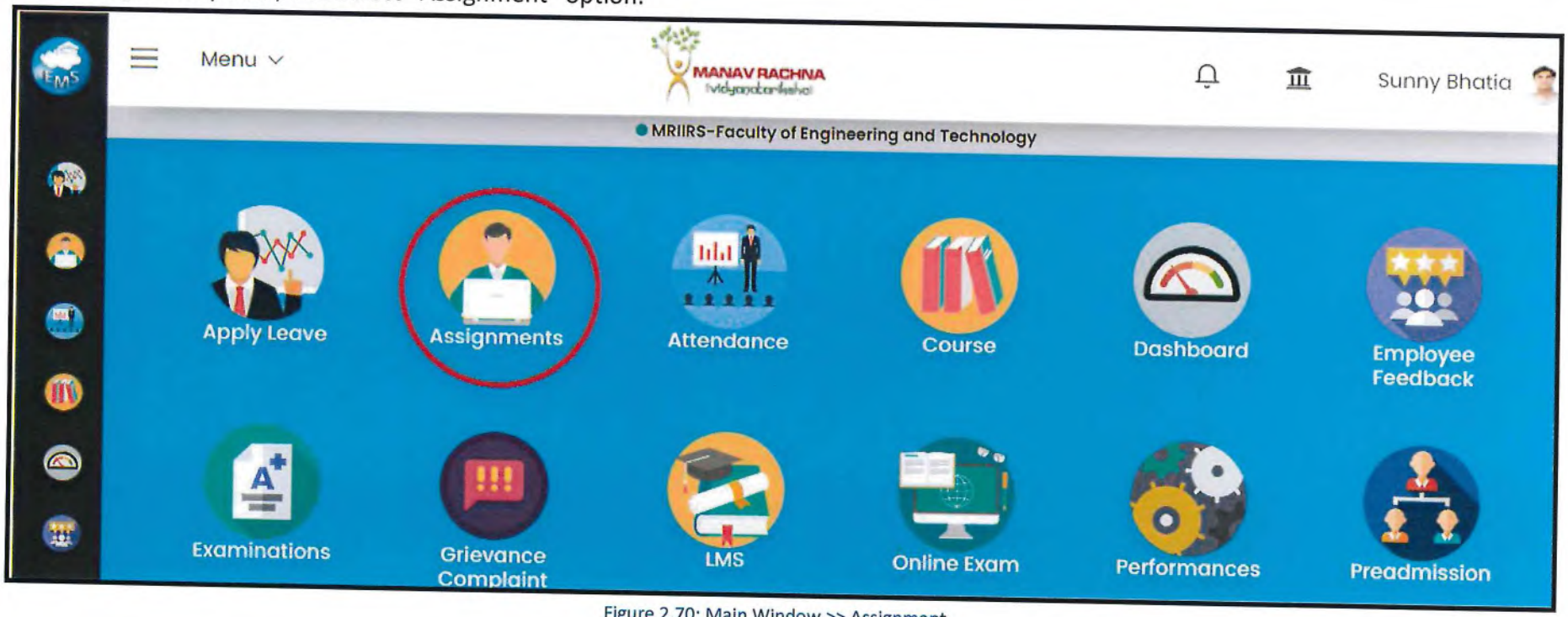

Figure 2.70: Main Window >> Assignment

ii. The lists of allotted courses are displayed for assigning of assignments. Click on "+" icon present in the subject row for "Creating New Assignment".

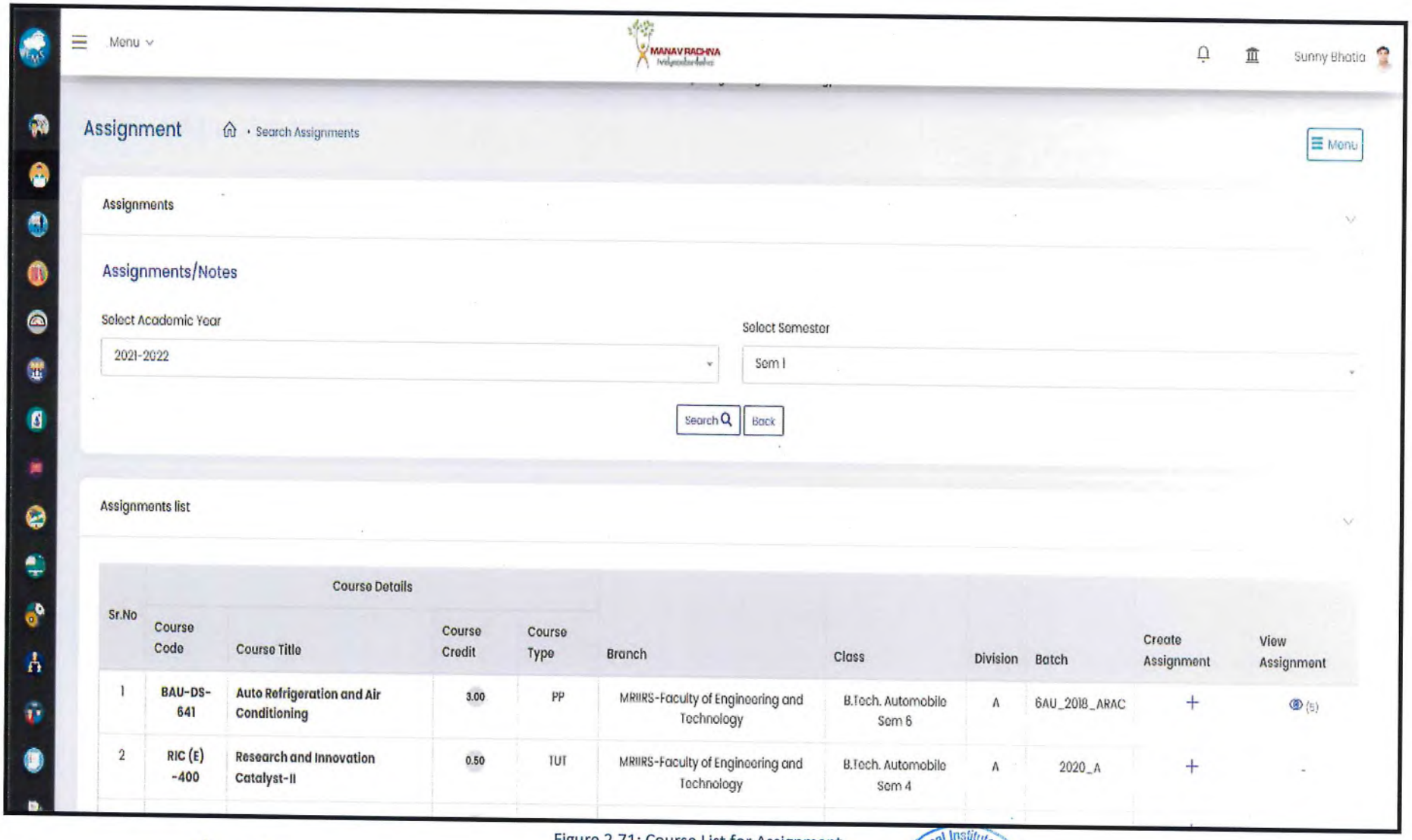

Figure 2.71: Course List for Assignment

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iii. This opens the window displaying student list. Select students from the list and click on "Assign".

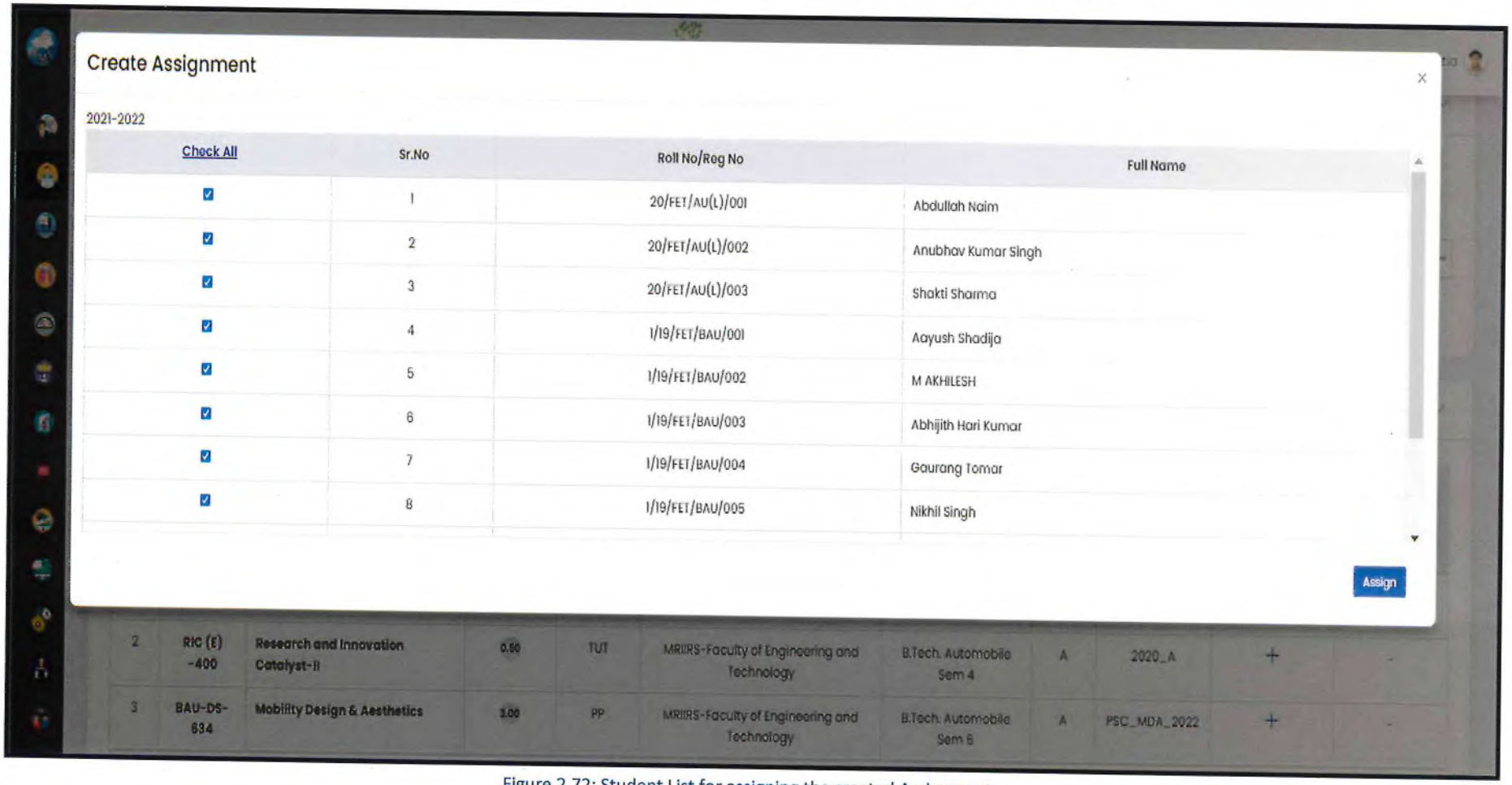

Figure 2.72: Student List for assigning the created Assignment

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iv. The assignment can be created filling in or selecting the values of all (mandatory) fields & finally selecting "Assign" button.

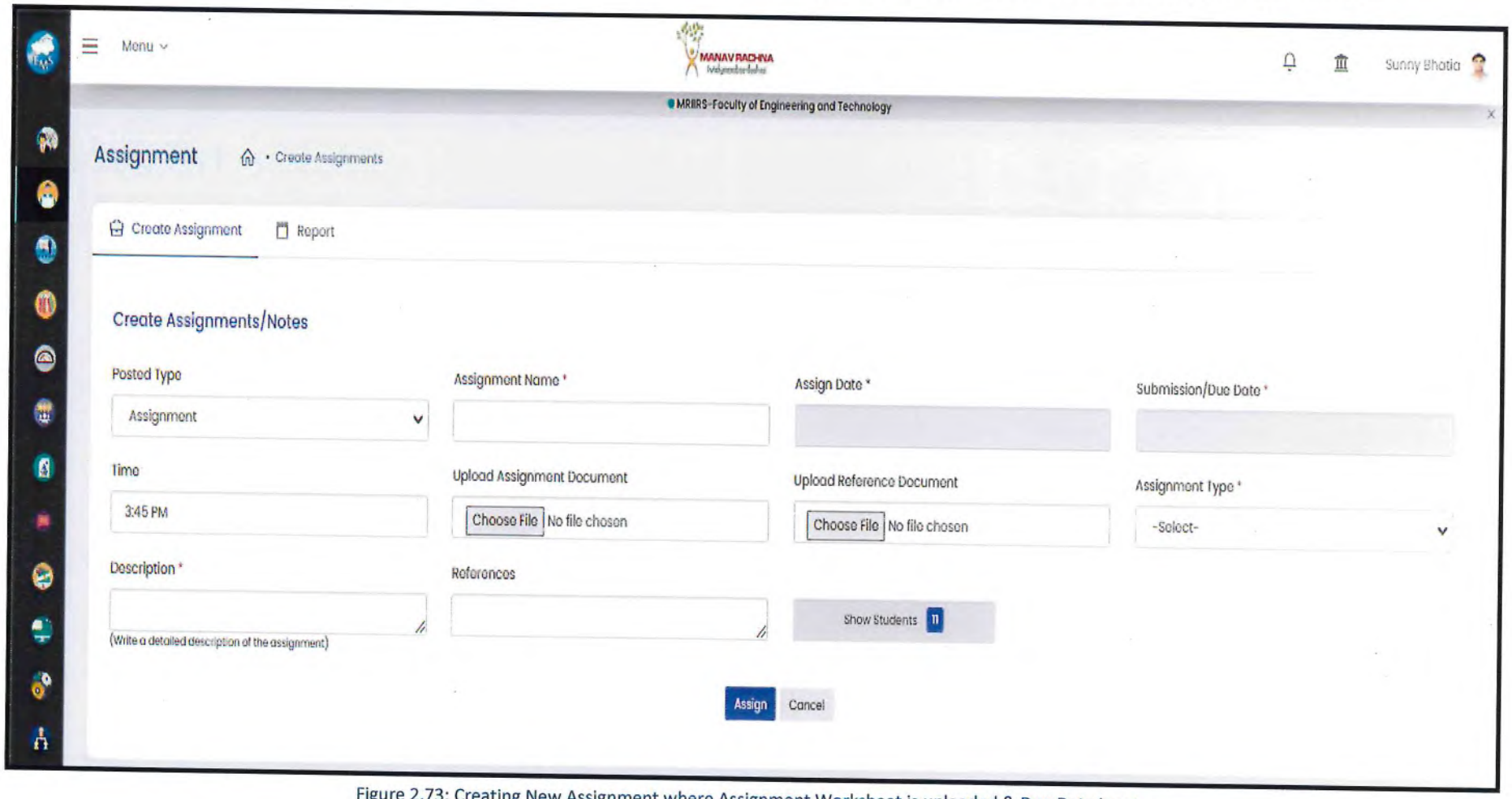

Figure 2.73: Creating New Assignment where Assignment Worksheet is uploaded & Due Date is set

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v. The count of already assigned/create Assignments can be viewed under "View Assignment" column.

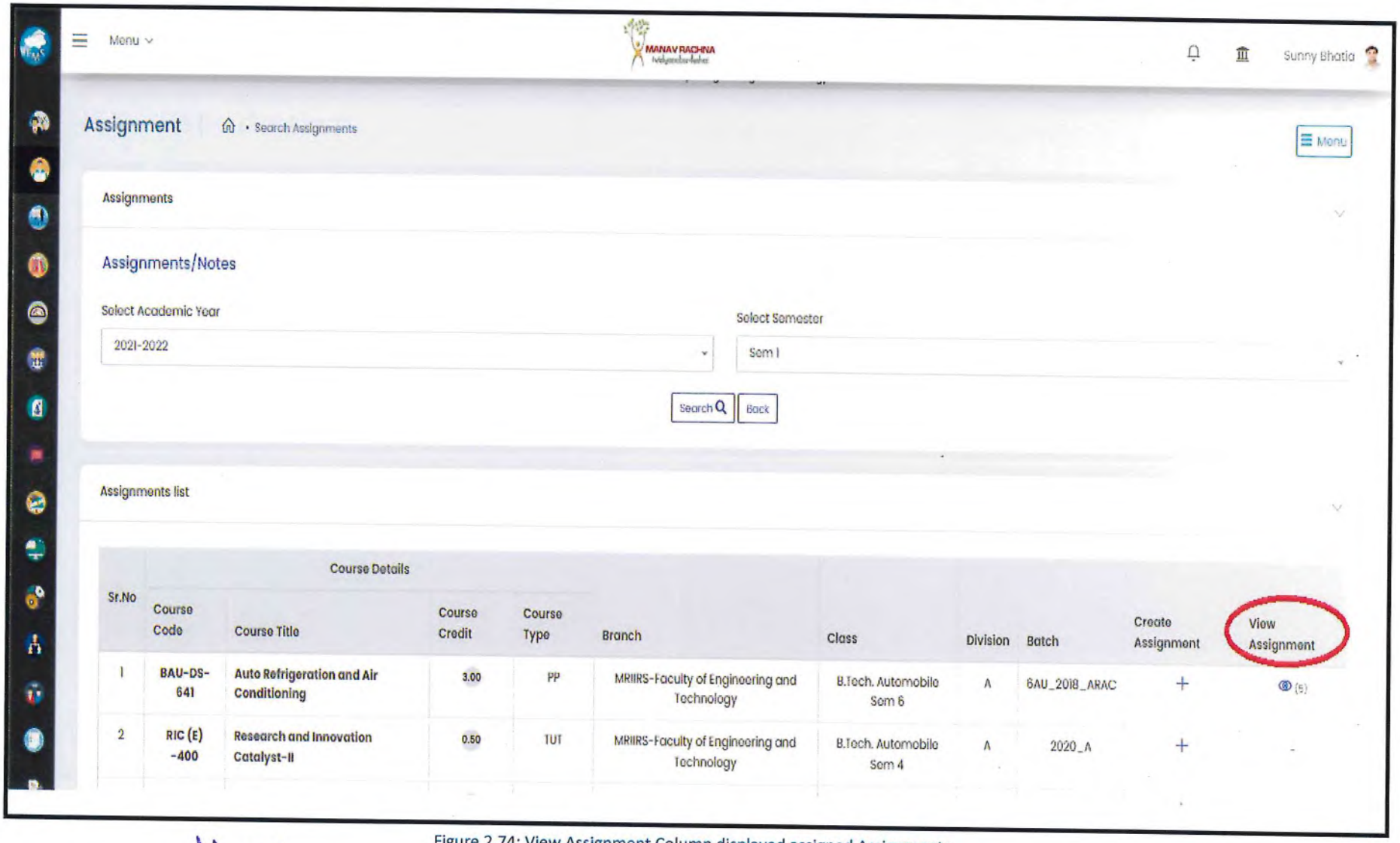

Figure 2.74: View Assignment Column displayed assigned Assignments

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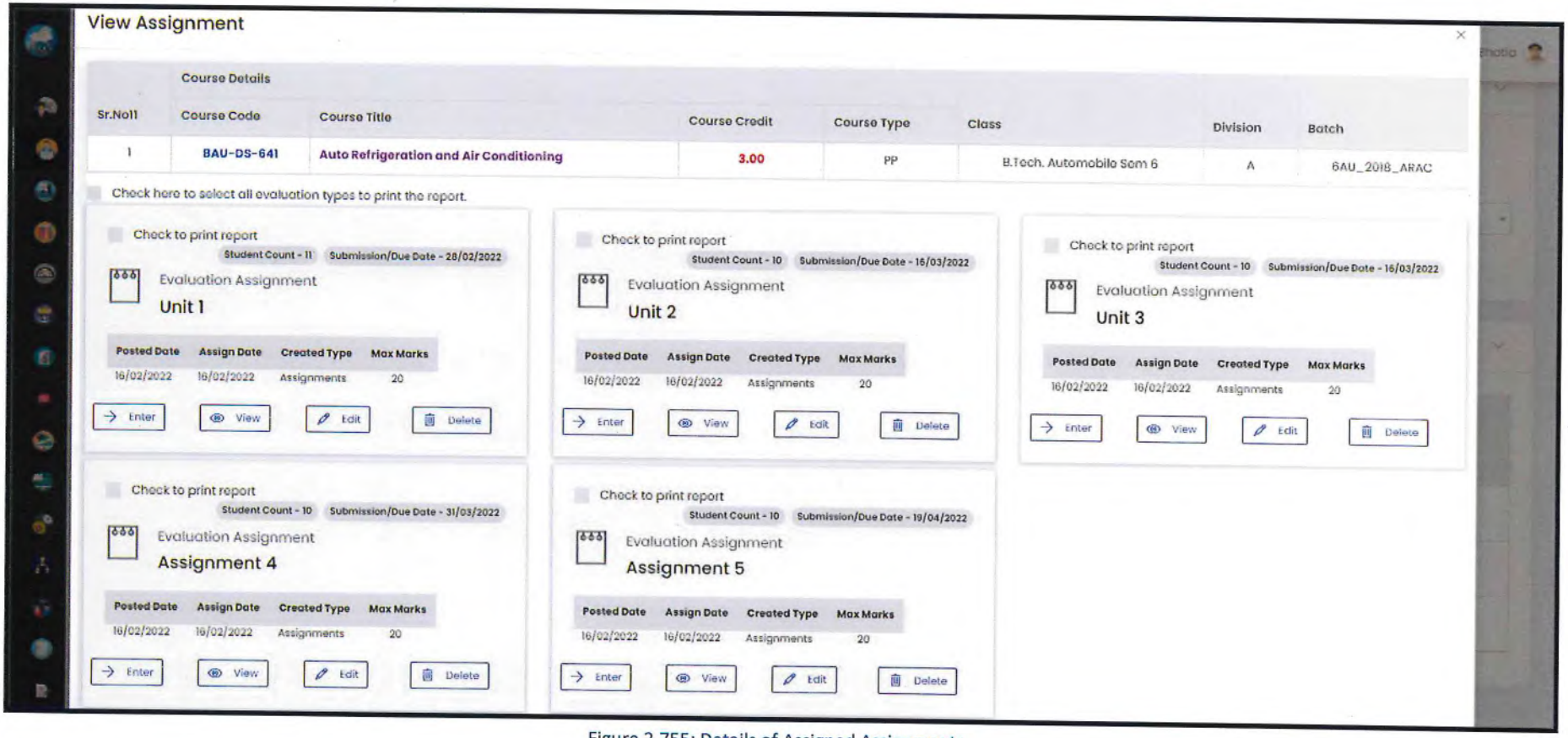

Figure 2.755: Details of Assigned Assignments

vi. To view the list of students who have submitted/not submitted the assignment, "View" button available under particular assignment can be selected. Here, the left side that is highlighted in GREEN color shows the list of students who have submitted the assignment and right side list down the defaulter students (highlighted in PINK Color) who have not submitted the assignment at the time of viewing the status.

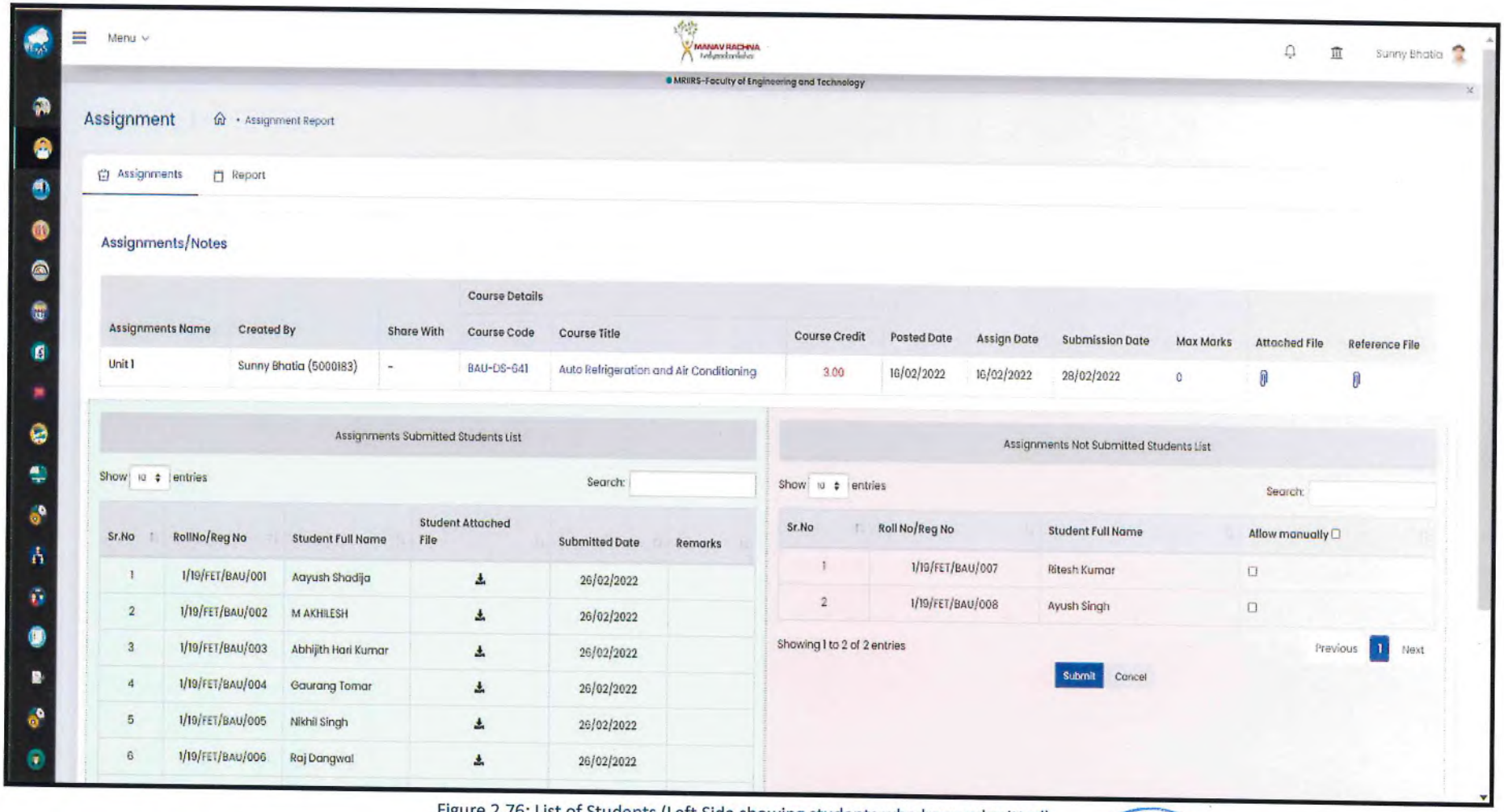

Figure 2.76: List of Students (Left Side showing students who have submitted)

vii. The evaluation of assignments can be done by faculty through "GO" button. In case, the students have submitted assignments manually to faculty, then, faculty can entertain their submission by ticking the Check boxes corresponding to student name present in Right side list and clicking on "Submit" button.

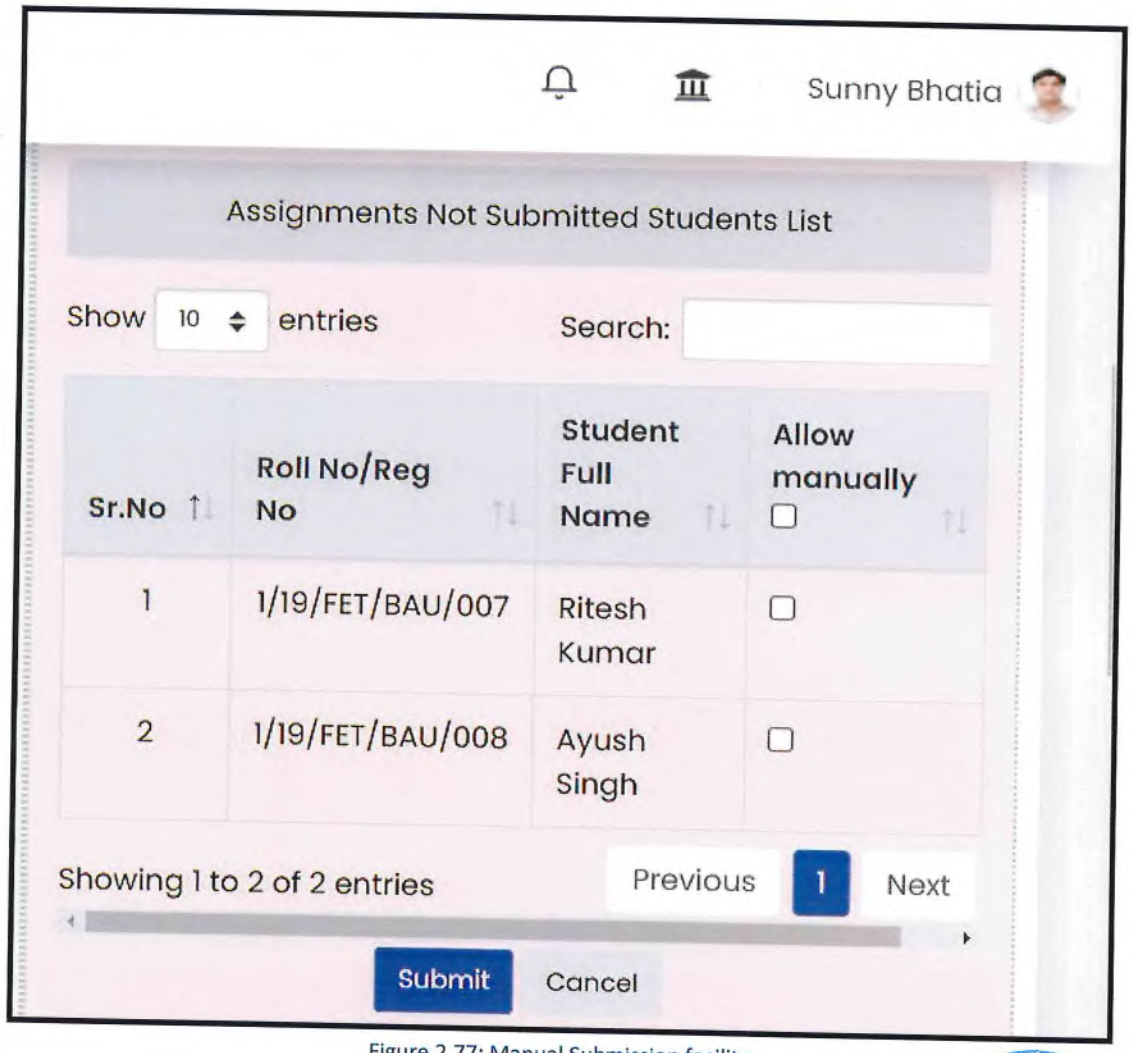

Figure 2.77: Manual Submission facility

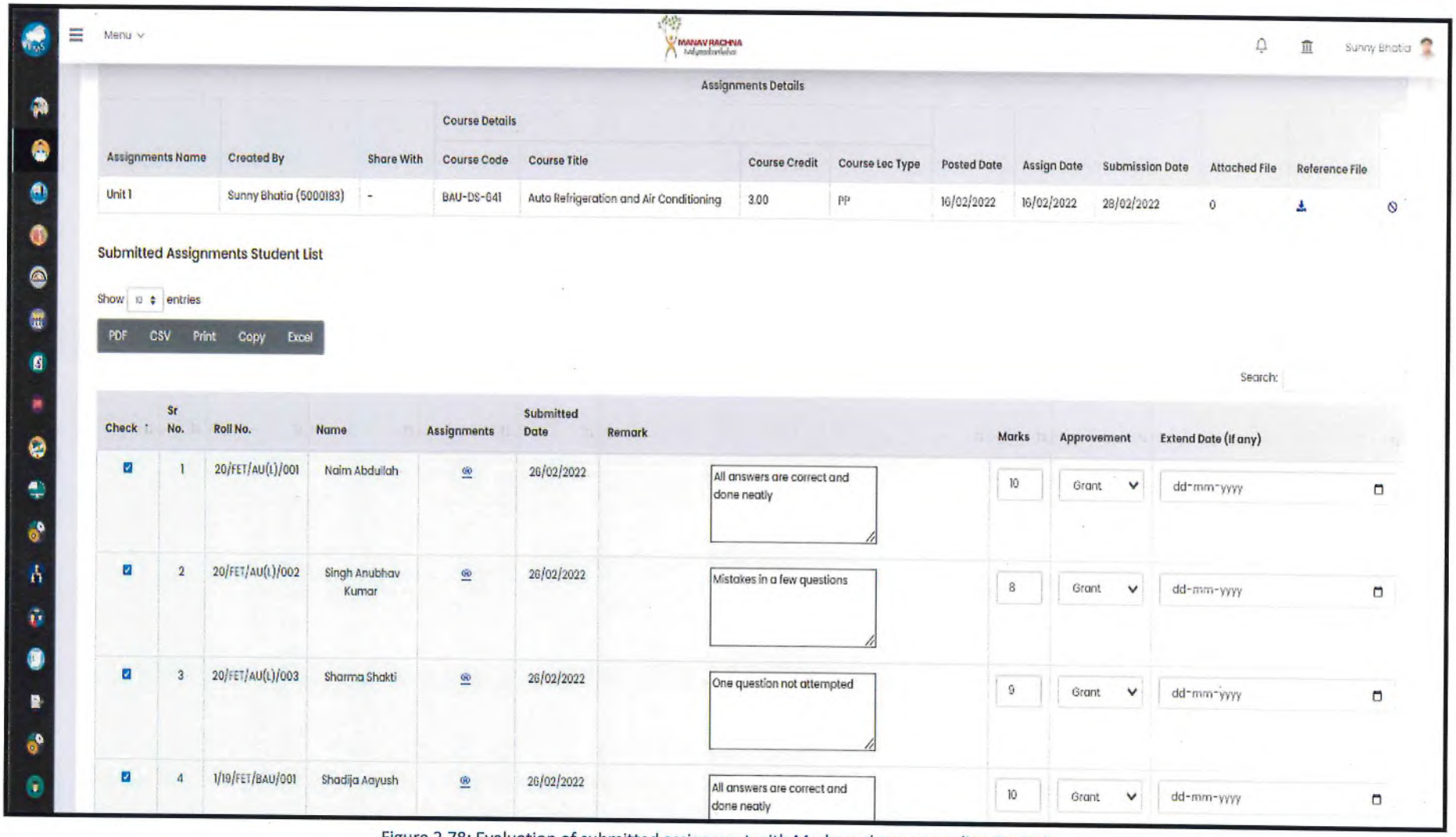

Figure 2.78: Evaluation of submitted assignment with Marks and corresponding Remarks

NOTE - *There are multiple reports that summarizes all academics related working which are explained under "**Reports**" Section.*

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3. EXAMINATION MODULE

3.1 Introduction:

- Examination plays a vital role in academics. Therefore, automated online EMS system at MRIIRS has also integrated this part into the system.
- There are two parts in which the evaluation of any course is done:
    - Continuous Internal Assessment (CIA)
    - End Semester Examination
- The Continuous Internal Assessment at MRIIRS includes parameters like Sessional Exams, Attendance marks, Assignments and Class Performance that are compiled together to form Continuous Internal Assessment of the course. There is decided weight-age for each parameter to form uniformity.
- The End Semester Examinations that are conducted at the end of the semester.
- Following are the tasks that are performed to configure the examination module on EMS:

3.2 QUESTION BANK CREATION:

- The system has the facility of creating the repository of questions that can further be used to create the Sessional Exam question paper.
- The "Question Bank" option is available on Main window.

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Figure 3.1: Main Window >> Question Bank

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- The questions can be added for the required Courses by selecting "Proceed" corresponding to the course, selecting "Exam Type" as "Main Exam", "Question Type" as "Descriptive" and then clicking on "CREATE QUESTIONS".

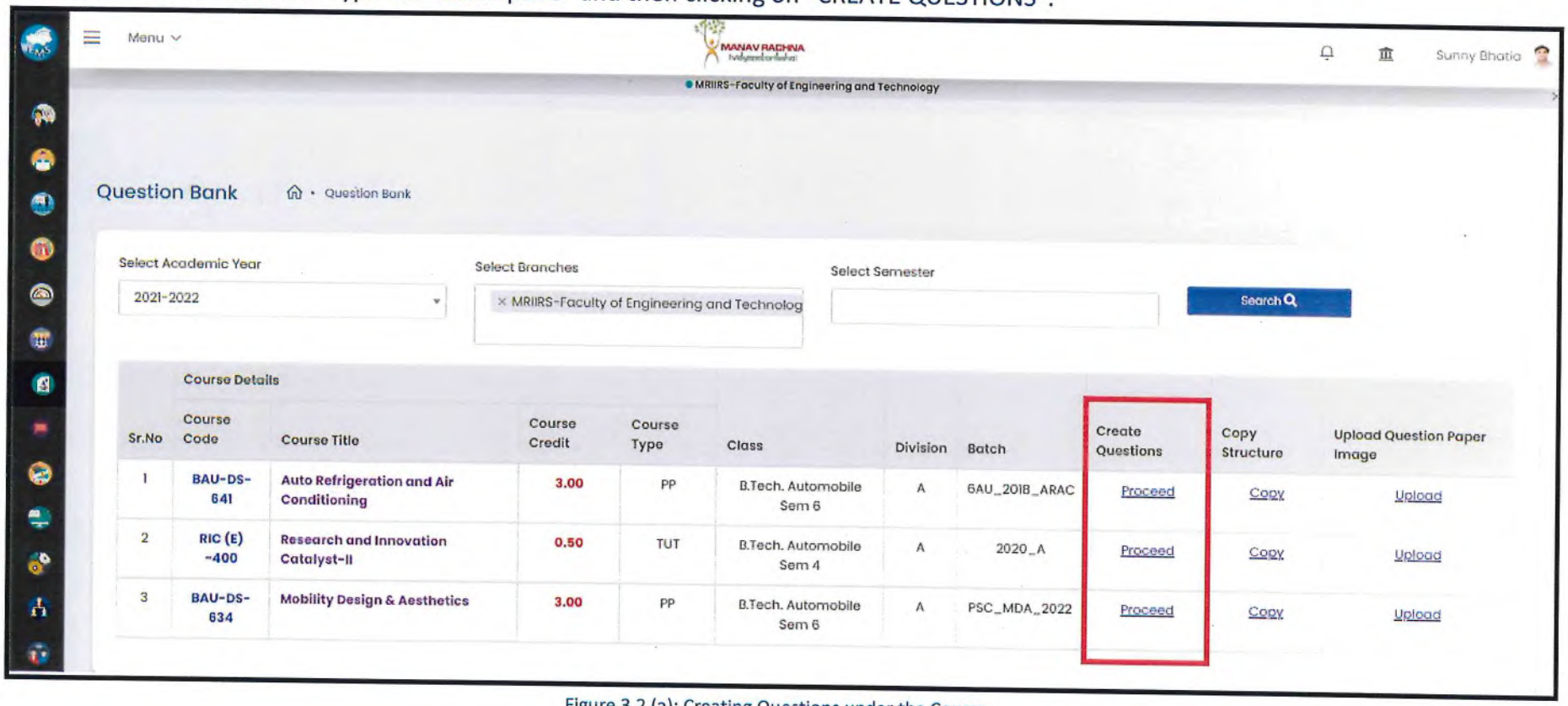

Figure 3.2 (a): Creating Questions under the Course

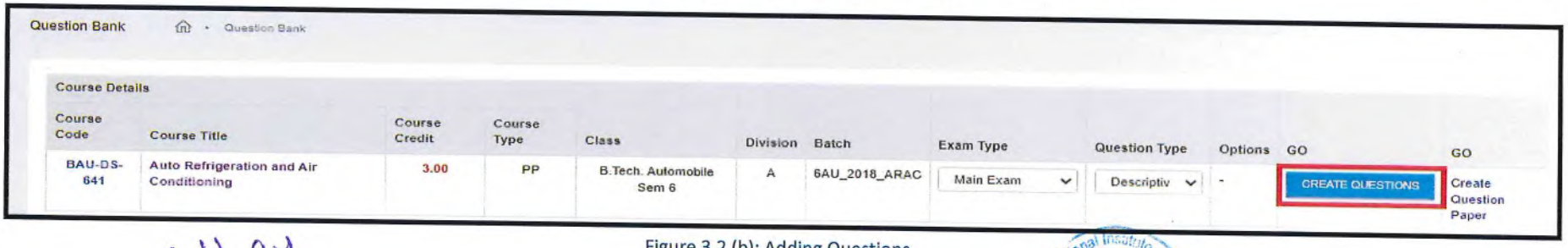

Figure 3.2 (b): Adding Questions

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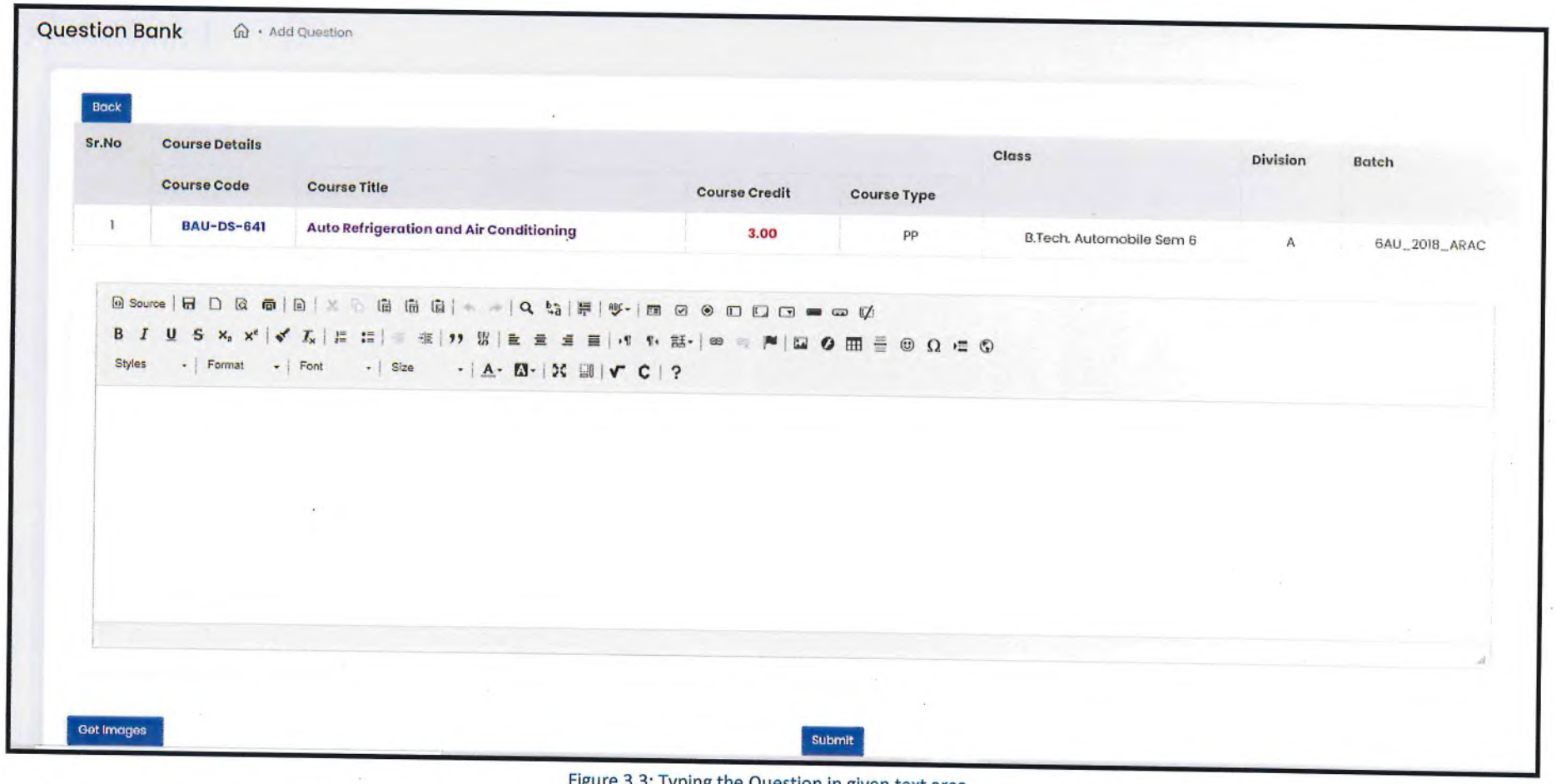

Figure 3.3: Typing the Question in given text area

- The entered questions are visible under "Created Question List", which later on can be used to create "Question Paper" and all created question papers can be viewed under "Created Question Paper List".

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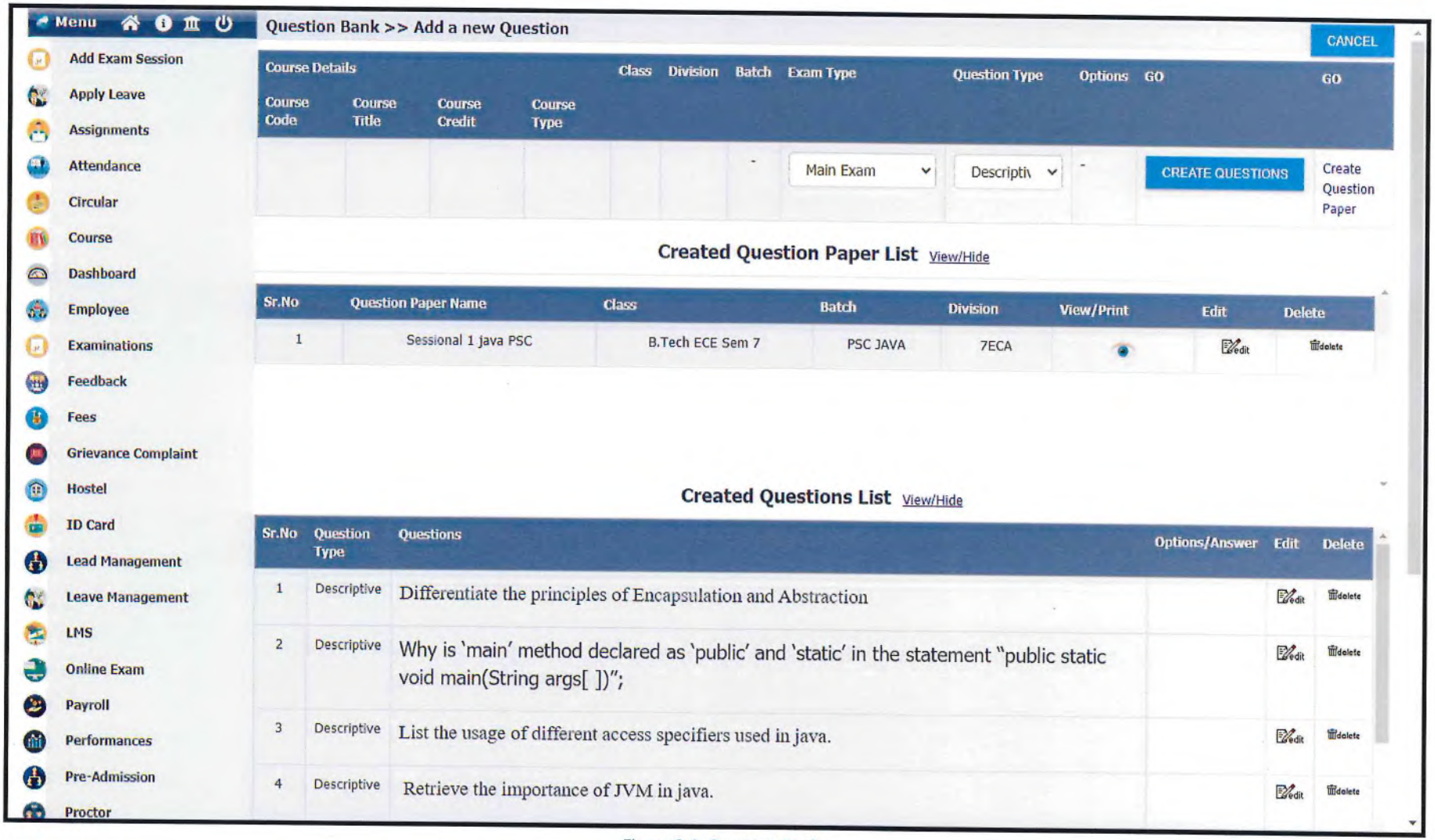

Figure 3.4: Question Bank

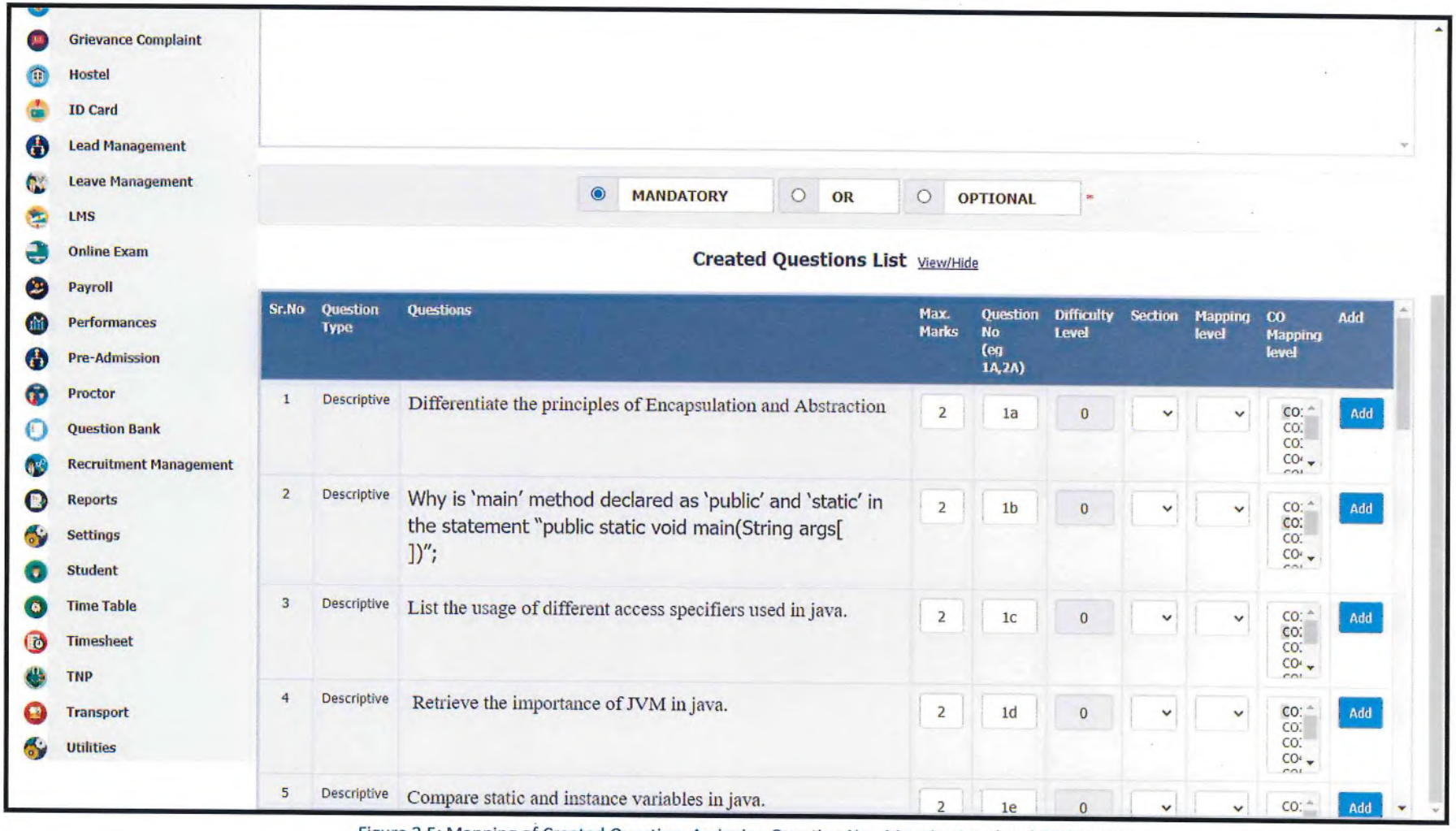

Figure 3.5: Mapping of Created Question, Assigning Question No., Mapping Level and CO Mapping

4. Admit Card (Hall Ticket) Generation

- Generation of admit card (hall ticket) for various exams can be done with help of the "Examination" option available on main screen.

Figure 4.1: Main Window >> Examination

- There are sub-tasks available under this setting that helps user to configure the system in a particular sequence without any problem.

These sub-tasks are:

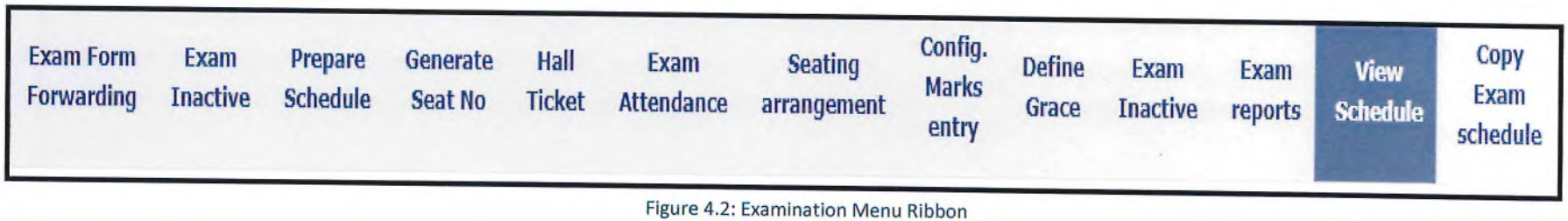

Figure 4.2: Examination Menu Ribbon

- Prepare Schedule – The first step where the EMS coordinators do mapping of required courses under various assessment parameters, entering the values of Maximum Marks and Passing percentage values.
- View Schedule – The prepared schedule can be seen through this option and if required necessary updating can be done through EDIT option available here.
- Hall Ticket – For the End Semester Examination, the Admit cards for Examination Hall are generated using this option.
- Copy Exam Schedule – Since the schedule is class depended, the schedule of one class (section) can be copied to another section of same semester through copy exam schedule.
- Seating Arrangement – The system also has the provision through which exam seating plan can be prepared and printed.
- Exam Forwarding Memo – The required configuration required for various types of exam like Regular exam, Reappear examination etc can be done with help of Exam forwarding Memo

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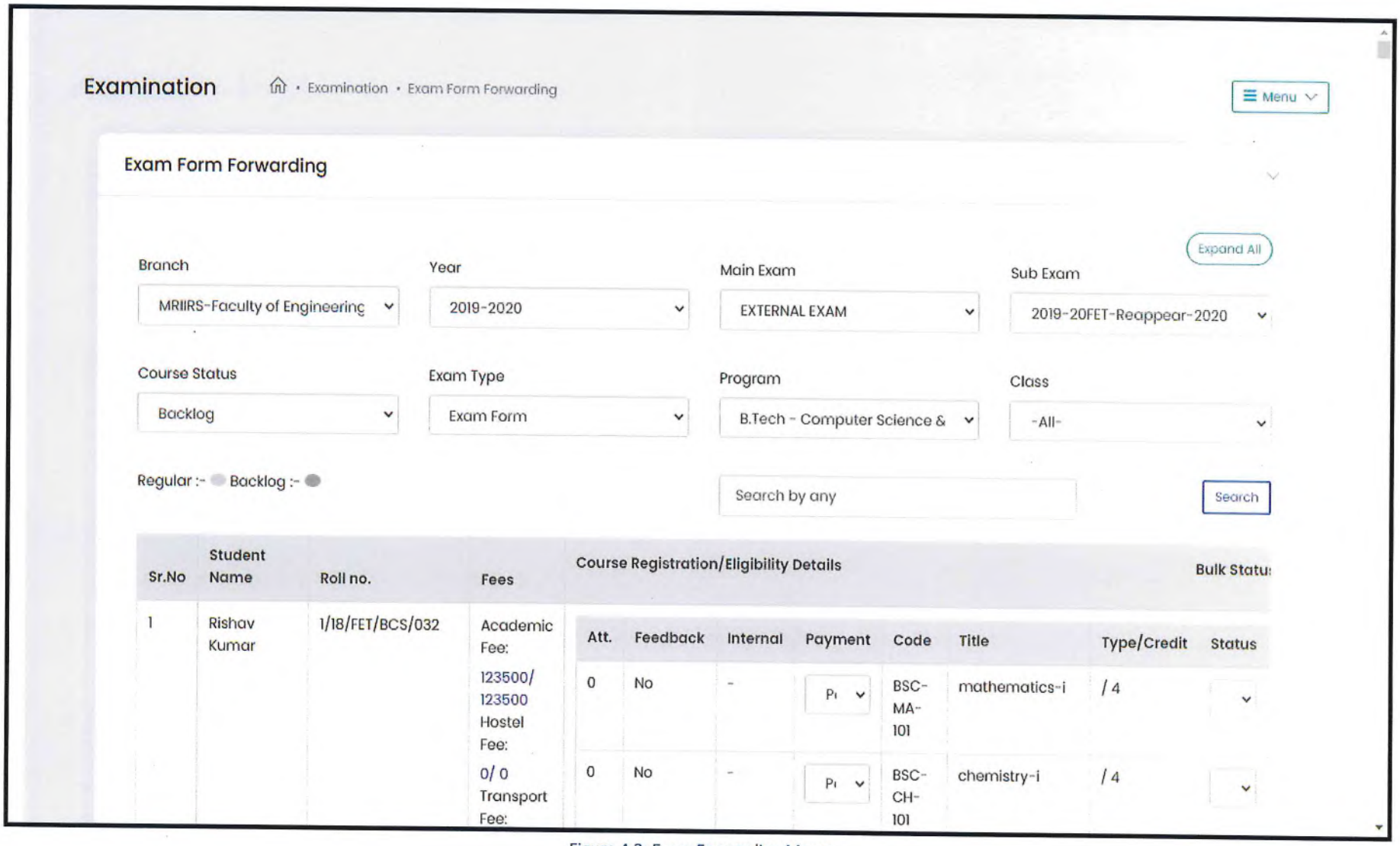

Figure 4.3: Exam Forwarding Memo

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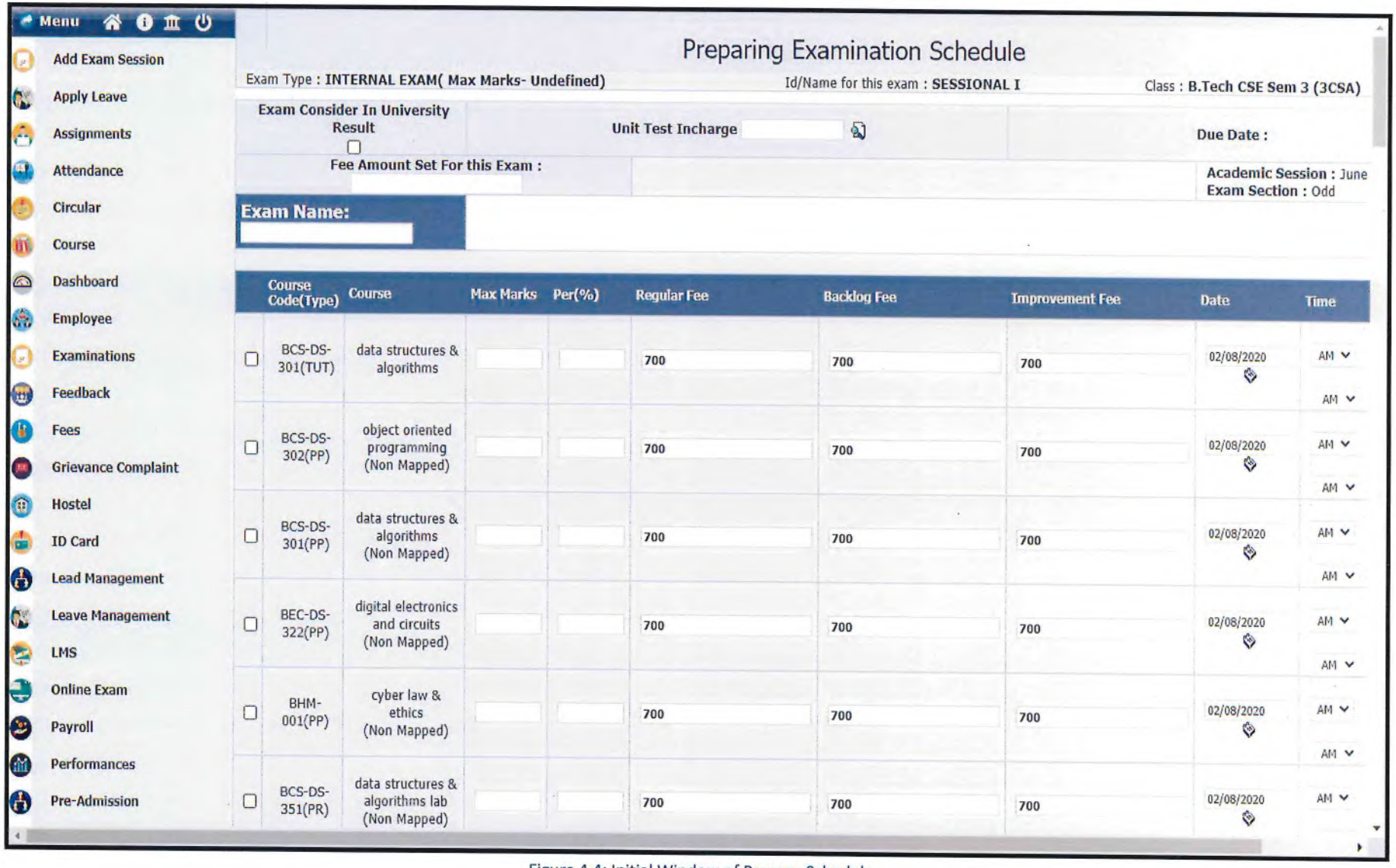

Figure 4.4: Initial Window of Prepare Schedule

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Preparing Examination Schedule

Exam Type : **INTERNAL EXAM(Max Marks- Undefined)** Id/Name for this exam : **SESSIONAL I** Class : **B.Tech CSE Sem 3 (3CSA)**

Exam Consider In University Result ☐ **Unit Test Incharge** **Due Date :**

Fee Amount Set For this Exam : **Academic Session :** Jun
Exam Section : Odd

Exam Name:

	Course Code(Type)	Course	Max Marks	Per(%)	Regular Fee	Backlog Fee	Improvement Fee	Date	Time
☐	BCS-DS-301(TUT)	data structures & algorithms			700	700	700	02/08/2020	AM / AM
☑	BCS-DS-302(PP)	object oriented programming (Non Mapped)	30	40	700	700	700	02/08/2020	AM / AM

Figure 4.5: Mapping of Course with Internal Parameter

Menu

- Add Exam Session
- Apply Leave
- Assignments
- Attendance
- Circular
- Course
- Dashboard
- Employee

Jan - May - Even - SESSIONAL I B.Tech. CSE Sem 4-4CSA

Course Code	Course	Course Type	Date	Time	Check Eligibility
BCS-DS-401	Discrete Mathematics	PP	2020-04-09	-AM To -AM	Mark Eligible
BCS-DS-402	Computer Organization & Architecture	PP	2020-04-09	-AM To -AM	Mark Eligible
BCS-DS-403	Operating Systems	PP	2020-04-09	-AM To -AM	Mark Eligible
BCS-DS-404	Database Management Systems	PP	2020-04-09	-AM To -AM	Mark Eligible
BCS-DS-405	Computer Networks	PP	2020-04-09	-AM To -AM	Mark Eligible
BHM-MC-006	Quantitative Aptitude and Personality Development-I	PR	2020-04-09	-AM To -AM	Mark Eligible
BCS-DS-421	Software Engineering	PP	2020-05-11	-AM To -AM	Mark Eligible

Edit O.K

Figure 4.6: View Schedule Screen

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☐	BCS-DS-403(TUT)	Operating Systems			700	700	700	02/08/2020
☐	BCS-DS-404(TUT)	Database Management Systems			700	700	700	02/08/2020
☑	BHM-MC-006(PR)	Quantitative Aptitude and Personality Development-I	30.00	40.00	2500	2500	700	09/04/2020
☐	BCH-MC-002(TUT)	EVS			700	700	700	02/08/2020
☑	BCS-DS-401(PP)	Discrete Mathematics	30.00	40.00	2500	2500	700	09/04/2020
☑	BCS-DS-402(PP)	Computer Organization & Architecture	30.00	40.00	2500	2500	700	09/04/2020
☑	BCS-DS-403(PP)	Operating Systems	30.00	40.00	2500	2500	700	09/04/2020
☑	BCS-DS-404(PP)	Database Management Systems	30.00	40.00	2500	2500	700	09/04/2020
☑	BCS-DS-405(PP)	Computer Networks	30.00	40.00	2500	2500	700	09/04/2020
☐	BCS-DS-474(PR)	Java Programming			700	700	700	02/08/2020
	BCS-DS-							

Figure 4.7: Editing window under View Schedule

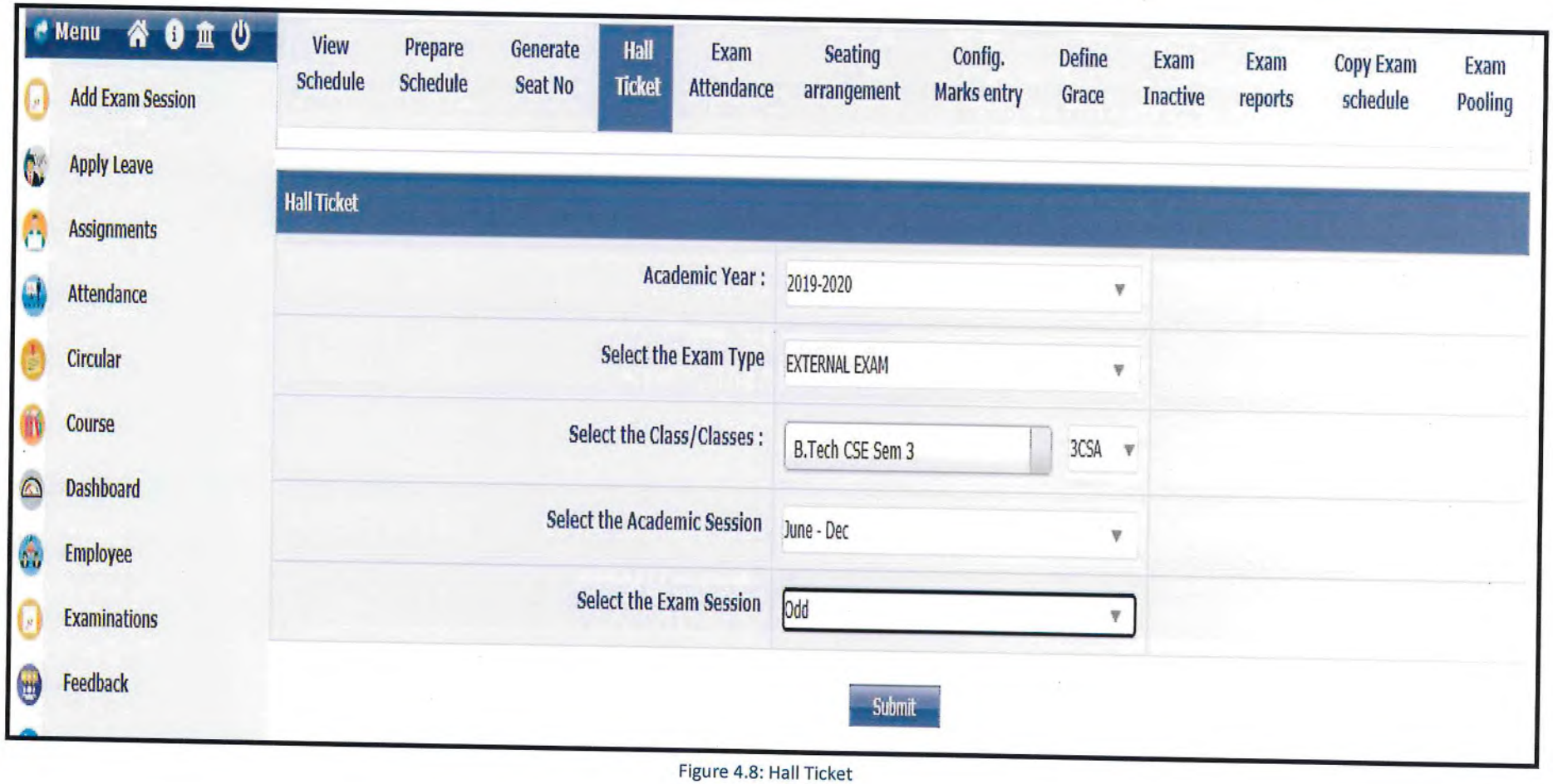

Figure 4.8: Hall Ticket

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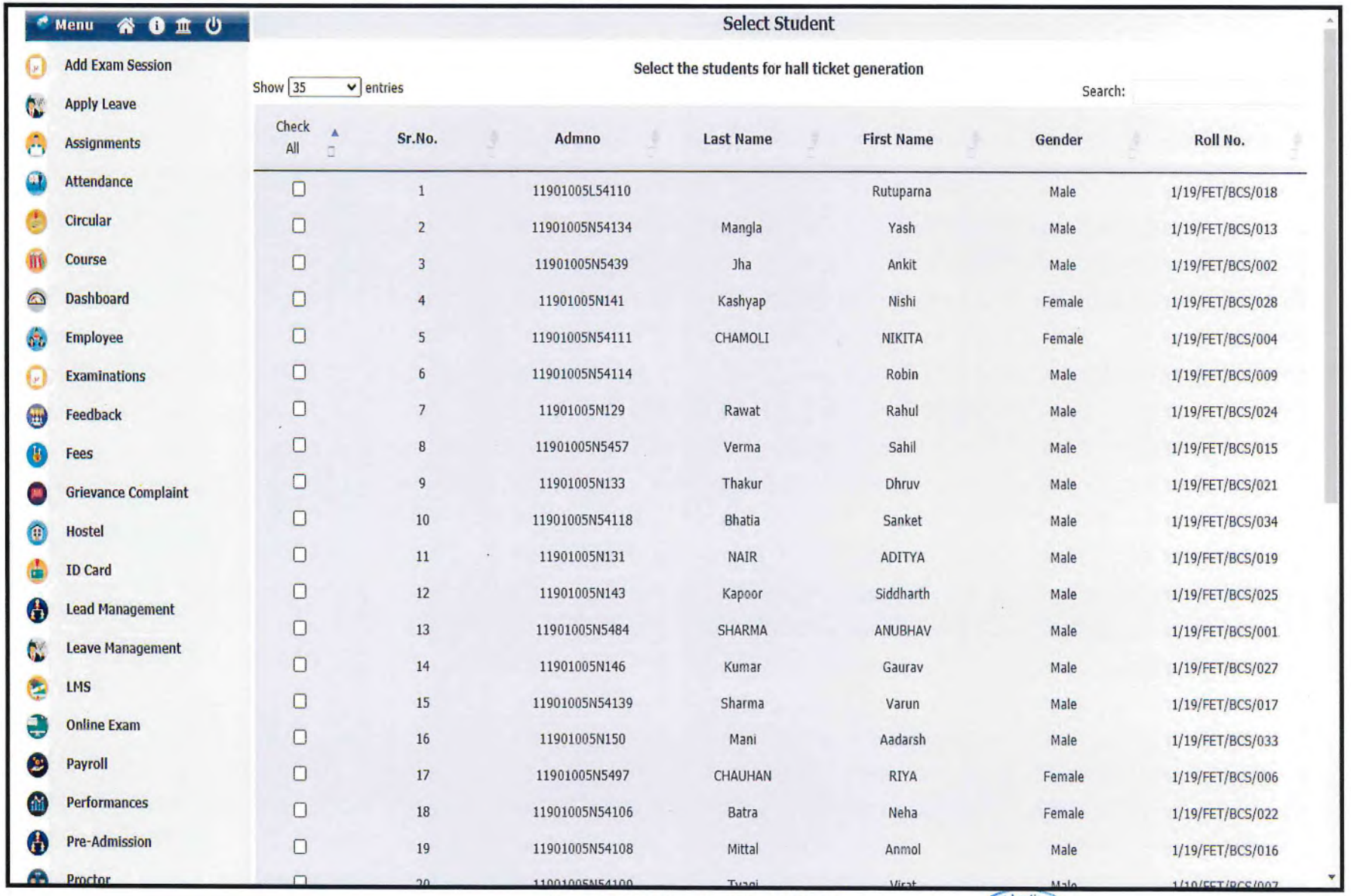

Figure 4.9: List of students for Hall Ticket

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MANAV RACHNA
Admit Card/Hall ticket

REGISTRATION NO	YEAR OF REGISTRATION	PROGRAM CODE	PROGRAM NAME
18/FMS/0083	2018	221	MASTER OF BUSINESS ADMINISTRATION (DUAL SPECIALISATION)

FACULTY NAME	MRIIRS-FACULTY OF MANAGEMENT STUDIES			
NAME OF STUDENT	PURNIMA NAGAL			
CLASS ROLL NUMBER	18/FMS/MBA/065	CLASS	MBA(DUAL SPL) SEM-III	
FATHER NAME	TEJBIR SINGH			
DATE OF BIRTH	14/11/1997	GENDER	FEMALE	
EXAM NAME	END TERM EXAMINATION DECEMBER, 2019			STUDENT SIGNATURE

SUBJECT DETAILS

SUBJECT CODE	SUBJECT TITLE	DATE	TIME	SUPERVISOR SIGN
MBA-GE-02	PROFESSIONAL COMPETENCY-III: EMPLOYABILITY SKILLS	11/12/2019	01:00-PM TO 04:00-PM	
MBA-MK-3003	CONSUMER BEHAVIOR	13/12/2019	01:00-PM TO 04:00-PM	
MBA-MK-3002	INTEGRATED MARKETING AND COMMUNICATION	17/12/2019	01:00-PM TO 04:00-PM	
MBA-HROB-3004	COMPENSATION AND BENEFITS MANAGEMENT	18/12/2019	01:00-PM TO 04:00-PM	
MBA-HROB-3005	ORGANIZATION CHANGE AND DEVELOPMENT	23/12/2019	01:00-PM TO 04:00-PM	
MBA-MK-3001	PRODUCT AND BRAND MANAGEMENT	24/12/2019	01:00-PM TO 04:00-PM	
MBA-HROB-3001	PERFORMANCE MANAGEMENT IN ORGANIZATIONS	27/12/2019	01:00-PM TO 04:00-PM	

[CONTROLLER OF EXAMINATIONS]

Figure 4.10: Sample Hall Ticket

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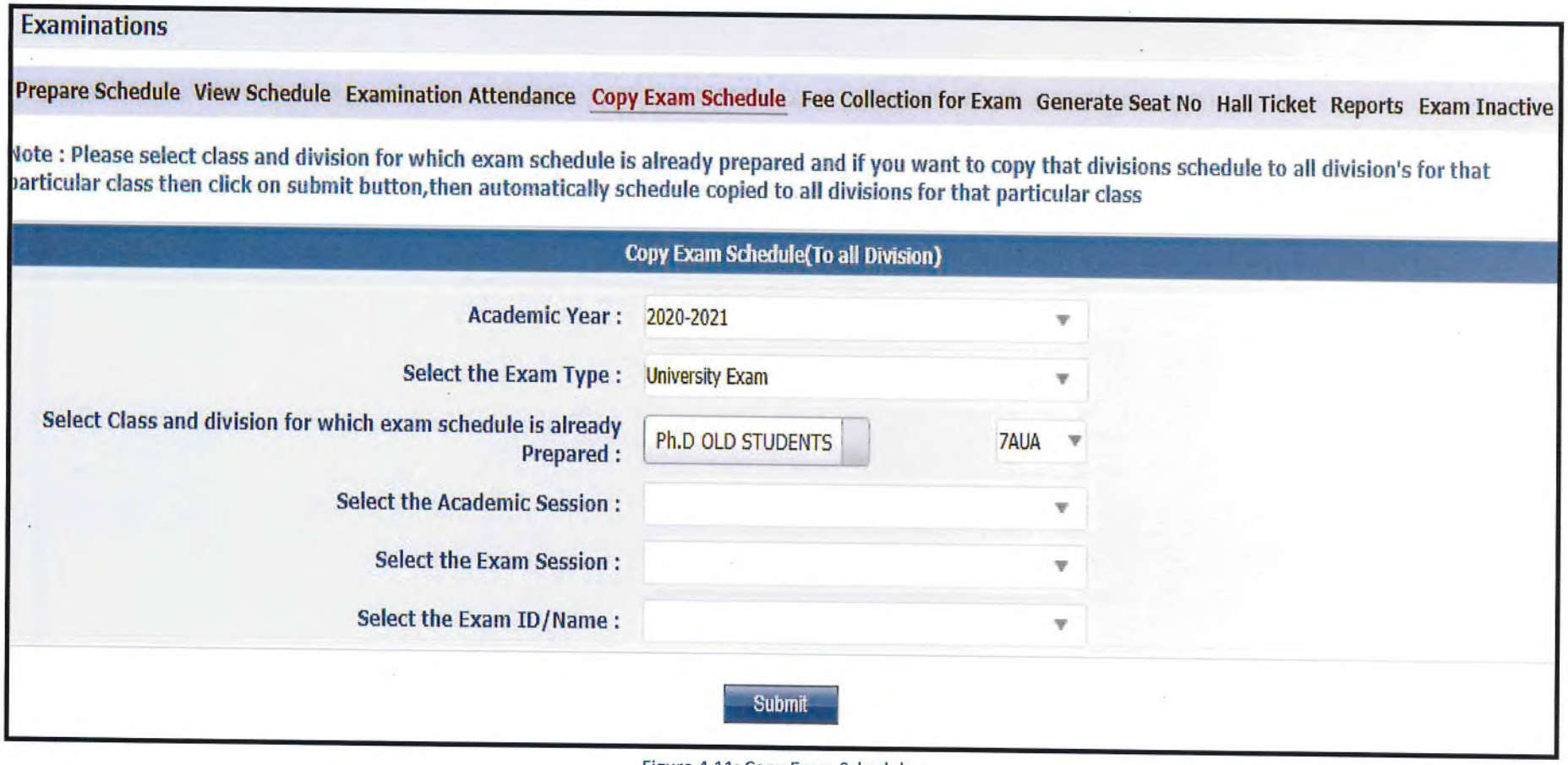

Figure 4.11: Copy Exam Schedule

5. REAPPEAR FORM APPLICATION –

- The declared past external result of students can be imported into the system and the subjects in which students were having reappears or were absent can apply for appearing again.

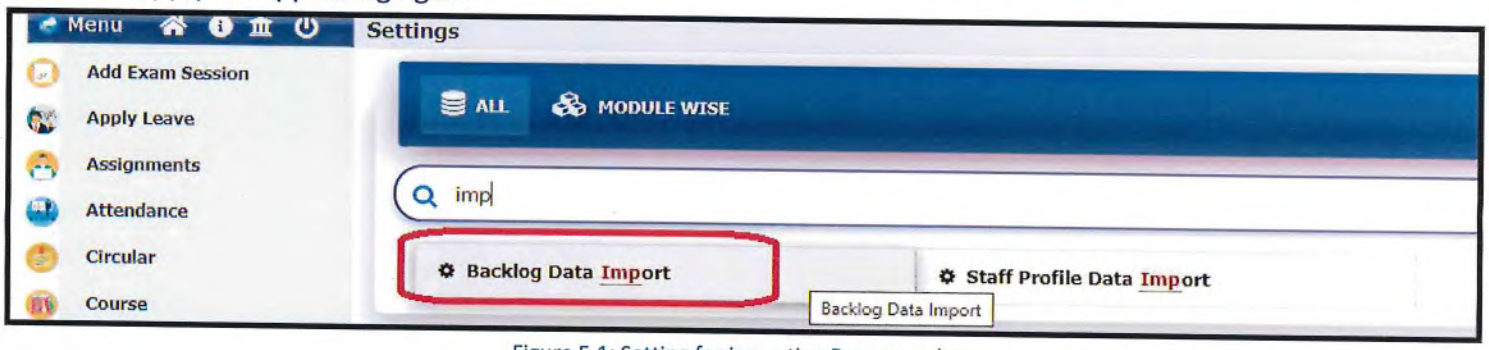

Figure 5.1: Setting for importing Reappear data

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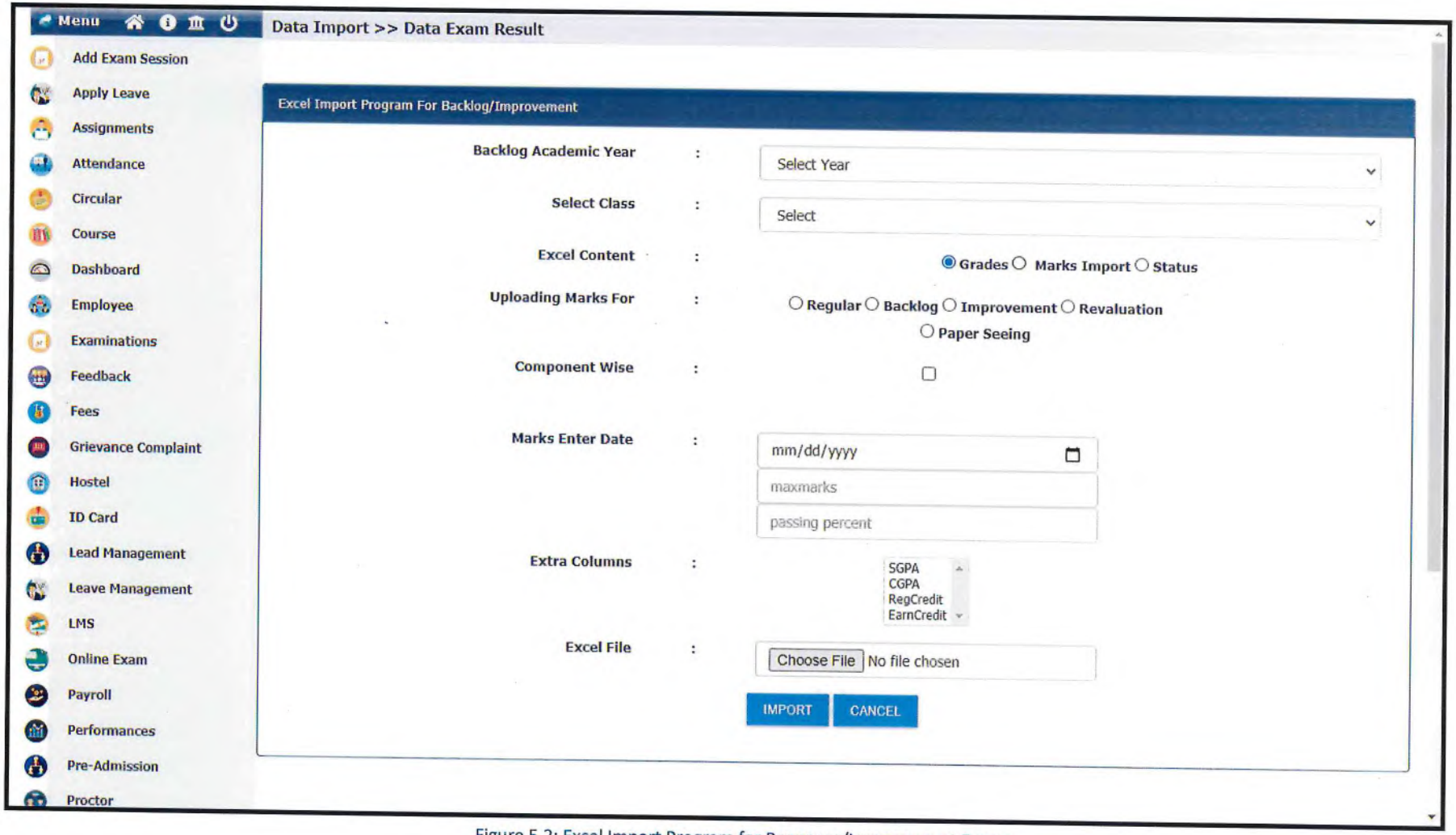

Figure 5.2: Excel Import Program for Reappear/Improvement Exams

- Once the data is imported students are able to view their grades on their login Semester wise and can apply for the course accordingly.

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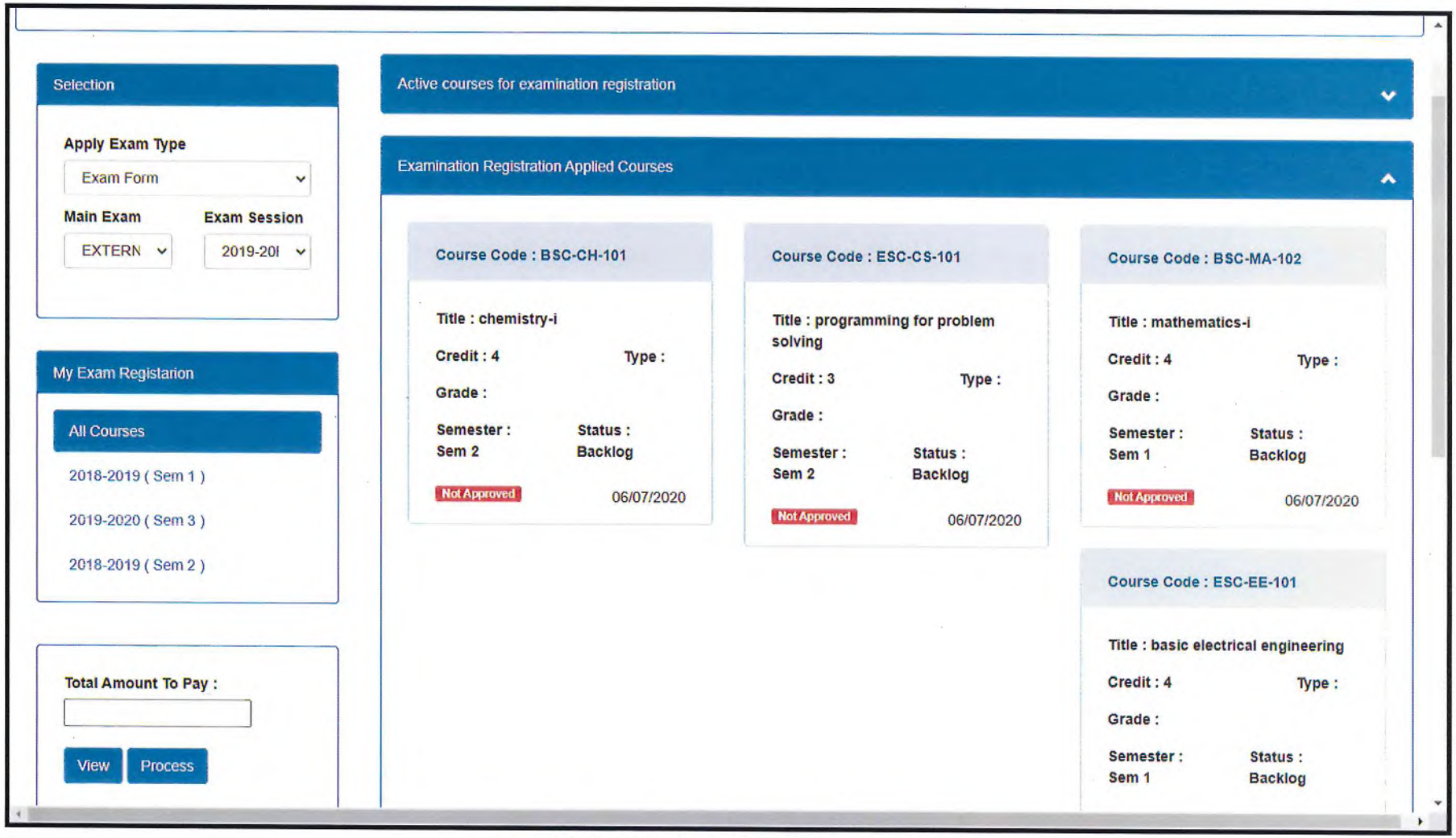

Figure 5.3: Student Portal view for applying of Reappear Exam

- Student can pay for the reappear exam through same window.

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6. RESULT PROCESSING

Result processing includes uploading of marks of continuous assessment, generation of cut-list, uploading of answer scripts, generation of examination reports and grade card, etc.

6.1 CONTINUOUS INTERNAL ASSESSMENT -MARKS UPLOADING

- The faculty members teaching the course have to fill in the marks for all the internal assessment parameters.
- There are different parameters depending upon the nature of course i.e. Practical course have different parameter than Theory courses.
- The provision of entering marks is provided in PERFORMANCE. This is available on Main Window itself.
- The parameter can be selected from scheduled sub-exam list and then clicking on "Proceed to Add Marks".

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Figure 6.1: Main Window >> Performance

- The departmental EMS Coordinators prepare the schedule for these internal assessment parameters and then faculty members can fill in the required marks in "Add Marks" for every parameter.

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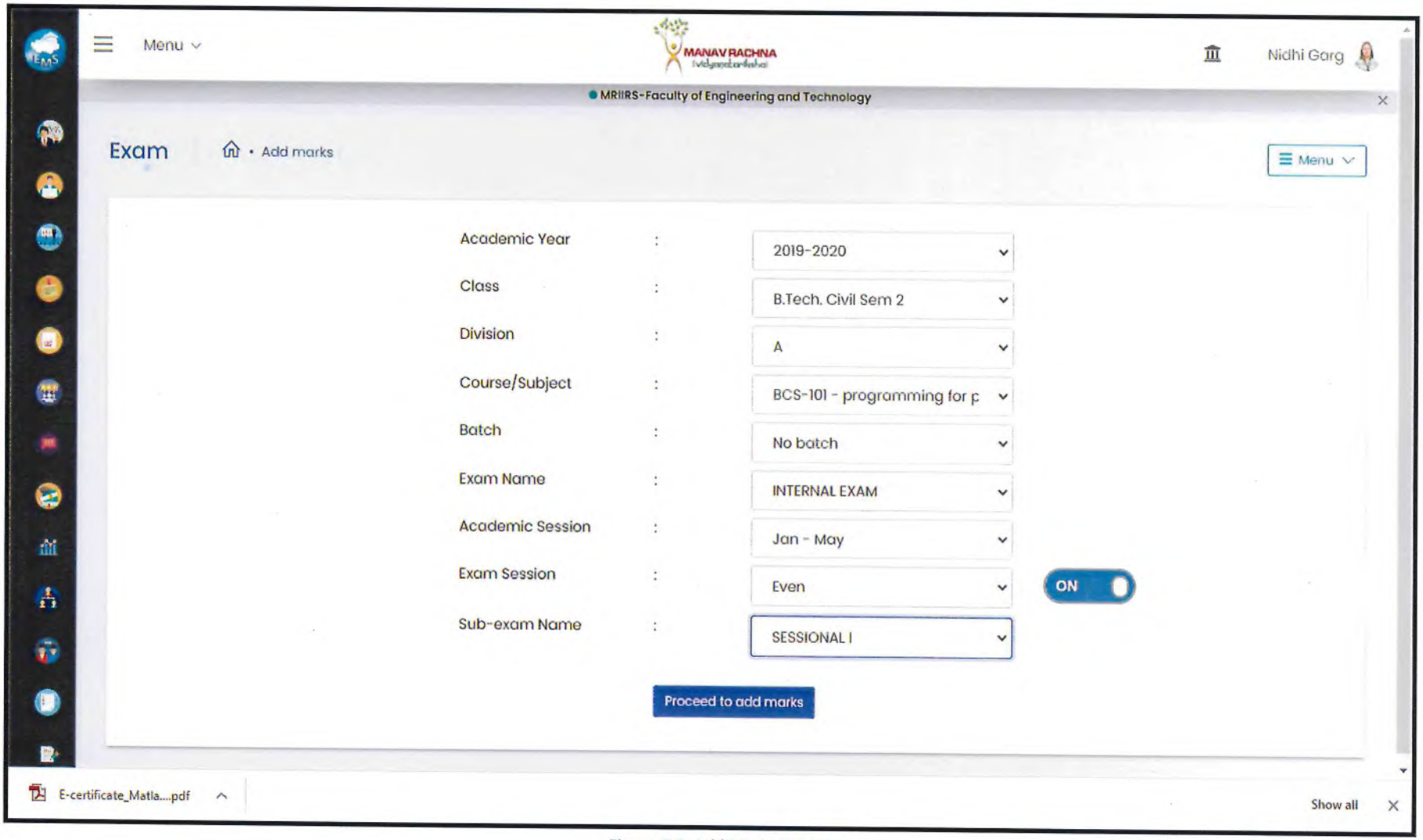

Figure 6.2: Add Marks Screen

- All the parameters can be selected for marks entry in one go by sliding the ON/OFF button to "Off".

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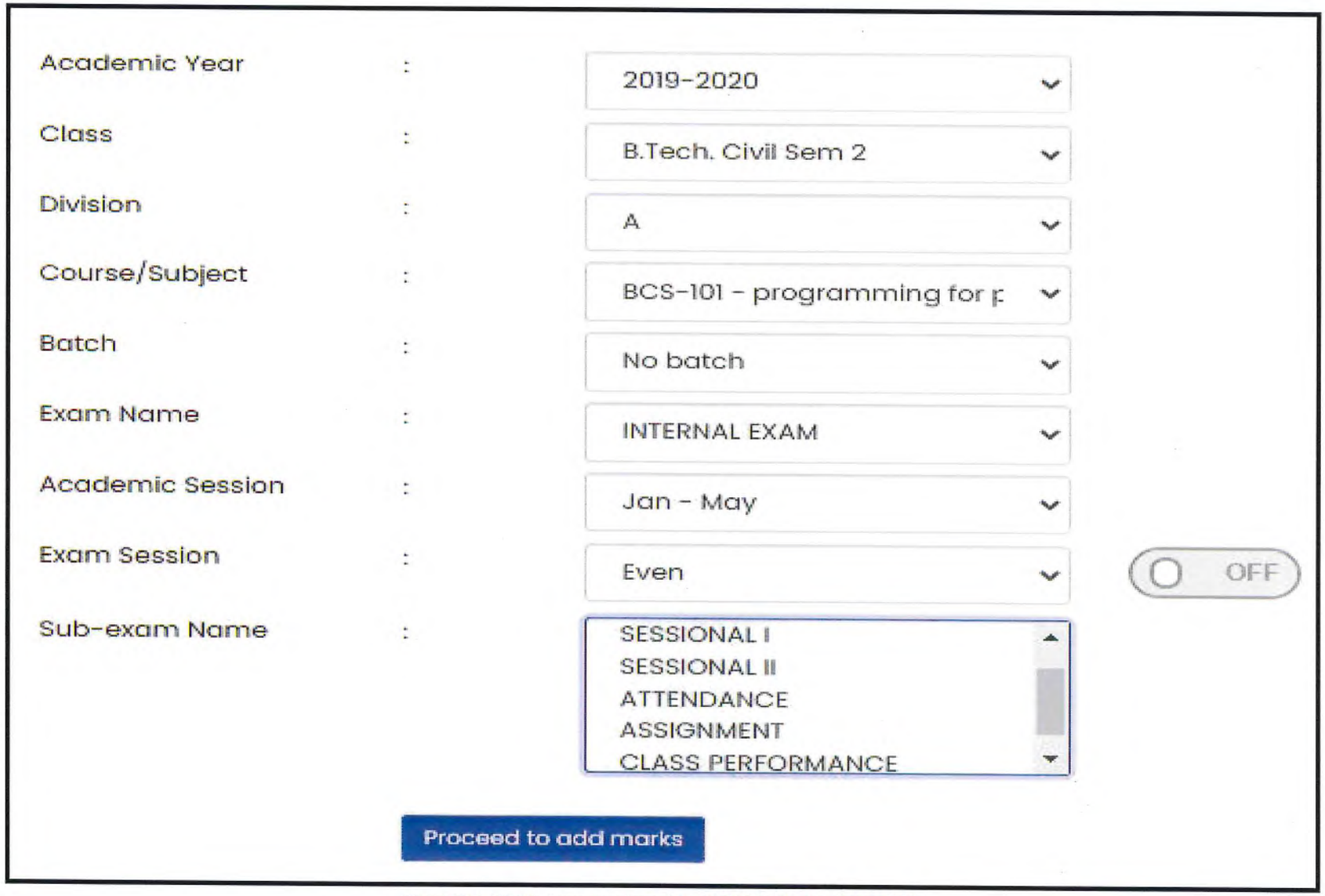

Figure 6.3: All Sub-Exam can be selected if sliding bar indicates OFF

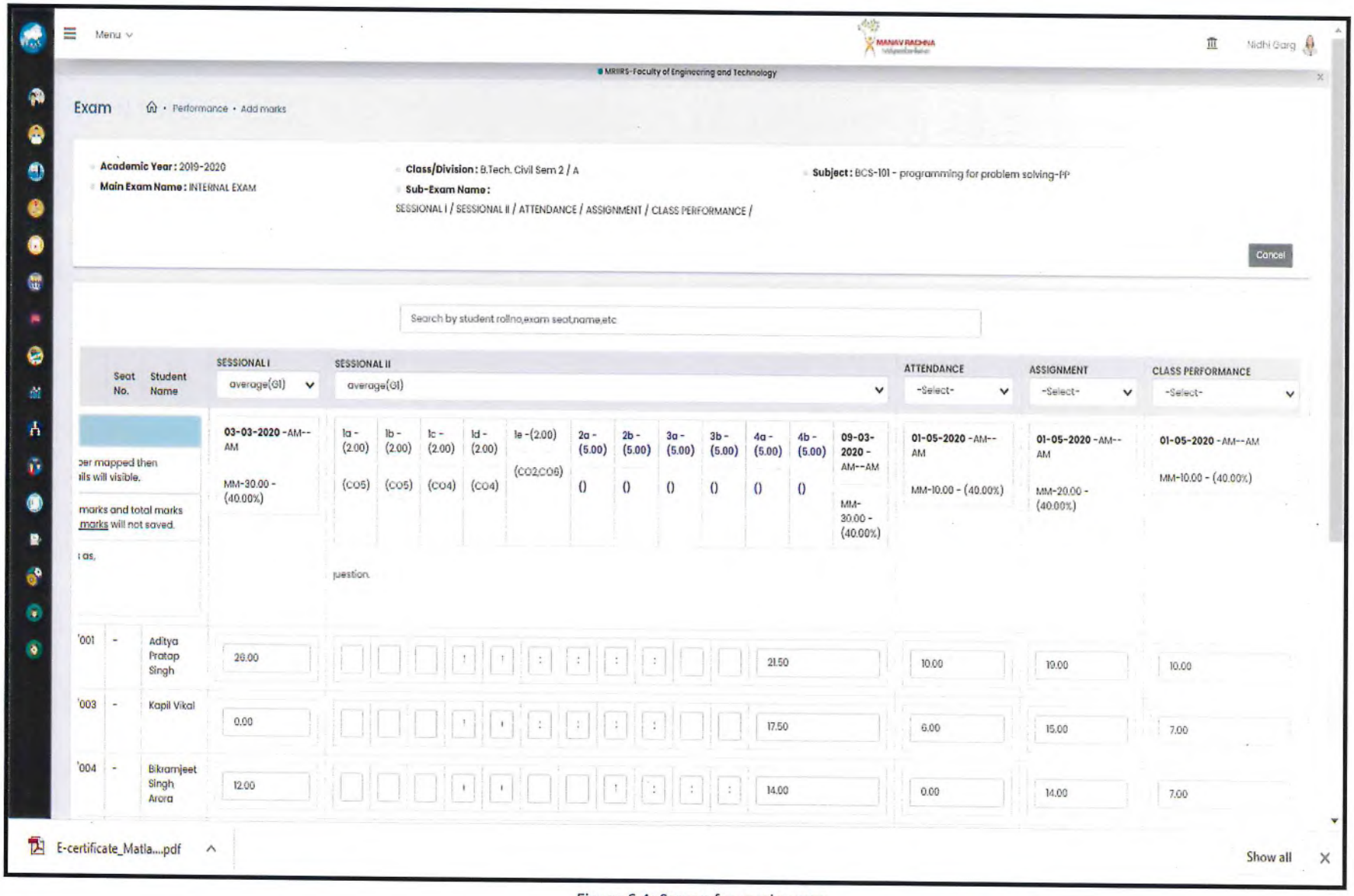

Figure 6.4: Screen for marks entry

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- If there is requirement of Scaling marks of any scheduled parameter, then the faculty can select the mathematical formula for that parameter from drop-down available.

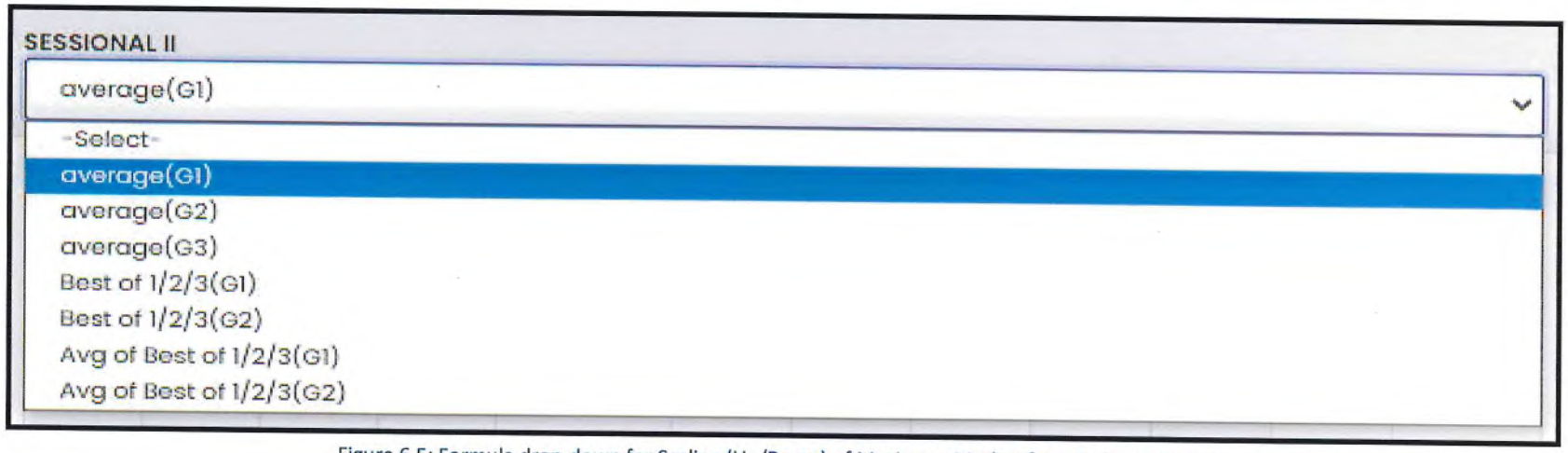

Figure 6.5: Formula drop-down for Scaling (Up/Down) of Maximum Marks of particular parameter

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6.2 CUT-LIST GENERATION –

- The Examination Branch can generate the Cut-list for the schedule exam having details of students who have applied for Reappear exam.

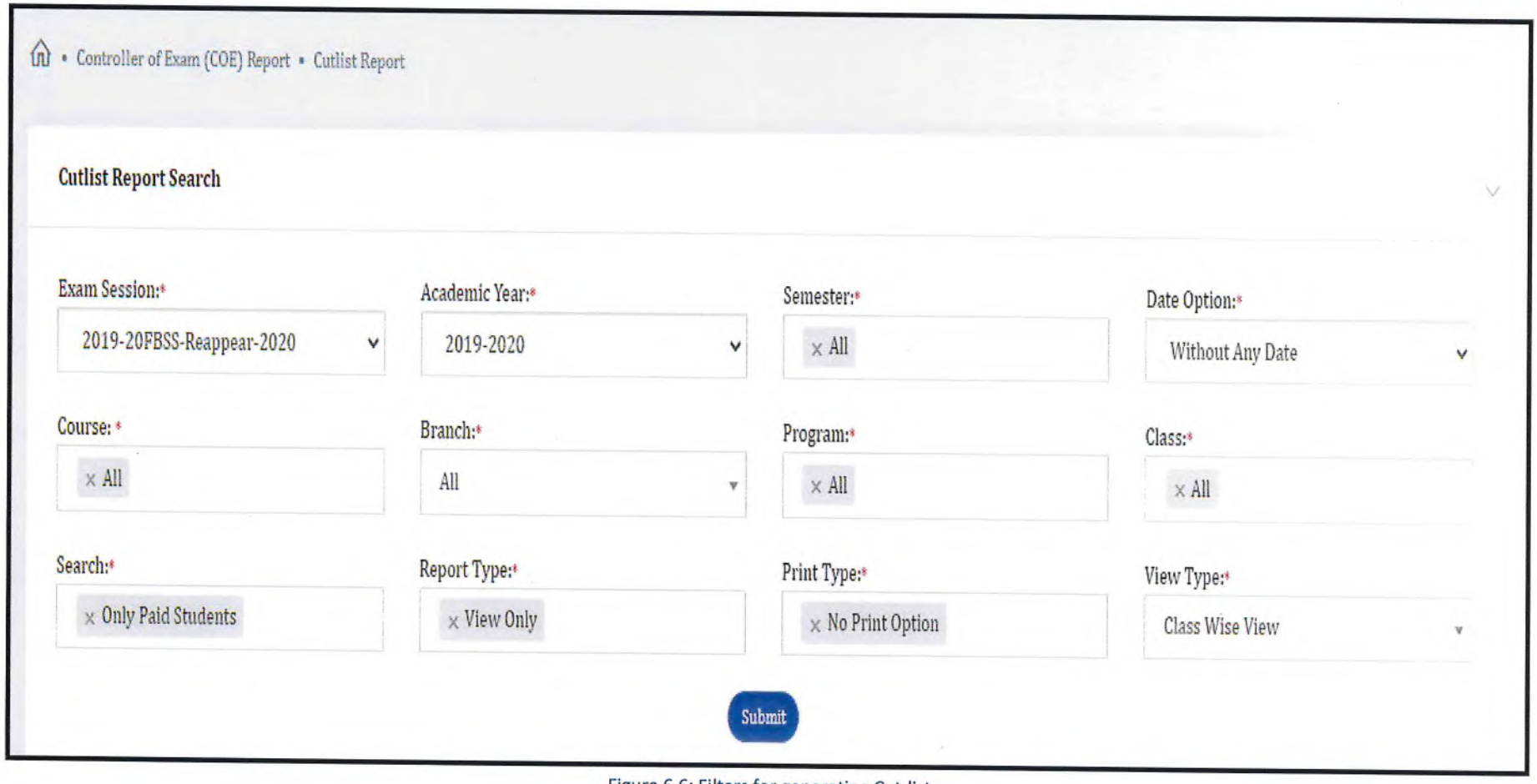

Figure 6.6: Filters for generating Cut-list

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Branch: MRIIRS-Faculty of Engineering and Technology
Department: Department of Automobile Engineering
Class: B.Tech. Automobile - Sem 6
Year: 2019-2020

Sr.	Student	Adm No.	Roll No.	DOB	Subjects		Total Subjects	Amount Paid	Ledger
					Heat Transfer M-604	Operation Research M-601A			
1	Anurag Chauhan	MREI2752	1/15/FET/BAU/1/016	02/09/1996	Applied		1	10500	
2	Ankit Raj	2015UG00059	1/15/FET/BAE/1/013	14/12/1993		Applied	1	2800	
3	Himanshu Sengar	MREI2761	1/16/FET/BAU/1/004	23/10/1997	Applied		1	2100	
				2	1	3	..		

Branch: MRIIRS-Faculty of Engineering and Technology
Department: Department of Automobile Engineering
Class: B.Tech. Automobile - Sem 8
Year: 2019-2020

Sr.	Student	Adm No.	Roll No.	DOB	Subjects	Total Subjects	Amount Paid	Ledger
					Human Resource Management HM-822			
1	Anurag Chauhan	MREI2752	1/15/FET/BAU/1/016	02/09/1996	Applied	1	10500	
				1	1	..		

Branch: MRIIRS-Faculty of Engineering and Technology
Department: Department of Biotechnology
Class: B.Tech. Biotechnology - Sem 1
Year: 2019-2020

Sr.	Student	Adm No.	Roll No.	DOB	Applied Maths-i MA-101A	Elements Of Computer And Programming CS-101	Elements Of Electrical Engineering EE-101B	Applied Physics-i PH-101A	Mathematics For Biotecl BMA-103
1	Deepika Dhawan	MREI797	1/16/FET/BBT/1/019	18/06/1998	Applied				
2	Twinkle	MREI2188	1/16/FET/BCC/1/043	26/05/1996	Applied	Applied			
3	Ashish Mor	MREI2190	1/16/FET/BCC/1/045	03/04/1997			Applied		
4	Divyanshu Rawat	MREI2461	1/16/FET/BCC/1/124	05/01/1998		Applied		Applied	
5	Vikas Choudhary	MREI1131	1/16/FET/BCI/1/024	-				Applied	
6	Priyanka Mena	MREI1139	1/16/FET/BCI/1/033	08/09/1998	Applied				
7	Anmol Tyagi	MREI1143	1/16/FET/BCI/1/037	-	Applied				
8	Sachin	MREI1145	1/16/FET/BCI/1/039	01/08/1998	Applied				
9	Pulkit Gupta	MREI1147	1/16/FET/BCI/1/042	-				Applied	
10	Deepanshu Mehta	MREI105	1/16/FET/BEC/1/001	17/06/1998			Applied		

Figure 6.7: Generated Cut-list (Class-wise)

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Course: Applied Physics-ii Pre - (PH-201A)										
Year: 2019-2020										
Sr.	Student	Rollno	DOB	Type	Class	Semester	Branch	Need to Pay	Total Paid	Total Remainings
1	Chinky Roy	14011011FE1227	-	Backlog	BTech CSE	Sem 2	MRU-Faculty of Engineering	11900	16800	X
2	Sahil Dang	MREI740	15/01/1995	Backlog	B.Tech. Biotechnology	Sem 2	MRIIRS-Faculty of Engineering and Technology	5600	5600	X
3	Gaurav Dagar	MREI814	27/10/1997	Backlog	B.Tech. Biotechnology	Sem 2	MRIIRS-Faculty of Engineering and Technology	3500	3500	X
4	Naman Choudhary	MREI770	02/02/1997	Backlog	B.Tech. Biotechnology	Sem 2	MRIIRS-Faculty of Engineering and Technology	14000	14000	X
5	Vikas Choudhary	MREI1131	-	Backlog	B.Tech. Civil	Sem 2	MRIIRS-Faculty of Engineering and Technology	5600	7700	X
6	Aman Sharma	MREI1118	01/06/1997	Backlog	B.Tech. Civil	Sem 2	MRIIRS-Faculty of Engineering and Technology	3500	3500	X
7	Ajay Singh Saini	MREI1130	04/06/1996	Backlog	B.Tech. Civil	Sem 2	MRIIRS-Faculty of Engineering and Technology	16100	16100	X
8	Tongbram Pukningkhomba	MREI1070	28/03/1997	Backlog	B.Tech. Civil	Sem 2	MRIIRS-Faculty of Engineering and Technology	7000	7000	X
9	Anshul	MREI1153	-	Backlog	B.Tech. Civil	Sem 2	MRIIRS-Faculty of Engineering and Technology	5600	5600	X
10	Thingujam Rahul	MREI1138	-	Backlog	B.Tech. Civil	Sem 2	MRIIRS-Faculty of Engineering and Technology	9100	9100	X
11	Gunit Verma	MREI2441	26/02/1998	Backlog	B.Tech. CSE	Sem 2	MRIIRS-Faculty of Engineering and Technology	7700	7700	X
12	Md Ishtiyaque Alam	MREI2042	10/08/1994	Backlog	B.Tech. CSE	Sem 2	MRIIRS-Faculty of Engineering and Technology	7700	7700	X
13	Shazi Zaman	MREI2414	28/12/1997	Backlog	B.Tech. CSE	Sem 2	MRIIRS-Faculty of Engineering and Technology	6300	6300	X

Figure 6.8: Generated Cut-list (Course Wise)

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6.3 SUBMISSION OF END SEMESTER EXAMINATION MARKS BY FACULTY MEMBERS

Faculty members submit the end semester examination marks of their respective courses on EMS. The procedure of uploading of marks is explained with the help of following screenshots

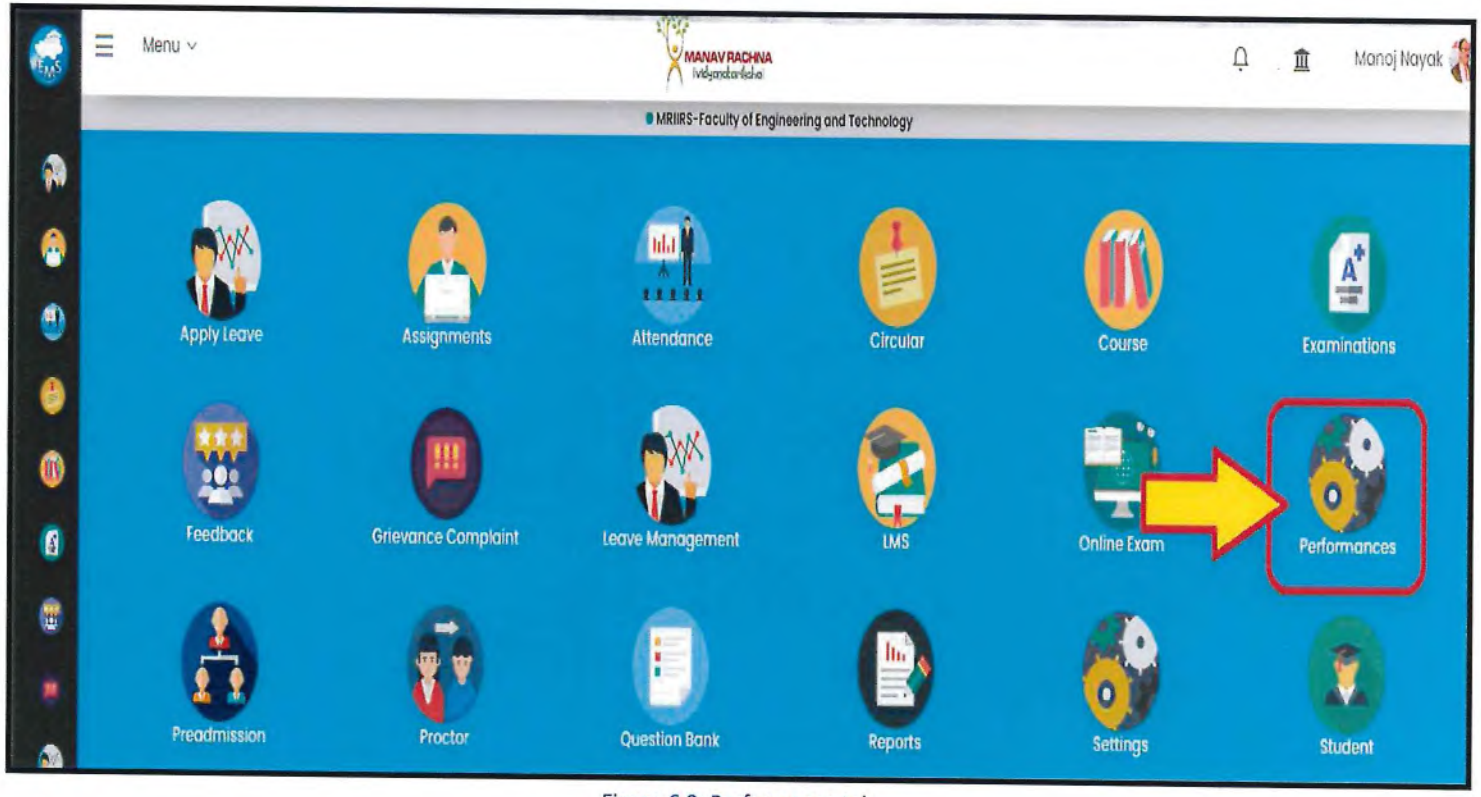

Figure 6.9: Performance tab

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On marks uploading screen, faculty can upload marks in the excel sheet by filling all filters as shown in the below image.

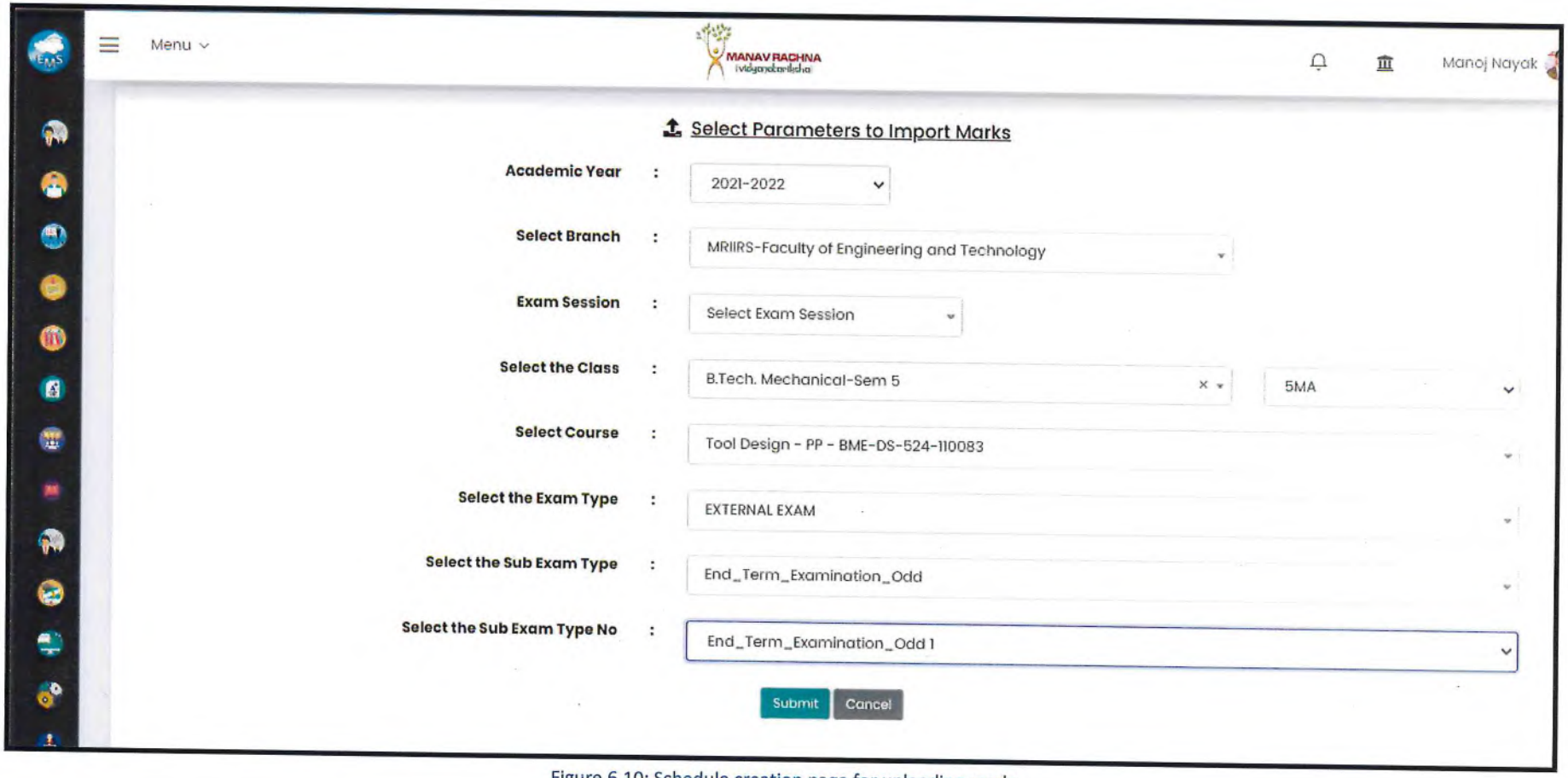

Figure 6.10: Schedule creation page for uploading marks

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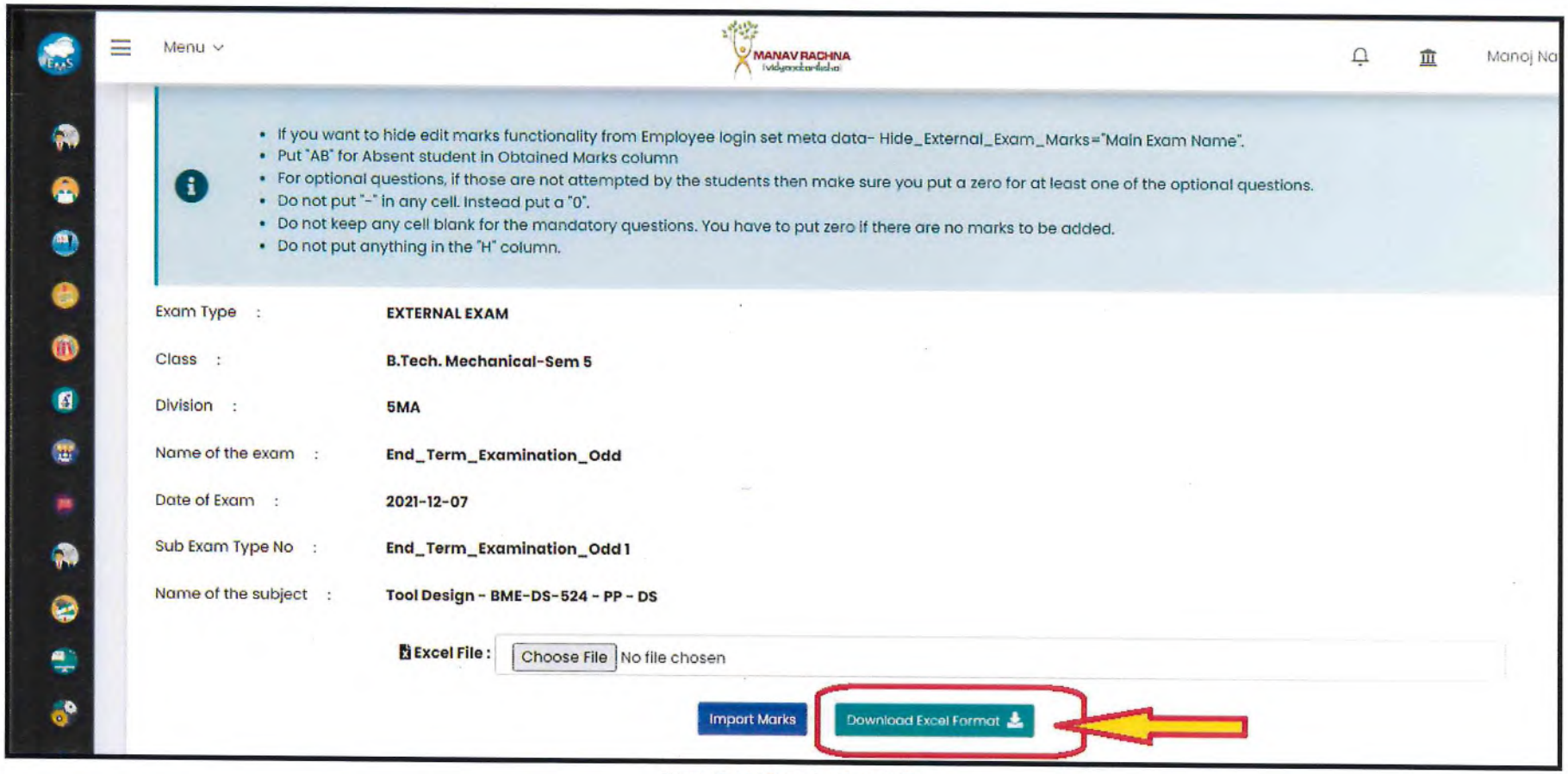

Figure 6.11: Download excel file

After downloading excel sheet, faculty members upload the filled excel sheet for uploading end semester marks as shown below.

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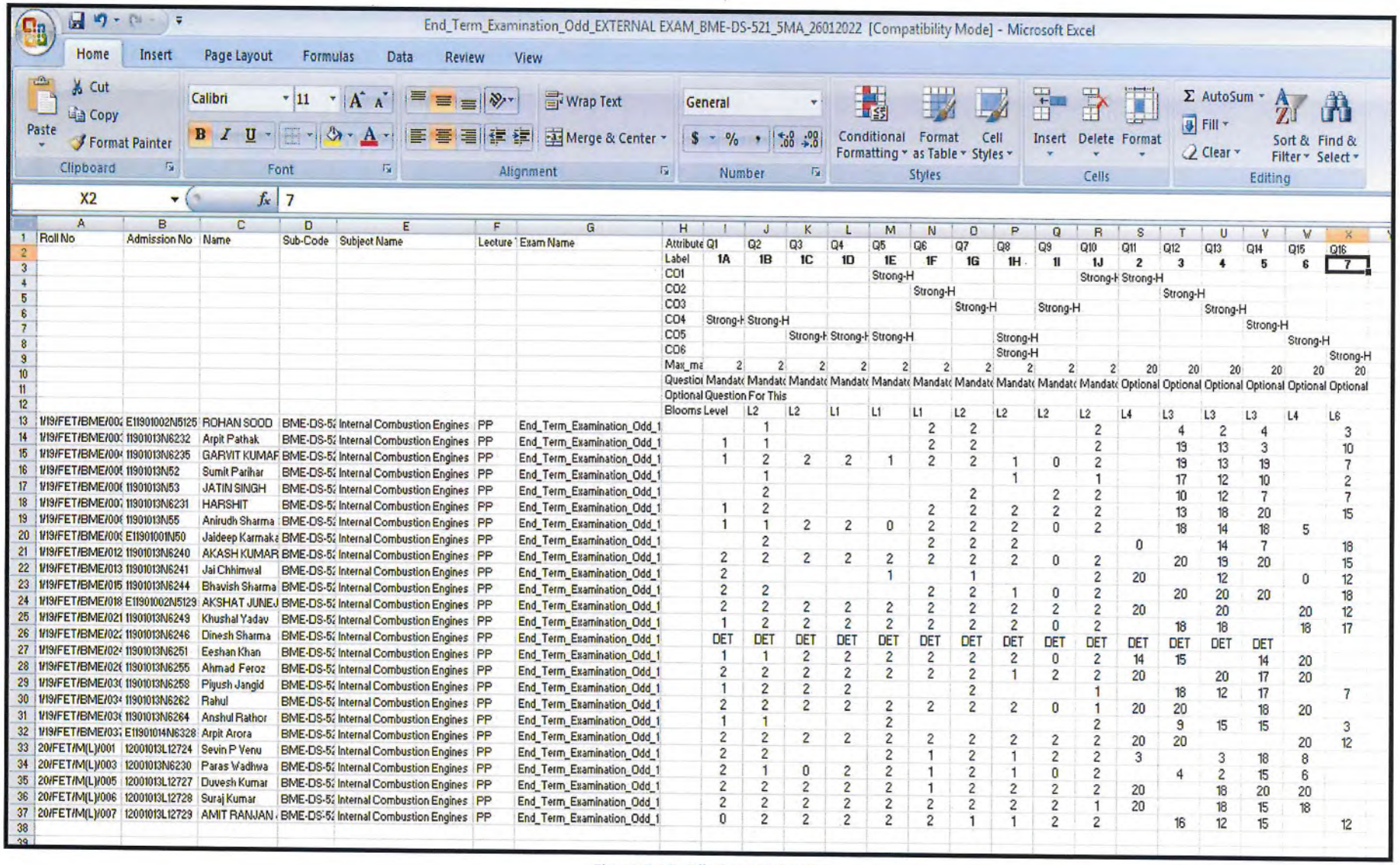

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X
1	Roll No	Admission No	Name	Sub-Code	Subject Name	Lecture	Exam Name	Attribute	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16
2								Label	1A	1B	1C	1D	1E	1F	1G	1H	1I	1J	2	3	4	5	6	7
3								CO1					Strong-H					Strong-H	Strong-H					
4								CO2						Strong-H						Strong-H				
5								CO3							Strong-H		Strong-H				Strong-H			
6								CO4	Strong-H	Strong-H												Strong-H		
7								CO5			Strong-H	Strong-H	Strong-H			Strong-H							Strong-H	
8								CO6								Strong-H								Strong-H
9								Max_ma	2	2	2	2	2	2	2	2	2	2	20	20	20	20	20	20
10								Questio	Mandat	Mandat	Mandat	Mandat	Mandat	Mandat	Mandat	Mandat	Mandat	Mandat	Optional	Optional	Optional	Optional	Optional	Optional
11								Optional	Question	For This														
12								Blooms	Level	L2	L2	L1	L1	L1	L2	L2	L2	L2	L4	L3	L3	L3	L4	L6
13	1/19/FET/BME/002	E11901002N5125	ROHAN SOOD	BME-DS-52	Internal Combustion Engines	PP	End_Term_Examination_Odd_1			1				2	2			2		4	2	4		3
14	1/19/FET/BME/003	11901013N6232	Arpit Pathak	BME-DS-52	Internal Combustion Engines	PP	End_Term_Examination_Odd_1		1	1				2	2			2		19	13	3		10
15	1/19/FET/BME/004	11901013N6235	GARVIT KUMAF	BME-DS-52	Internal Combustion Engines	PP	End_Term_Examination_Odd_1		1	2	2	2	1	2	2	1	0	2		19	13	19		7
16	1/19/FET/BME/005	11901013N52	Sumit Parihar	BME-DS-52	Internal Combustion Engines	PP	End_Term_Examination_Odd_1			1						1		1		17	12	10		2
17	1/19/FET/BME/006	11901013N53	JATIN SINGH	BME-DS-52	Internal Combustion Engines	PP	End_Term_Examination_Odd_1			2					2		2	2		10	12	7		7
18	1/19/FET/BME/007	11901013N6231	HARSHIT	BME-DS-52	Internal Combustion Engines	PP	End_Term_Examination_Odd_1		1	2				2	2	2	2	2		13	18	20		15
19	1/19/FET/BME/008	11901013N55	Anirudh Sharma	BME-DS-52	Internal Combustion Engines	PP	End_Term_Examination_Odd_1		1	1	2	2	0	2	2	2	0	2		18	14	18	5	
20	1/19/FET/BME/009	E11901001N50	Jaideep Karmaka	BME-DS-52	Internal Combustion Engines	PP	End_Term_Examination_Odd_1			2				2	2	2			0		14	7		18
21	1/19/FET/BME/012	11901013N6240	AKASH KUMAR	BME-DS-52	Internal Combustion Engines	PP	End_Term_Examination_Odd_1		2	2	2	2	2	2	2	2	0	2		20	19	20		15
22	1/19/FET/BME/013	11901013N6241	Jai Chhimwal	BME-DS-52	Internal Combustion Engines	PP	End_Term_Examination_Odd_1		2				1		1			2	20		12		0	12
23	1/19/FET/BME/015	11901013N6244	Bhavish Sharma	BME-DS-52	Internal Combustion Engines	PP	End_Term_Examination_Odd_1		2	2				2	2	1	0	2		20	20	20		18
24	1/19/FET/BME/018	E11901002N5129	AKSHAT JUNEJ	BME-DS-52	Internal Combustion Engines	PP	End_Term_Examination_Odd_1		2	2	2	2	2	2	2	2	2	2	20		20		20	12
25	1/19/FET/BME/021	11901013N6249	Khushal Yadav	BME-DS-52	Internal Combustion Engines	PP	End_Term_Examination_Odd_1		1	2	2	2	2	2	2	2	0	2		18	18		18	17
26	1/19/FET/BME/022	11901013N6246	Dinesh Sharma	BME-DS-52	Internal Combustion Engines	PP	End_Term_Examination_Odd_1		DET	DET	DET	DET	DET	DET	DET	DET	DET	DET	DET	DET	DET	DET		
27	1/19/FET/BME/024	11901013N6251	Eeshan Khan	BME-DS-52	Internal Combustion Engines	PP	End_Term_Examination_Odd_1		1	1	2	2	2	2	2	2	0	2	14	15		14	20	
28	1/19/FET/BME/026	11901013N6255	Ahmad Feroz	BME-DS-52	Internal Combustion Engines	PP	End_Term_Examination_Odd_1		2	2	2	2	2	2	2	1	2	2	20		20	17	20	
29	1/19/FET/BME/030	11901013N6258	Piyush Jangid	BME-DS-52	Internal Combustion Engines	PP	End_Term_Examination_Odd_1		1	2	2	2			2			1		18	12	17		7
30	1/19/FET/BME/034	11901013N6262	Rahul	BME-DS-52	Internal Combustion Engines	PP	End_Term_Examination_Odd_1		2	2	2	2	2	2	2	2	0	1	20	20		18	20	
31	1/19/FET/BME/036	11901013N6264	Anshul Rathor	BME-DS-52	Internal Combustion Engines	PP	End_Term_Examination_Odd_1		1	1			2					2		9	15	15		3
32	1/19/FET/BME/037	E11901014N6328	Arpit Arora	BME-DS-52	Internal Combustion Engines	PP	End_Term_Examination_Odd_1		2	2	2	2	2	2	2	2	2	2	20	20			20	12
33	20/FET/M(L)/001	12001013L12724	Sevin P Venu	BME-DS-52	Internal Combustion Engines	PP	End_Term_Examination_Odd_1		2	2			2	1	2	1	2	2	3		3	18	8	
34	20/FET/M(L)/003	12001013N6230	Paras Wadhwa	BME-DS-52	Internal Combustion Engines	PP	End_Term_Examination_Odd_1		2	1	0	2	2	1	2	1	0	2		4	2	15	6	
35	20/FET/M(L)/005	12001013L12727	Duvesh Kumar	BME-DS-52	Internal Combustion Engines	PP	End_Term_Examination_Odd_1		2	2	2	2	2	1	2	2	2	2	20		18	20	20	
36	20/FET/M(L)/006	12001013L12728	Suraj Kumar	BME-DS-52	Internal Combustion Engines	PP	End_Term_Examination_Odd_1		2	2	2	2	2	2	2	2	2	1	20		18	15	18	
37	20/FET/M(L)/007	12001013L12729	AMIT RANJAN	BME-DS-52	Internal Combustion Engines	PP	End_Term_Examination_Odd_1		0	2	2	2	2	2	1	1	2	2		16	12	15		12
38																								

Figure 6.12: Filled excel sheet

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6.4 UPLOADING OF ANSWER SCRIPTS AND CONDUCT OF EXAMINATION OPEN HOUSE FOR ONSCREEN VERIFICATION OF EVALUATED ANSWER SCRIPTS BY STUDENTS

For conducting the examination open house to enable students to verify their evaluated answer scripts, the answer scripts are uploaded on EMS.

6.4.1: Process to be followed by faculty to upload answer scripts

STEP 1. Open Performance Menu

Once marks are uploaded for the required session of MAIN END SEMESTER EXAM, course coordinators again have to go to PERFORMANCE MENU.

Figure 6.13: Performance tab

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STEP 2. Uploading of evaluated sheets:

Select the option "EXAMINATION ANSWER SHEETS UPLOAD" that is present in drop-down to upload the PDF file having marks entered against every question.

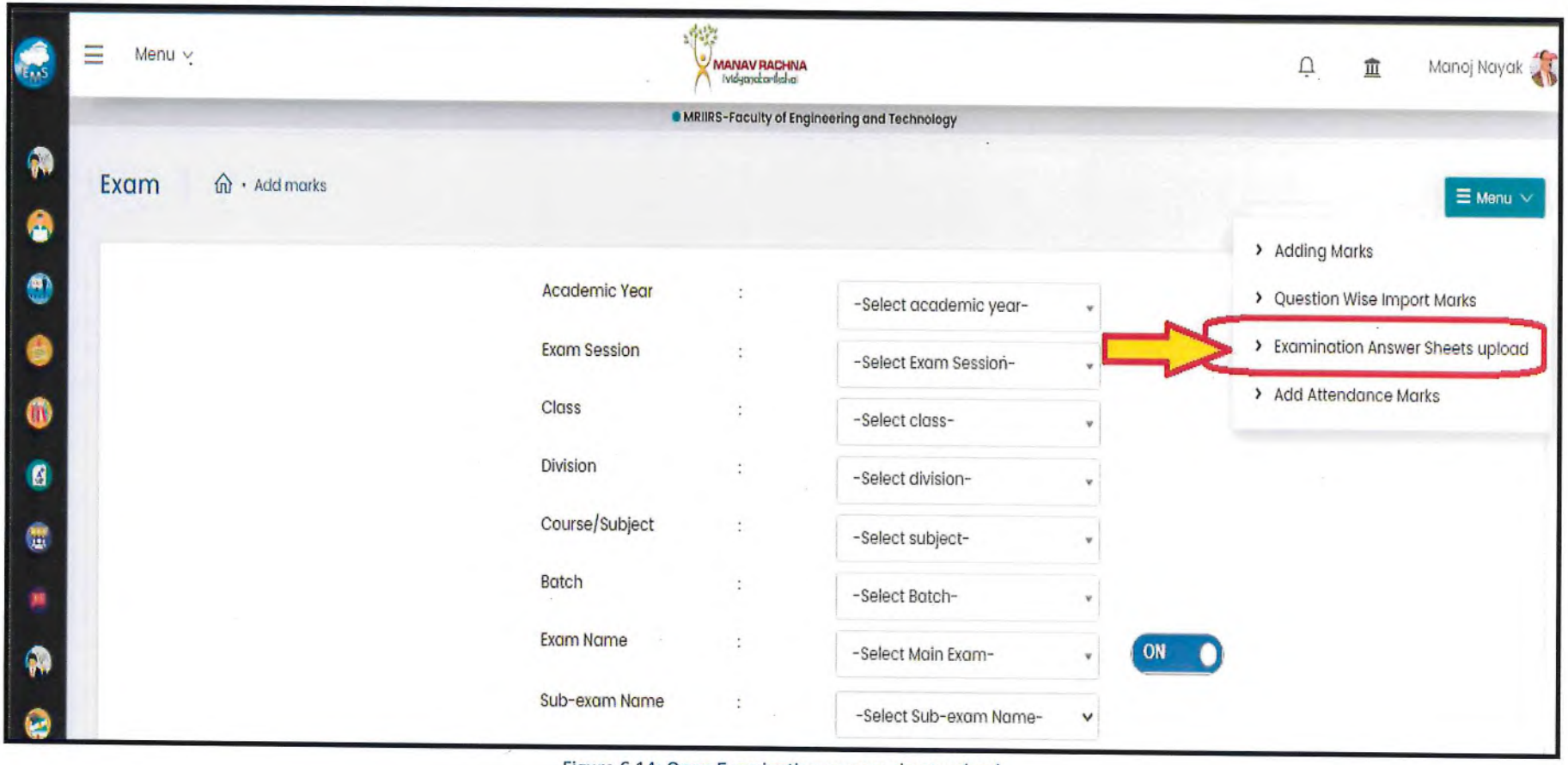

Figure 6.14: Open Examination answer sheet upload

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STEP 3. "ANSWER SHEET UPLOAD" WINDOW:

A new window opens up, where; course coordinator can view all Scheduled Examination List (Courses allotted to faculty member). Click on "VIEW" corresponding to the course for which answer sheets are to be uploaded.

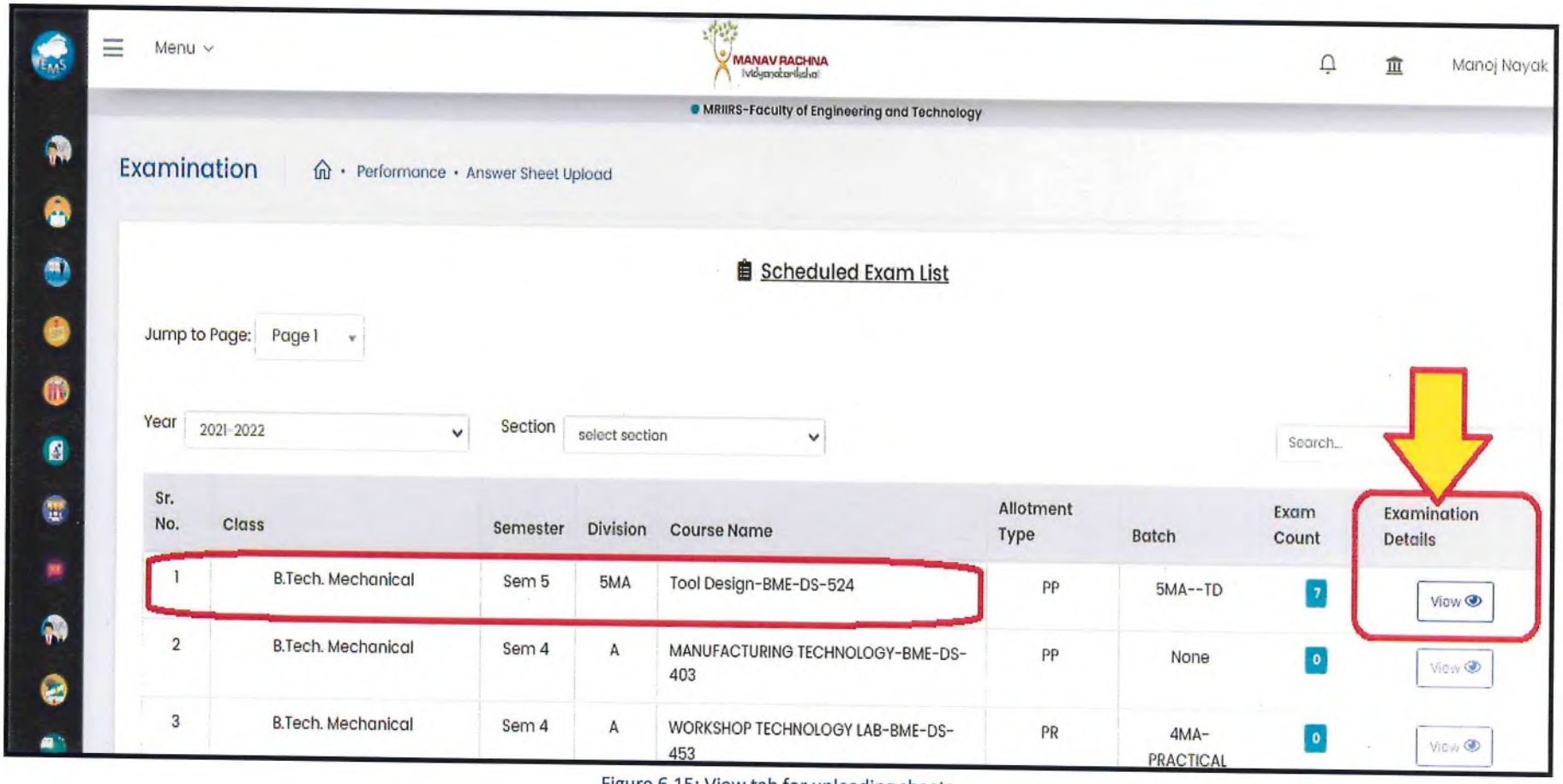

Figure 6.15: View tab for uploading sheets

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Click on the "Upload" icon that is present alongside Exam schedule to upload sheets for End Semester Exam.

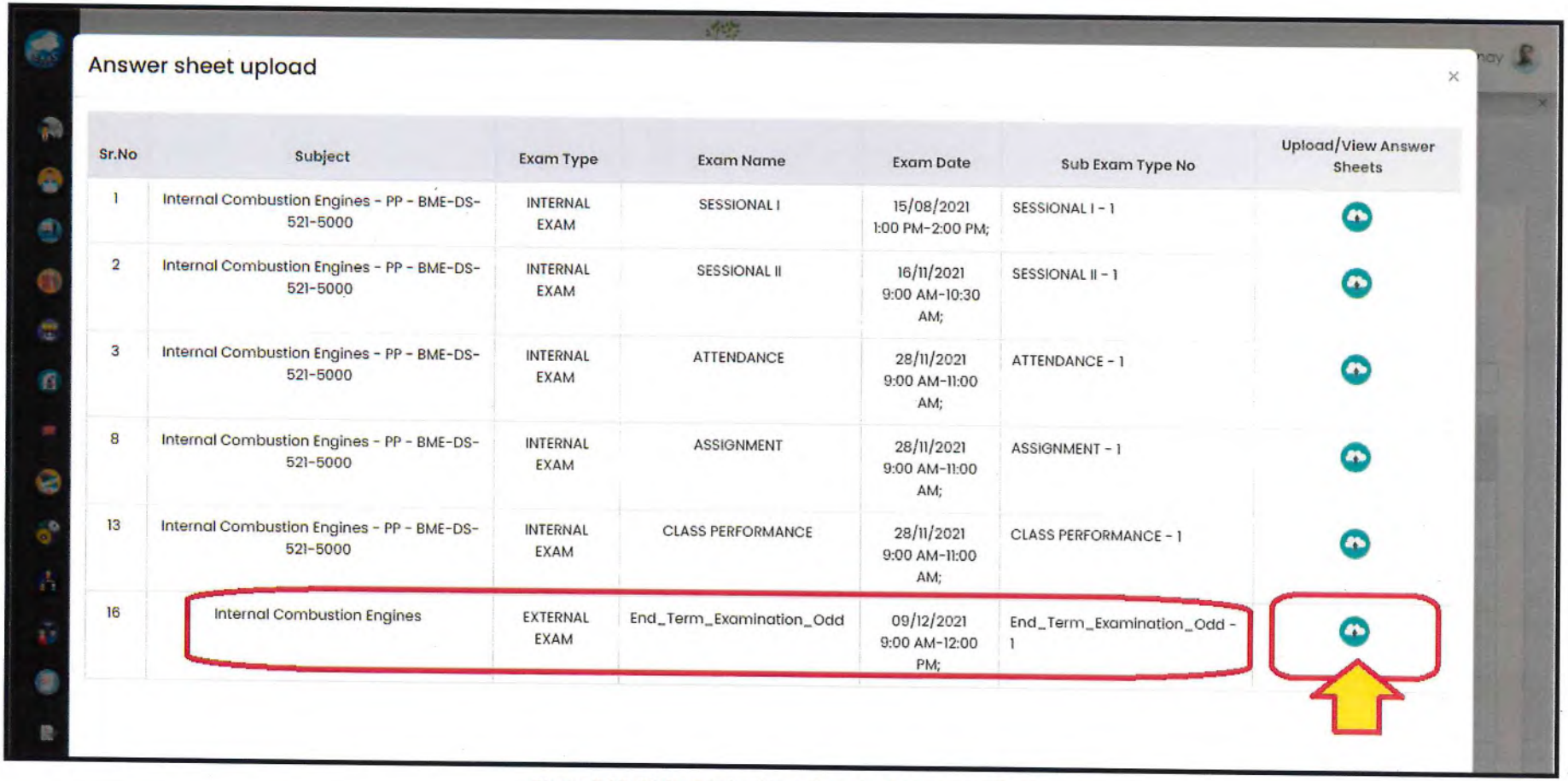

Figure 6.16: Click on upload icon for uploading answer sheet

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STEP 4. ANSWER SHEET UPLOADING:

A small window displaying the list of students for whom marks are to be uploaded will appear on screen with option from where evaluated sheets of student is to be uploaded.

- Click on "Select file" and browse to the location where required file is stored and then click on "Upload". System will re-confirm the action by asking "Sure to upload". Proceed by clicking on "Yes, Upload".
- Course coordinator can select other file while the previous one is uploading. System allows multiple uploading on same window.

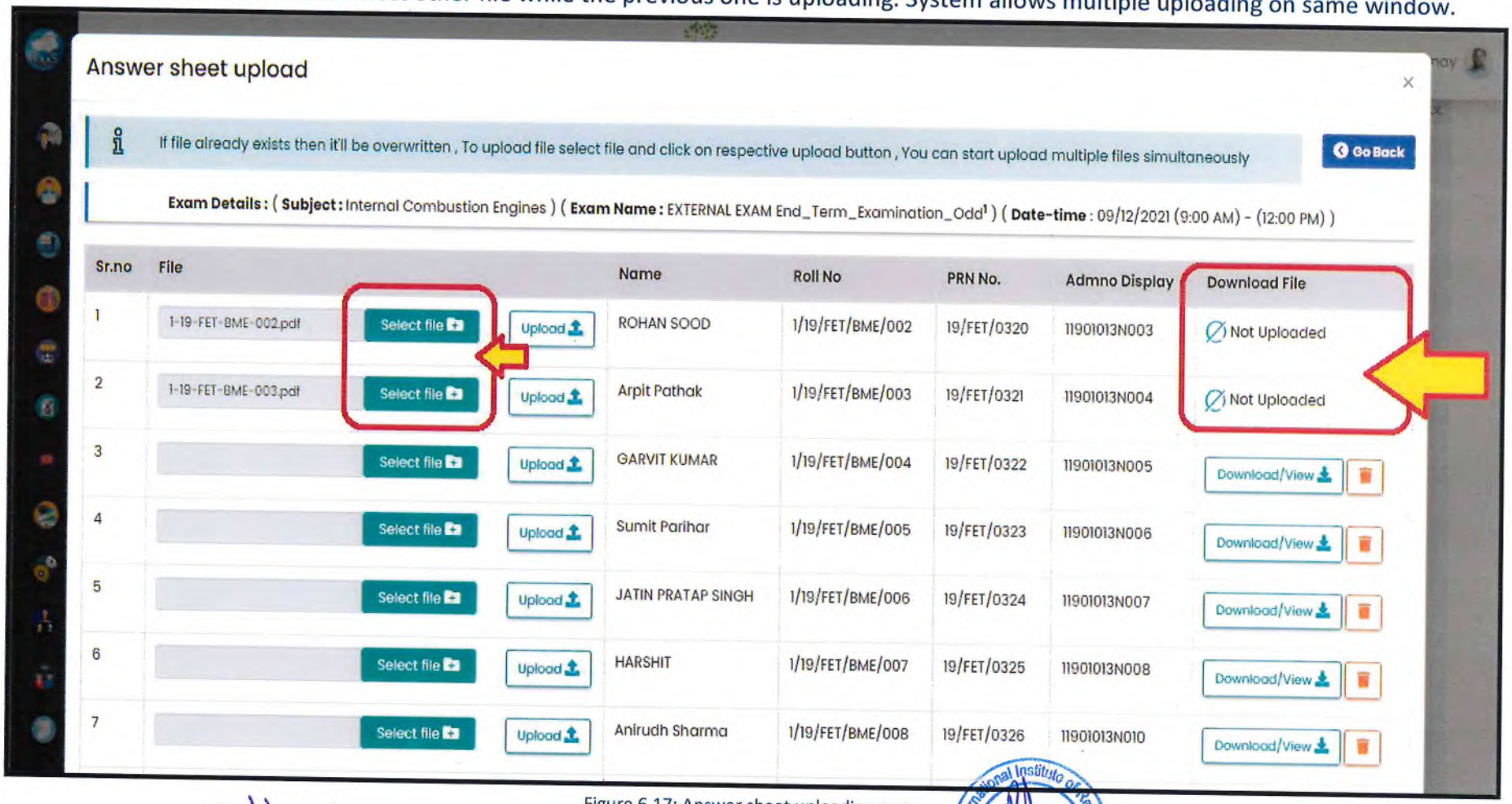

Figure 6.17: Answer sheet uploading page

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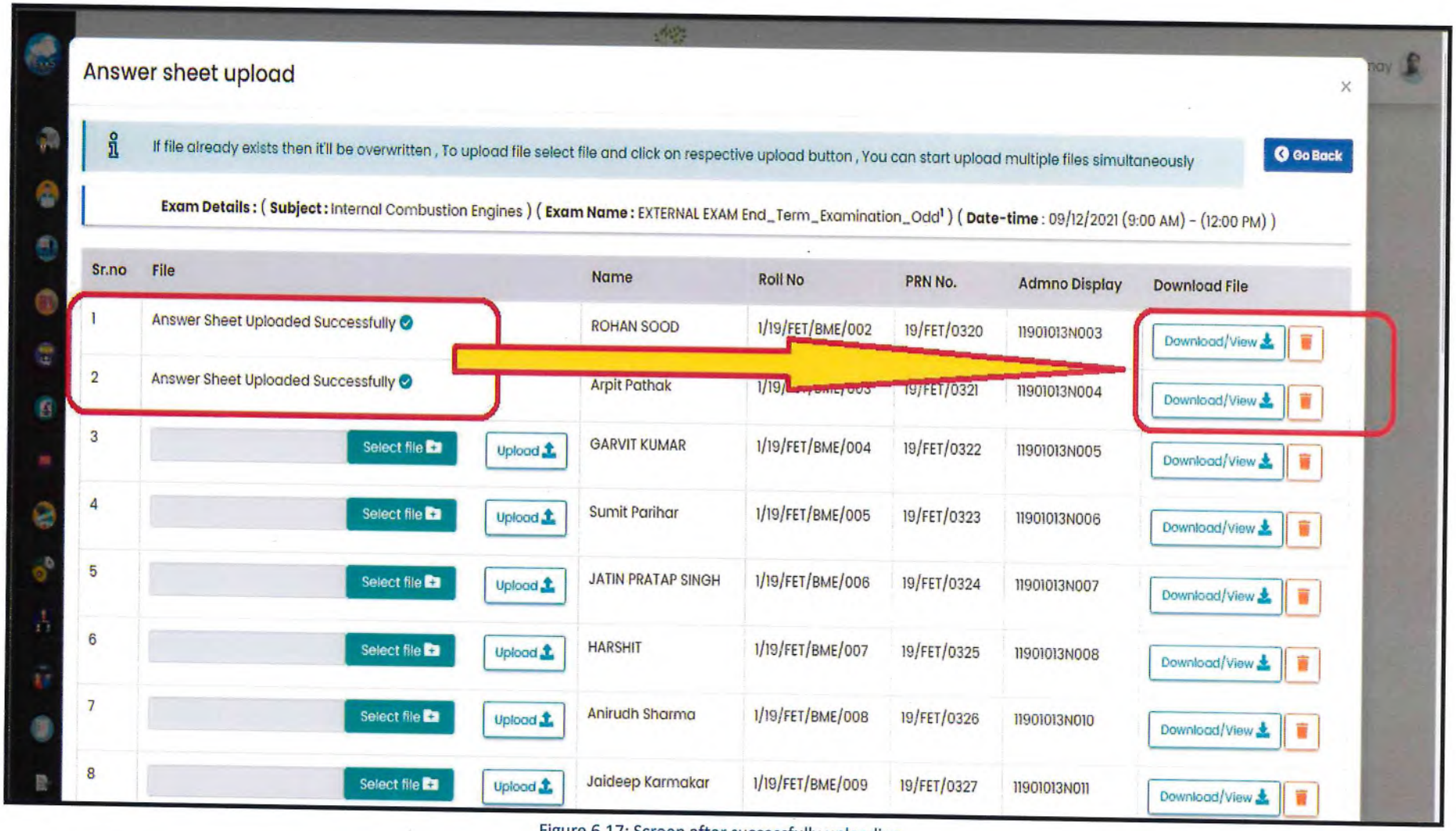

Figure 6.17: Screen after successfully uploading

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6.4.2: Process to be followed by students to view their checked answer sheets

After the uploading of evaluated answer sheet on EMS, students can view answer sheet and raise their request for correction on EMS. Student can verify the marks and raise their request for totalling error and unchecked answers.

A. Student can login on their account and open performance page as shown below

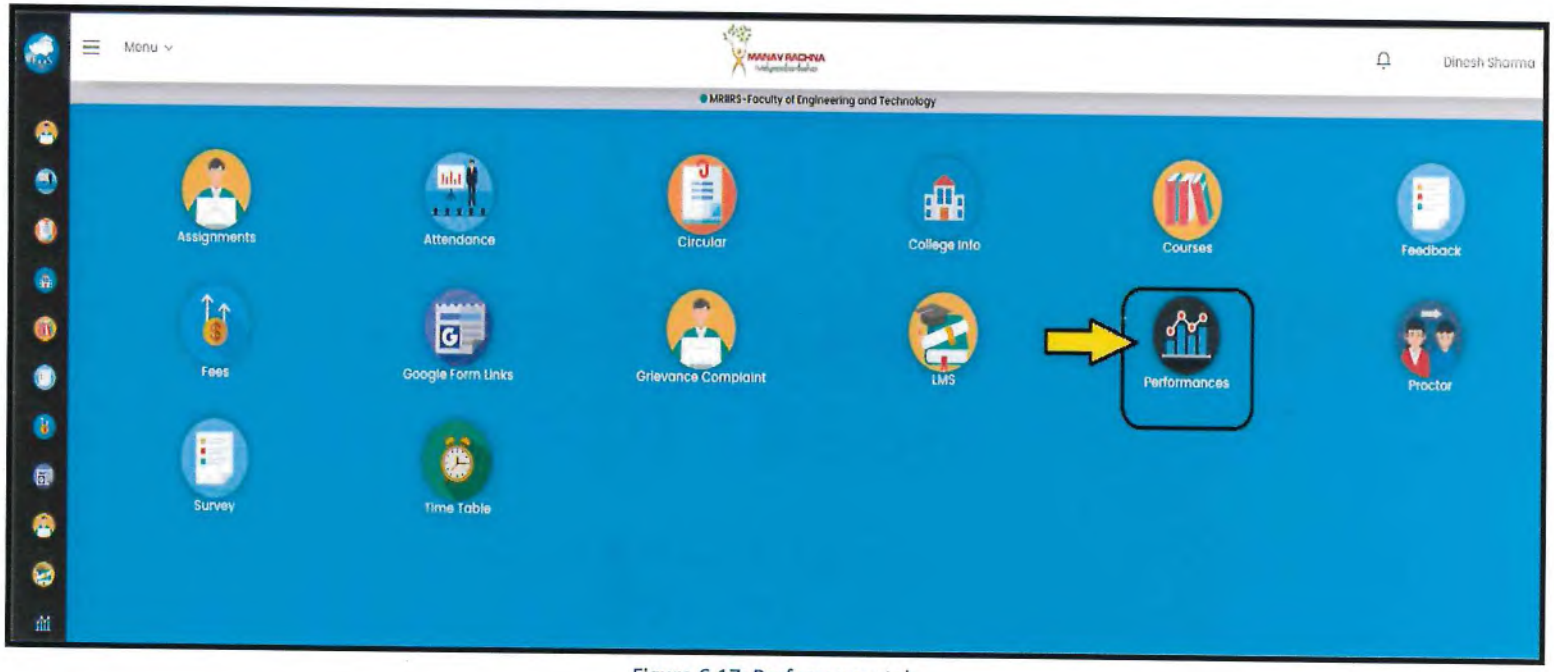

Figure 6.17: Performance tab

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B. Student can fill all required filter as shown in the image

Figure 6.17: Performance tab

C. Student can click on the icon for answer sheet to verify the marks in the sheet as shown in the below image:-

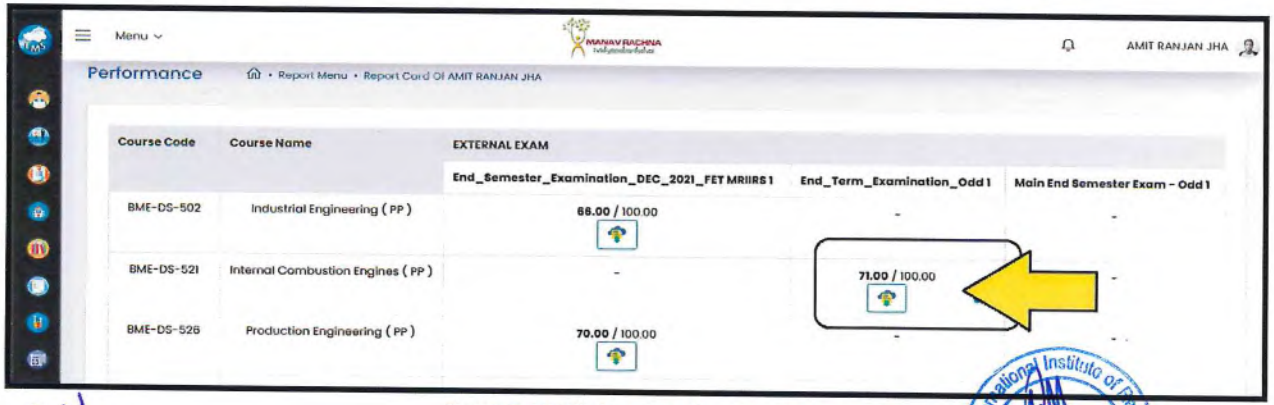

Figure 6.18: Click on icon for course answer sheet

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D. Answer sheet will open online and student can verify the pages one by one by click on next page as shown in the image.

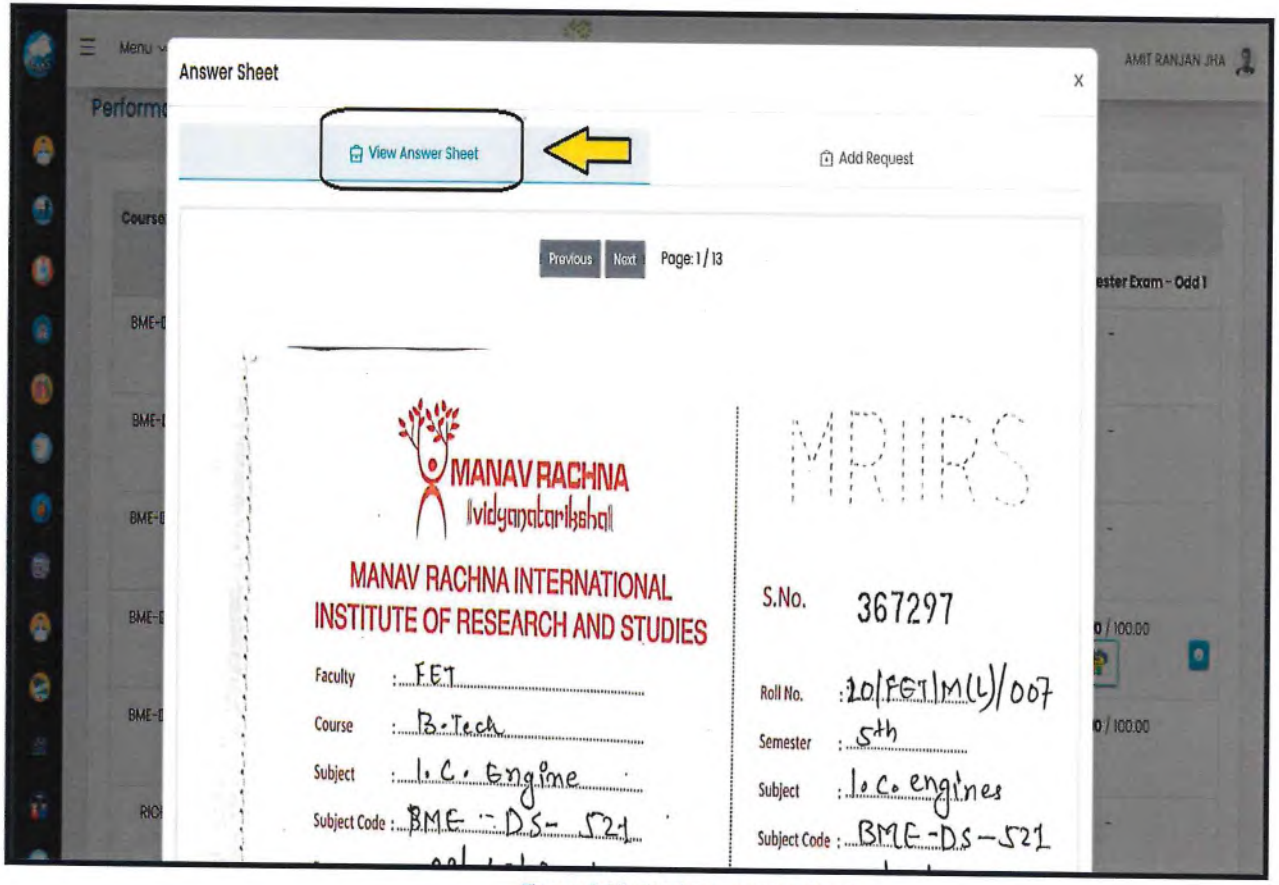

Figure 6.18: Student answer sheet

E. Student can raise concerns or request by click on the add request as shown on image:-

- **Examples are given below for the request format, student can raise concerns in the same format**

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- Totalling error request on the left side of the page and in the image concern was raised by student is shown
- On the right side of the image, student can raise the concern for the unchecked answer and example is given below to show how can student raise his/her request
- At the end click on submit to raise request.

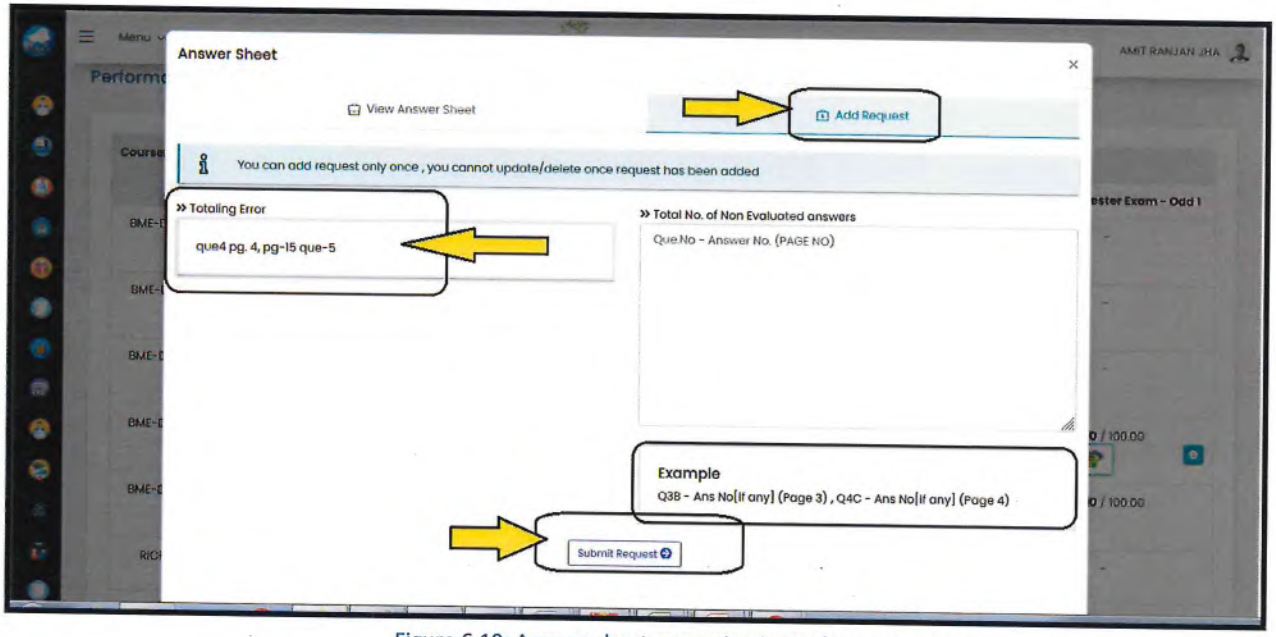

Figure 6.19: Answer sheet correction in marks request page

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6.4.3 Process followed by CoE to view answer sheet and marks correction on EMS:-

A. CoE can open the report for checking the raised issue and marks correction

Figure 6.20: Report

B. "Open the Examination Open House Report" for further action as shown in the image

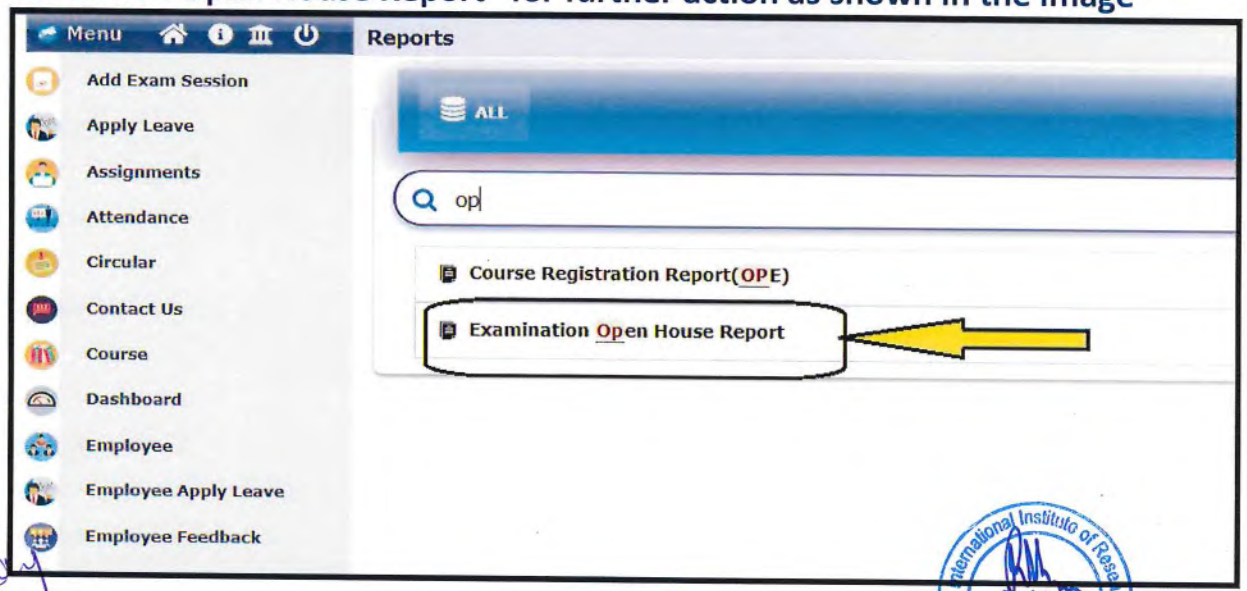

Figure 6.21: Examination Open House Report

C. Fill all the filter as per the program or multiple selection is also available to check the request raised by the students from different semesters:-

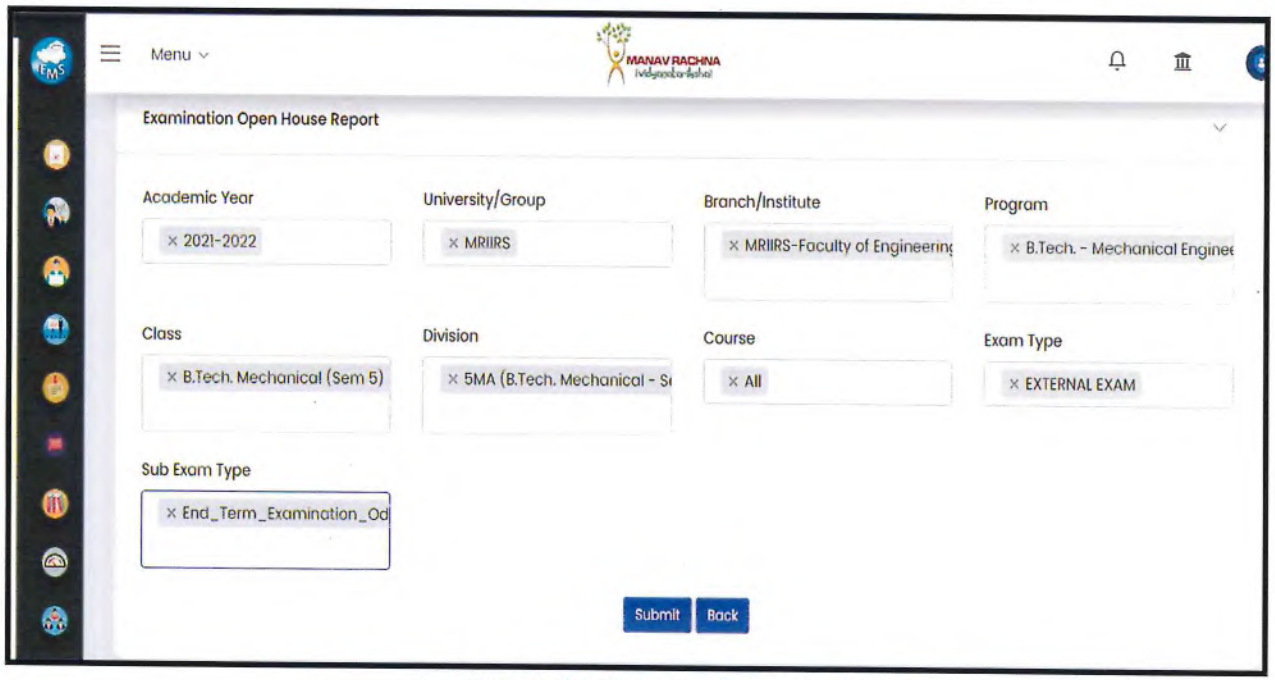

Figure 6.22: Examination Open House Report

D. CoE can export the file as shown in the image:-

- **List of issue raised open at CoE level**
- **In the report, details are provided regarding questions and page no. on which concern was raised by the student.**
- **CoE have rights to open the answer sheet of concerned student to verify the request**
- **CoE also have rights to update the marks by clicking on show marks as shown in the image.**

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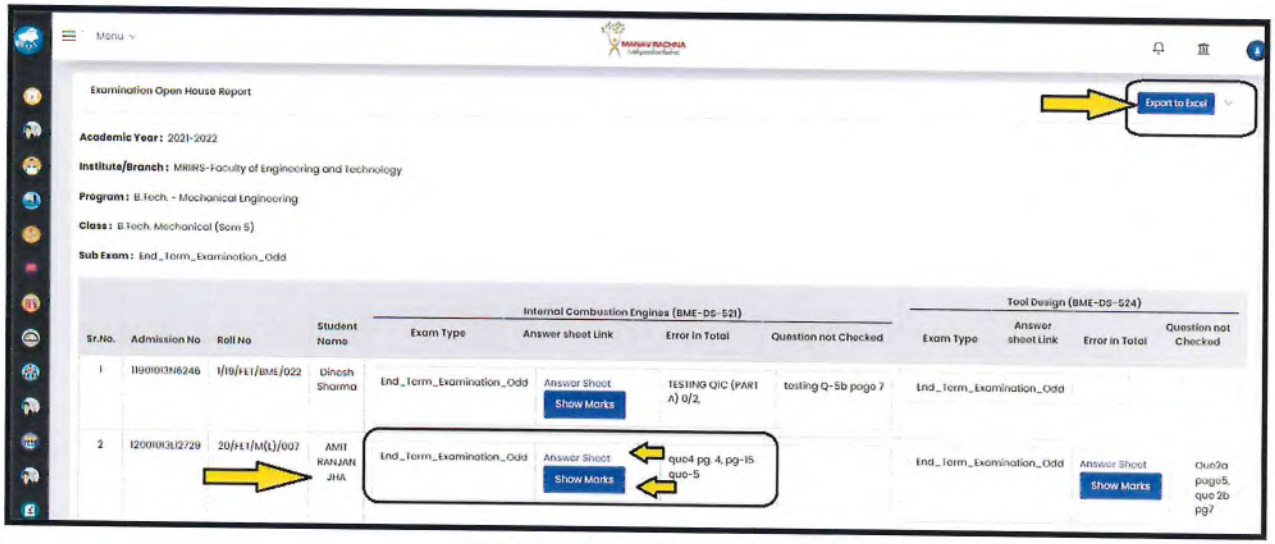

Figure 6.23: Report for correction at CoE level

E. Answer sheet of the student at CoE level for verifying the request:-

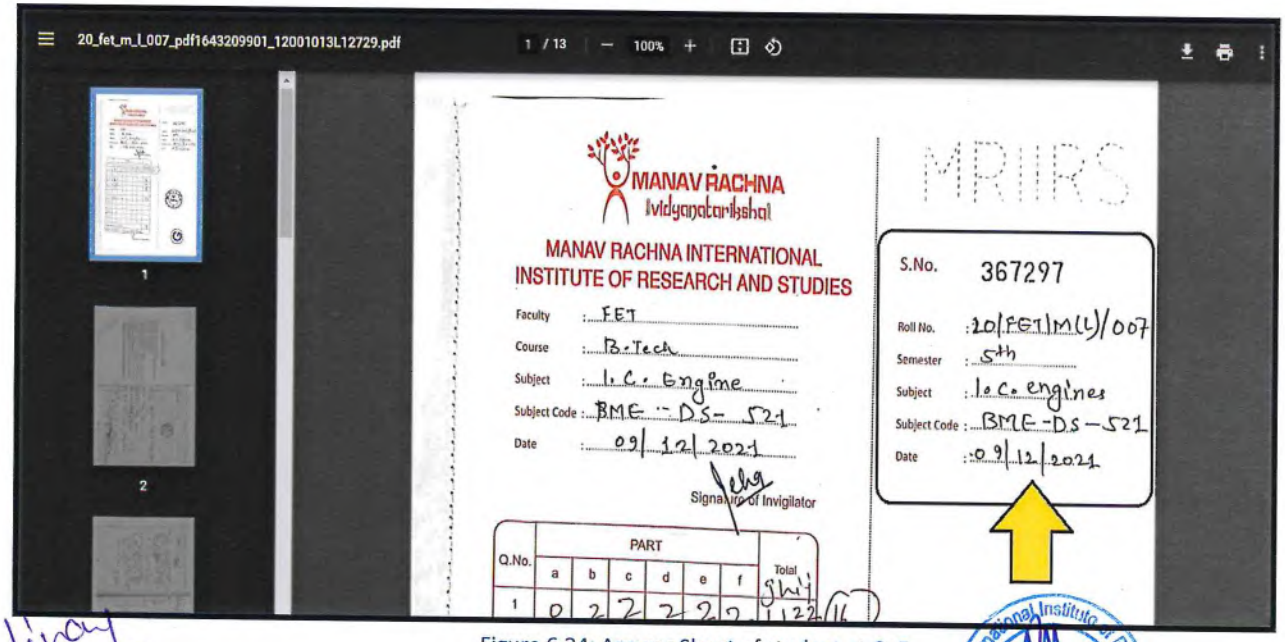

Figure 6.24: Answer Sheet of student at CoE

F. If student has raised the concern regarding a particular question, CoE can open the sheet and verify the marks at his/her level

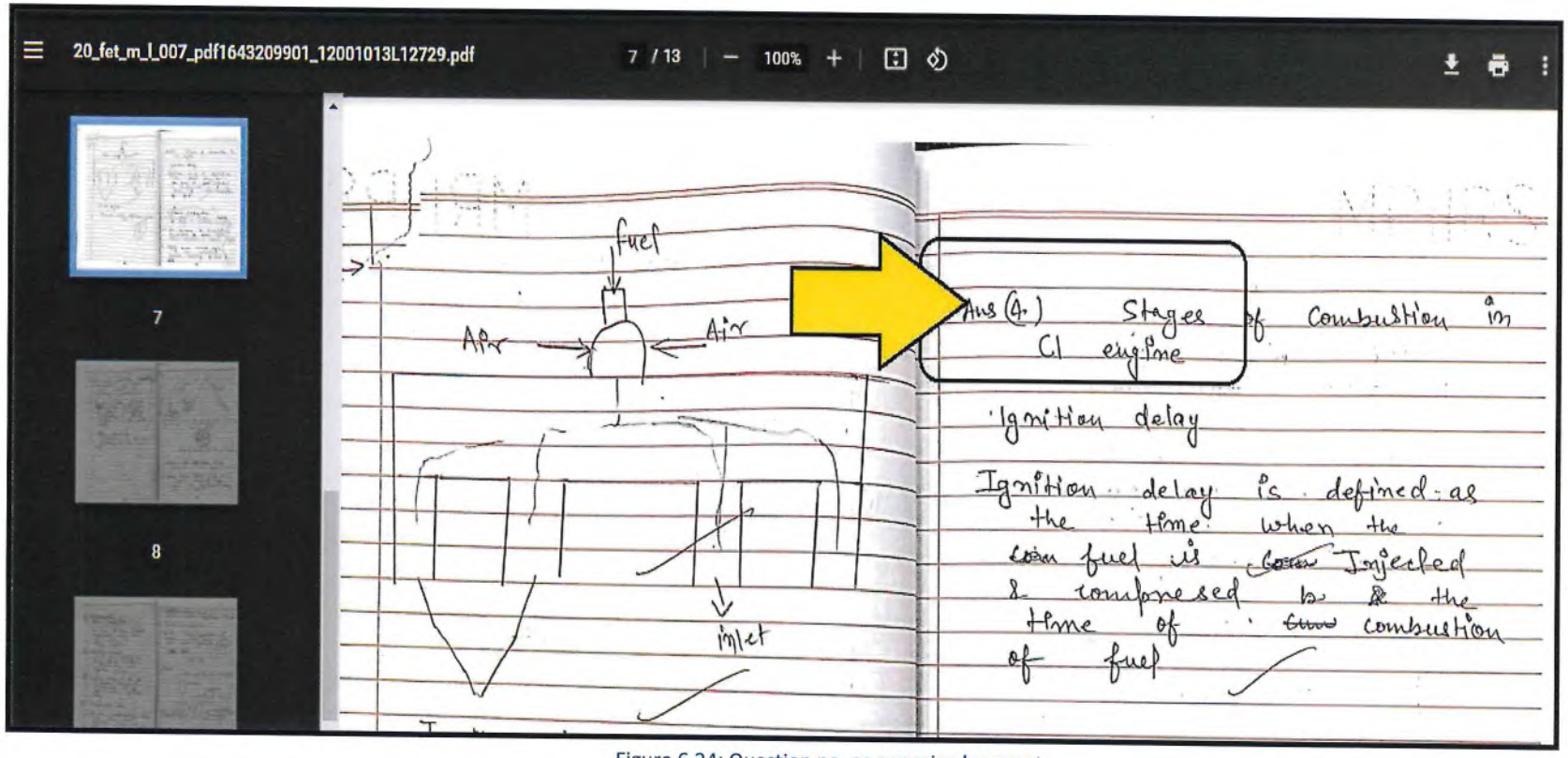

Figure 6.24: Question no. as per raised request

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G. CoE can edit the marks on the same screen by clicking on "Show Marks" button:-

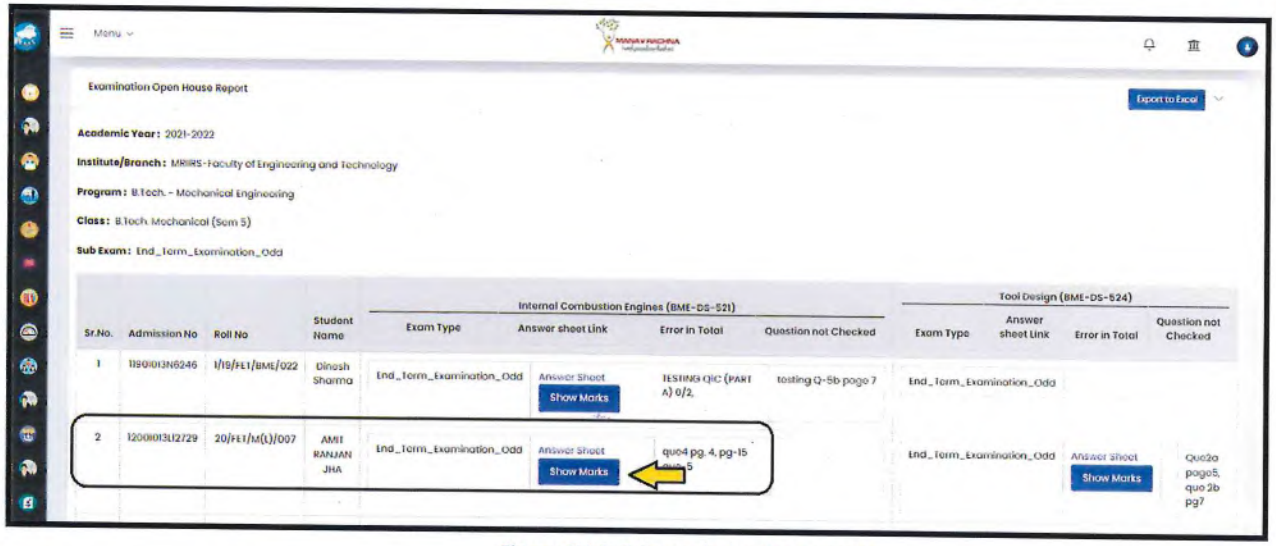

Figure 6.25: Edit marks by show marks

H. CoE can update marks on the screen as shown below which will be updated automatically.

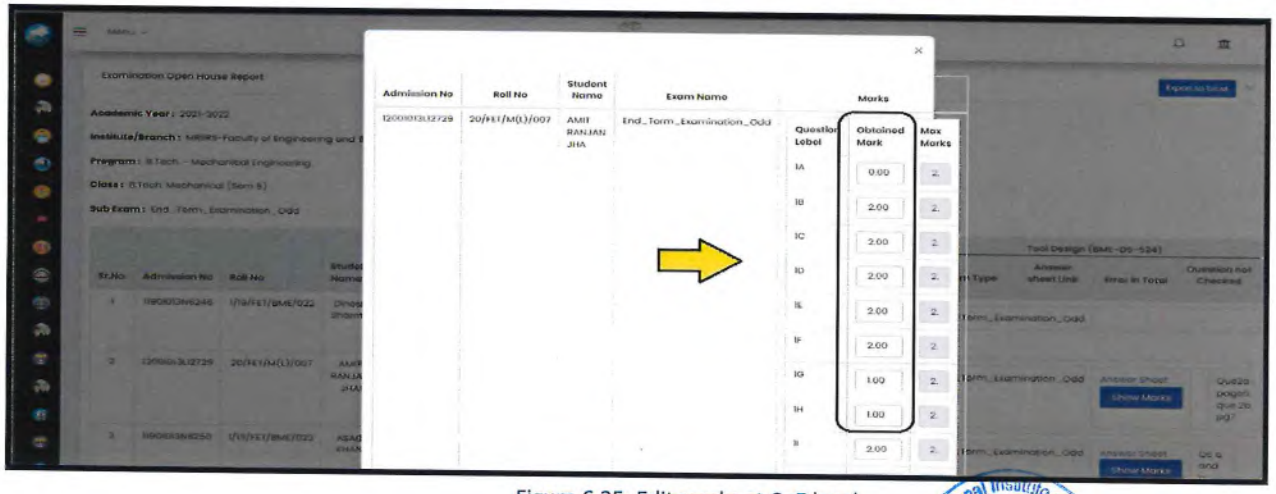

Figure 6.25: Edit marks at CoE level

6.5 **Generation of Grade Card**

CoE can generate the Grade Card of the students using examination tab at his/her EMS home screen

Figure 6.26: Click on Examination icon

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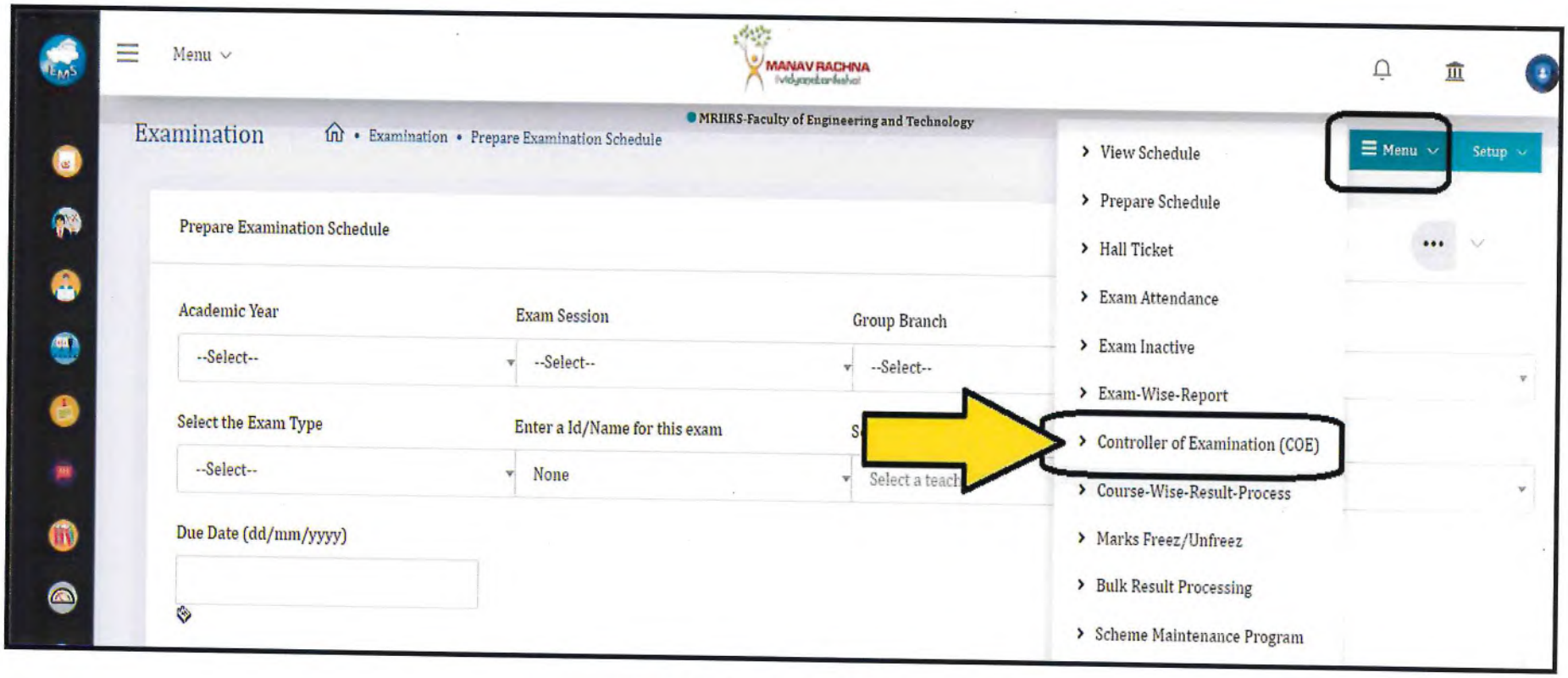

Figure 6.27: Select Controller of Examination from Menu

CoE has to fill all the parameters for generating the grade cards of the students

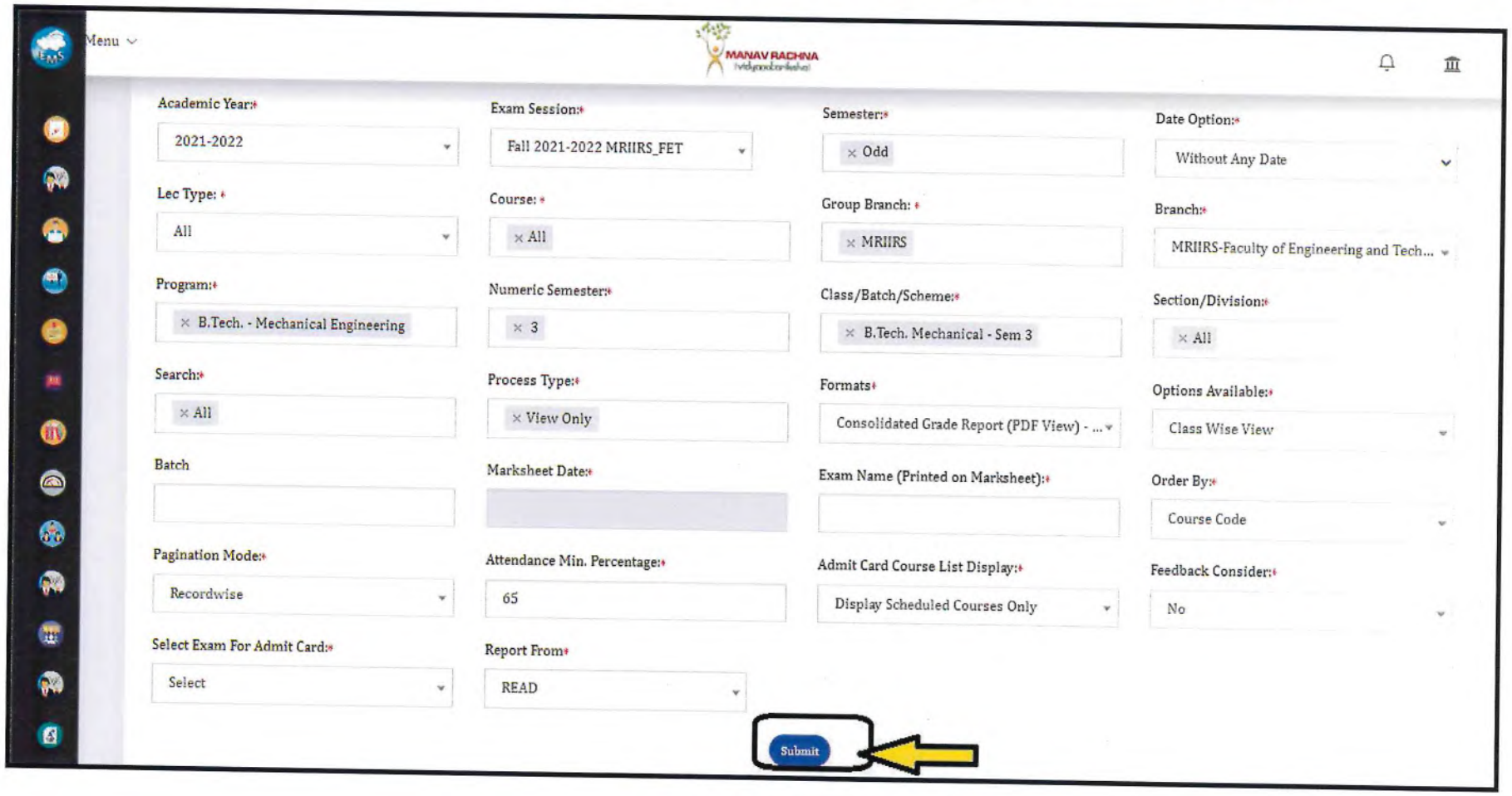

Figure 6.28: Parameters to be filled by CoE

CoE can select the students individually or in bulk to print the grade card

Pagination: (Please select one or multiple record)

× Record No. 1: 15

Print Selected 15 Marksheet PDF

Branch: MRIIRS-Faculty of Engineering and Technology
Department: Department of Mechanical Engineering
Class: B.Tech. Mechanical - Sem 3
Year: 2021-2022

Sr.	Student	Roll No.	Status	Total Subjects	Amount Need to Pay	Amount Paid	Remaining Amount	Consolidated Grade Report (PDF View)	Cyber Law & Ethics BHM-001-PP	Engineering Mechanics BME-DS-301-PP	Thermodynamics BME-DS-302-PP
1	Rahul Sharma	1/20/FET/BME/009	Regular	12	0	0	0	☑	Applied	Applied	Applied
2	Veluru Sai Dheeraj	1/20/FET/BME/011	Regular	12	0	0	0	☑	Applied	Applied	Applied
3	Yash .	1/20/FET/BME/012	Regular	12	0	0	0	☑	Applied	Applied	Applied
4	Gurpreet Singh	1/20/FET/BME/007	Regular	12	0	0	0	☑	Applied	Applied	Applied
5	Tushar Sharma	21/FET/M(L)/001	Regular	13	0	0	0	☑	Applied	Applied	Applied
6	Gaurav Singh	21/FET/M(L)/002	Regular	11	0	0	0	☑	Applied	Applied	Applied
7	Mukul	1/20/FET/BME/006	Inactive	2	0	0	0	☑	Applied	Applied	Applied
8	Vansh Gupta	1/20/FET/BME/014	Inactive	13	0	0	0	☑	Applied	Applied	
9	Riya Choudhary	1/20/FET/BME/013	Regular	12	0	0	0	☑	Applied	Applied	Applied
10	Rishi Raj Singh Rathor	1/20/FET/BME/003	Regular	13	0	0	0	☑	Applied	Applied	Applied
11	Himanshu Bhardwaj	1/20/FET/BME/010	Regular	13	0	0	0	☑	Applied	Applied	Applied
12	Kartik Parashar	1/20/FET/BME/004	Regular	12	0	0	0	☑	Applied	Applied	Applied
13	Gaurav Yadav	1/20/FET/BME/002	Regular	11	0	0	0	☑	Applied	Applied	Applied
14	Gaurav Singh	1/20/FET/BME/001	Regular	11	0	0	0	☑	Applied	Applied	Applied
15	Arshit Nanda	1/20/FET/BME/005	Regular	12	0	0	0	☑	Applied	Applied	Applied
						171				15	15

Figure 6.29: Consolidated Grade Report

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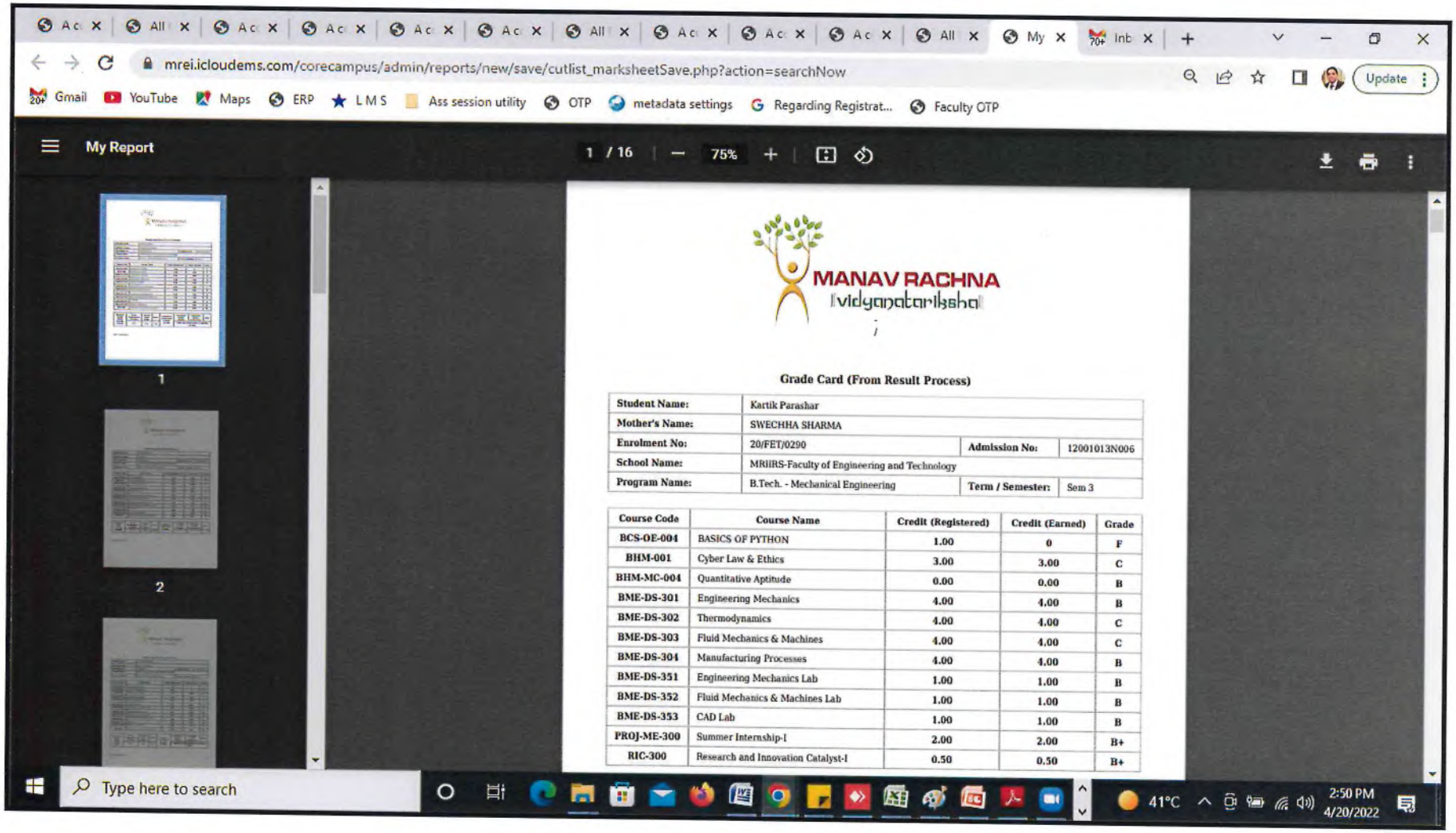

Figure 6.30: Sample Consolidated Grade Report

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7. Computation of Program Outcomes (POs) / Program Specific Outcomes PSOs) and Course Outcomes (COs) attainment

7.1. Introduction:

7.1.1 Assessment Tools for CO Attainment:

Both direct and indirect assessment tools shall be used for data collation. The weightage for direct and indirect metHoDs is fixed as 80% and 20%, respectively. Direct tools considered are cumulative continuous internal assessment metHoDs (Assignments, Sessional tests, Seminars, Practical's, Presentations, etc.) and end semester examinations. Indirect tools include a course exit survey. The process followed for course outcome attainment is depicted in Fig.7.1.

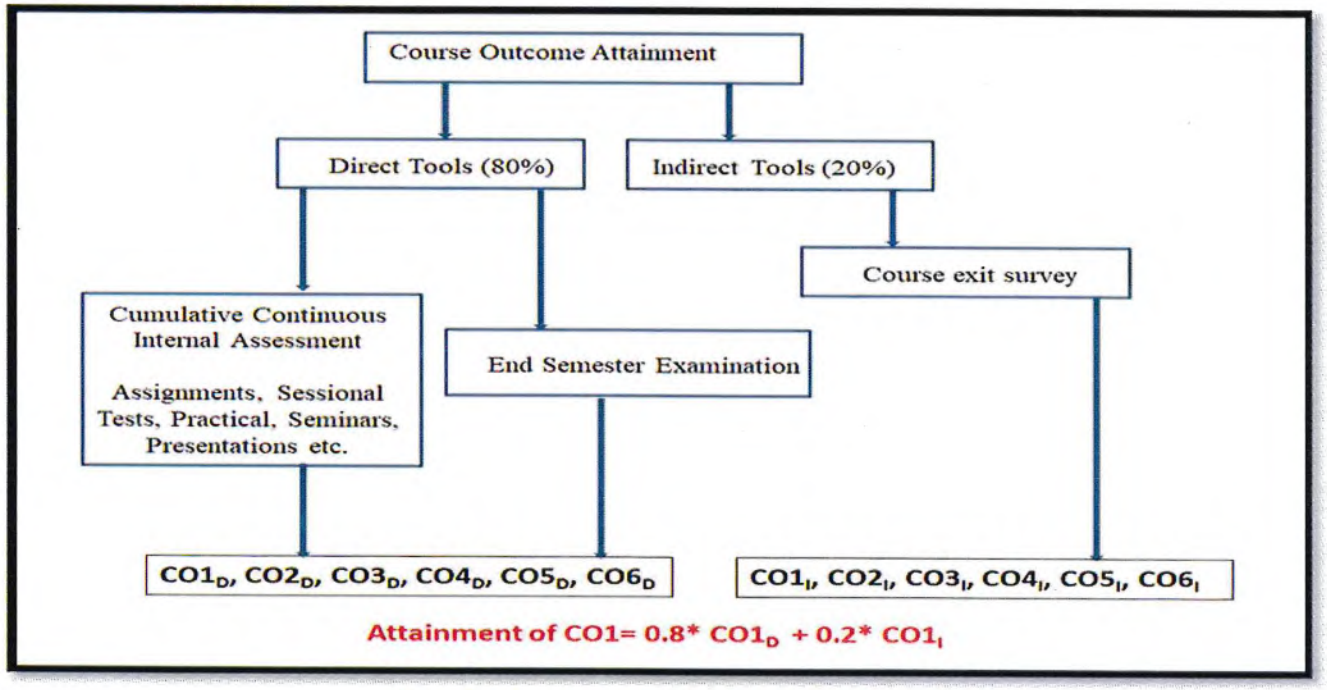

Figure 7.1: Assessment tools for Attainment of Course Outcomes

7.1.2 Tools for PO/PSO Attainment:

Both direct and indirect assessment tools shall be used for data collation. The weightage for direct and indirect metHoDs fixed has been fixed as 80% and 20%, respectively. Direct tools include course outcome attainment levels/percentage. Indirect tools include 50% weightage for program exit survey and 50% weightage for alumni. The process followed for program outcome attainment is depicted in Figure 7.2.

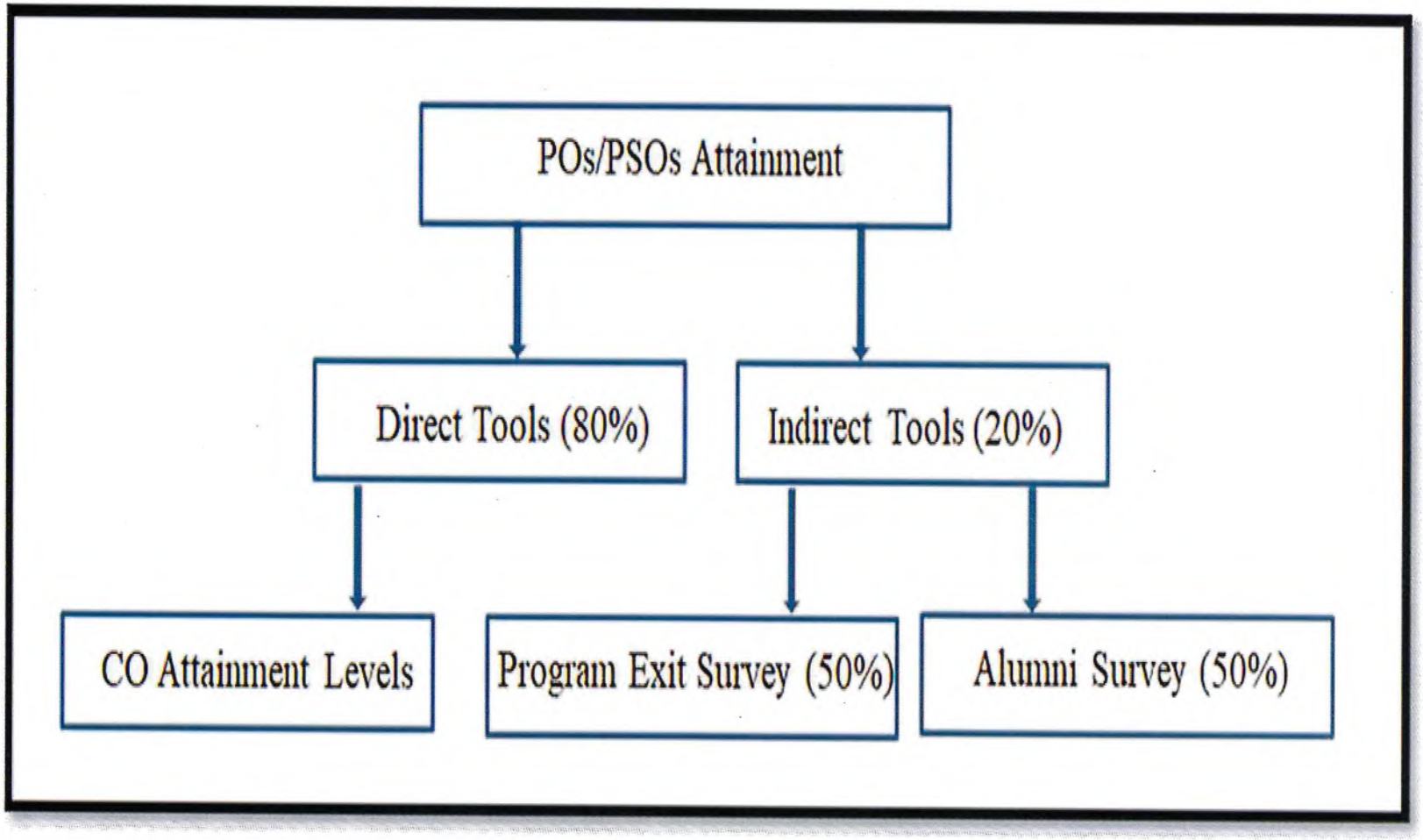

Figure 7.2: Assessment tools for Attainment of POs/PSOs

Vinay

- For the POs/PSOs & COs attainment following activities are executed on the EMS at department end:
    a. Adding PO/PSO statements (At the end of EMS coordinators)
    b. Adding CO statements (At the end of concern Course faculty) with PO/PSO mapping
    c. COs & POs/PSOs mapping report
    d. Direct COs Attainment
    e. Direct POs Attainment
    f. Indirect COs Attainment
    g. Indirect POs/PSOs Attainment
    h. COs & POs Attainment Reports

7.2. Adding PO/PSO statements:

- First Step is to add PO/PSO Statements in setting page of EMS module as shown in the figure.

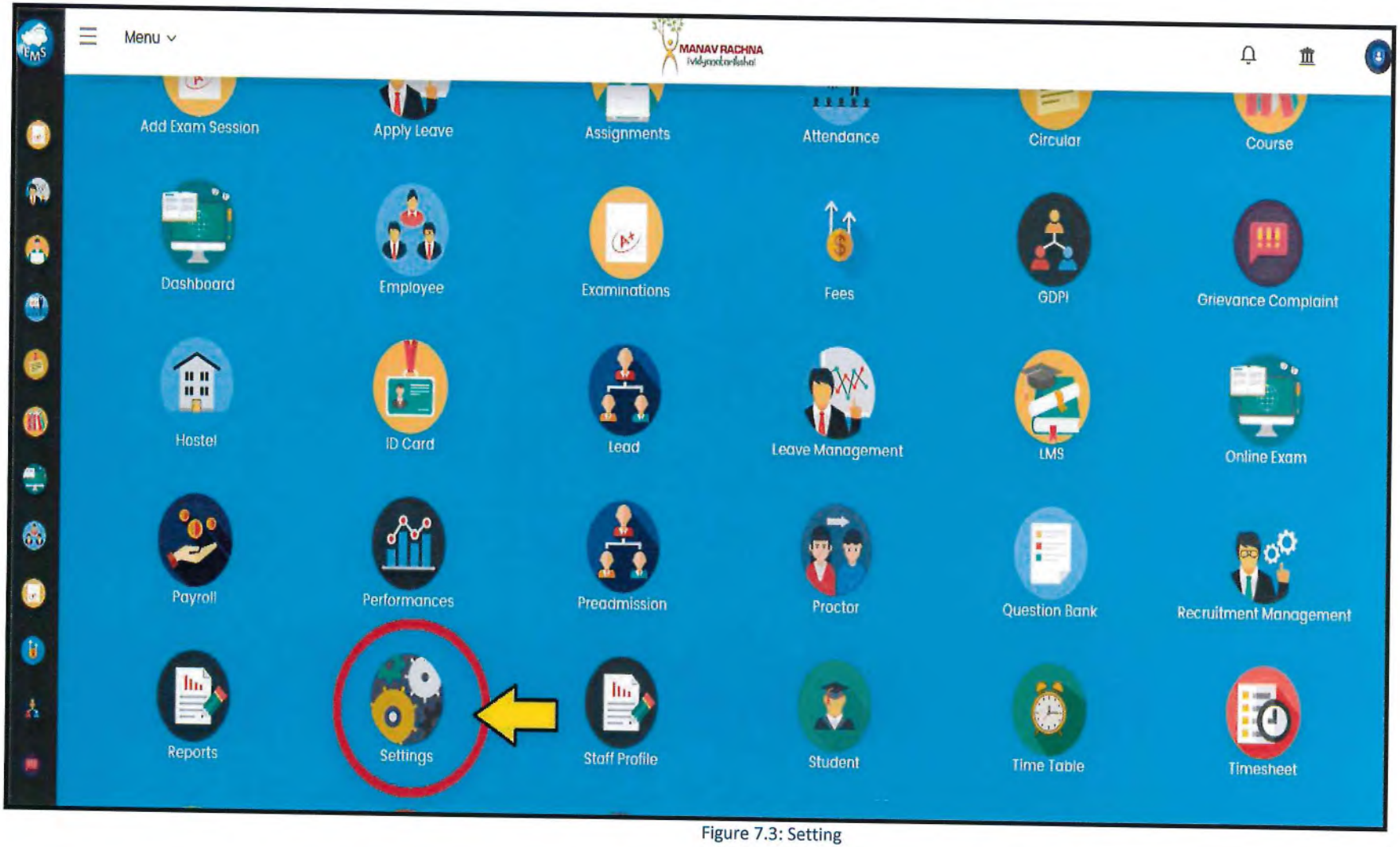

Figure 7.3: Setting

- Go to CO-PO setup for adding PO/PSO statements.
- PO/PSO statements will be added by the EMS coordinator or head of the department

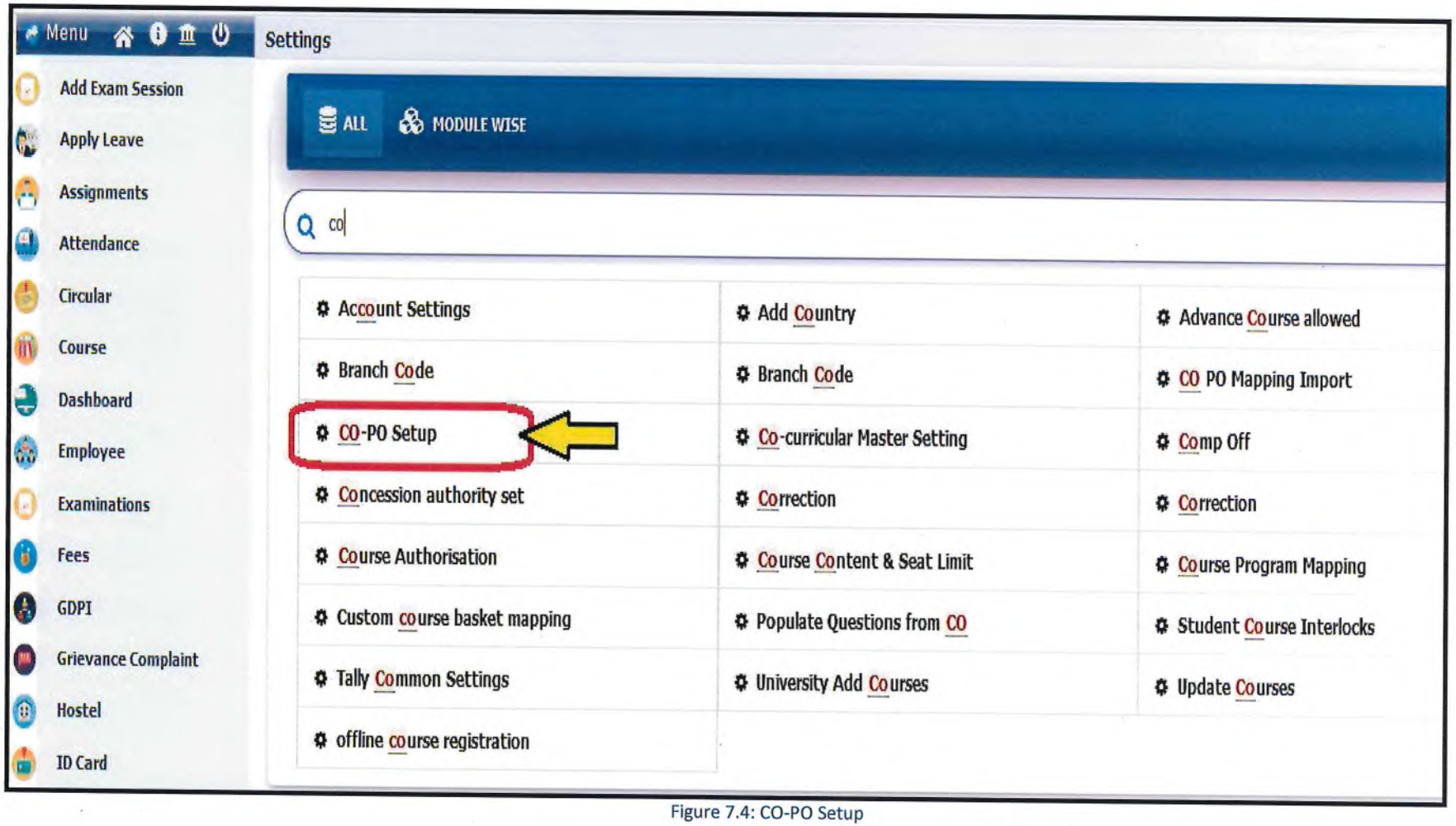

Figure 7.4: CO-PO Setup

Vinay

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- Select the "Programs PO" for adding the PO/PSO statements.

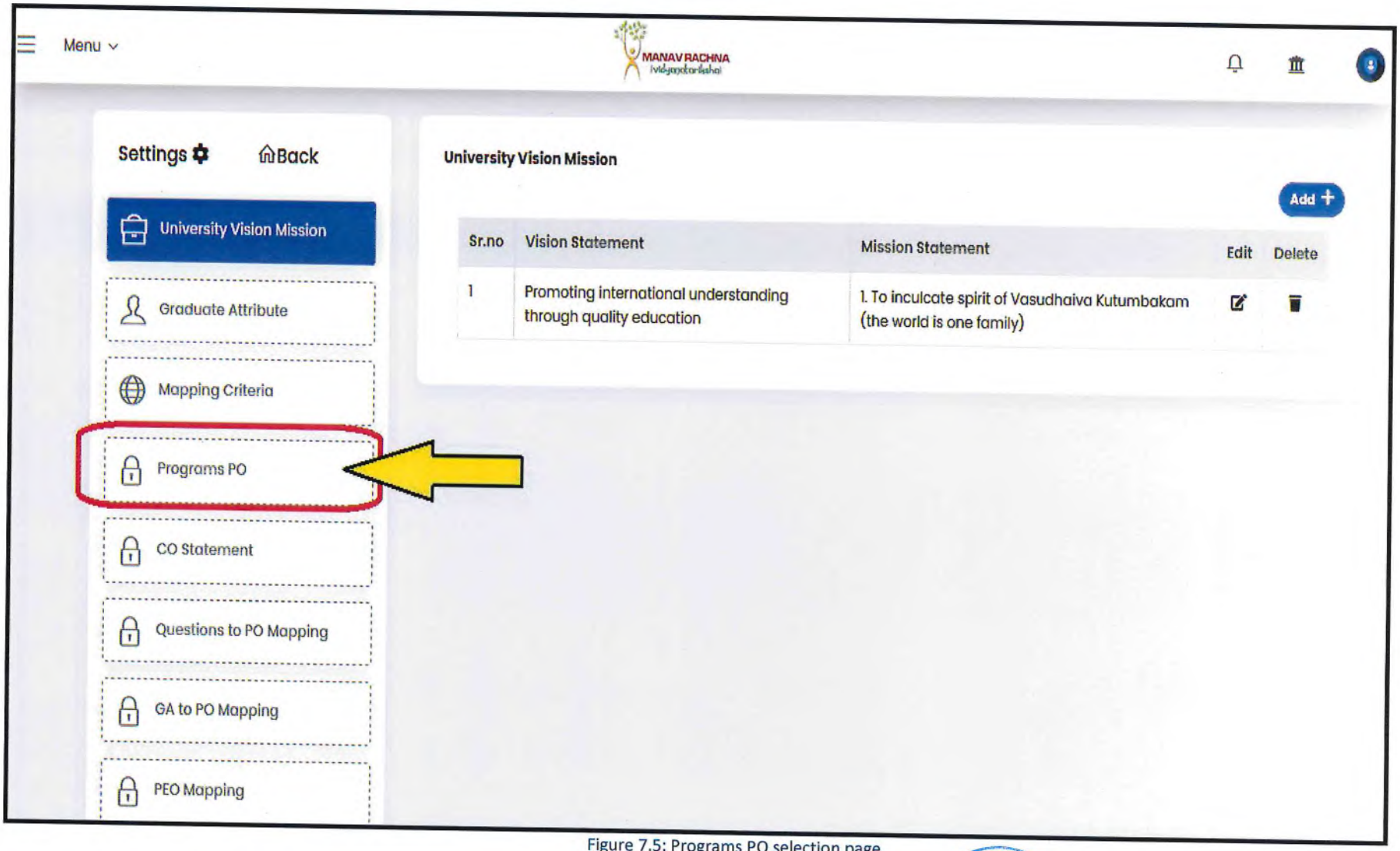

Figure 7.5: Programs PO selection page

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- Fill all the parameters as per department and PO/PSO's details.

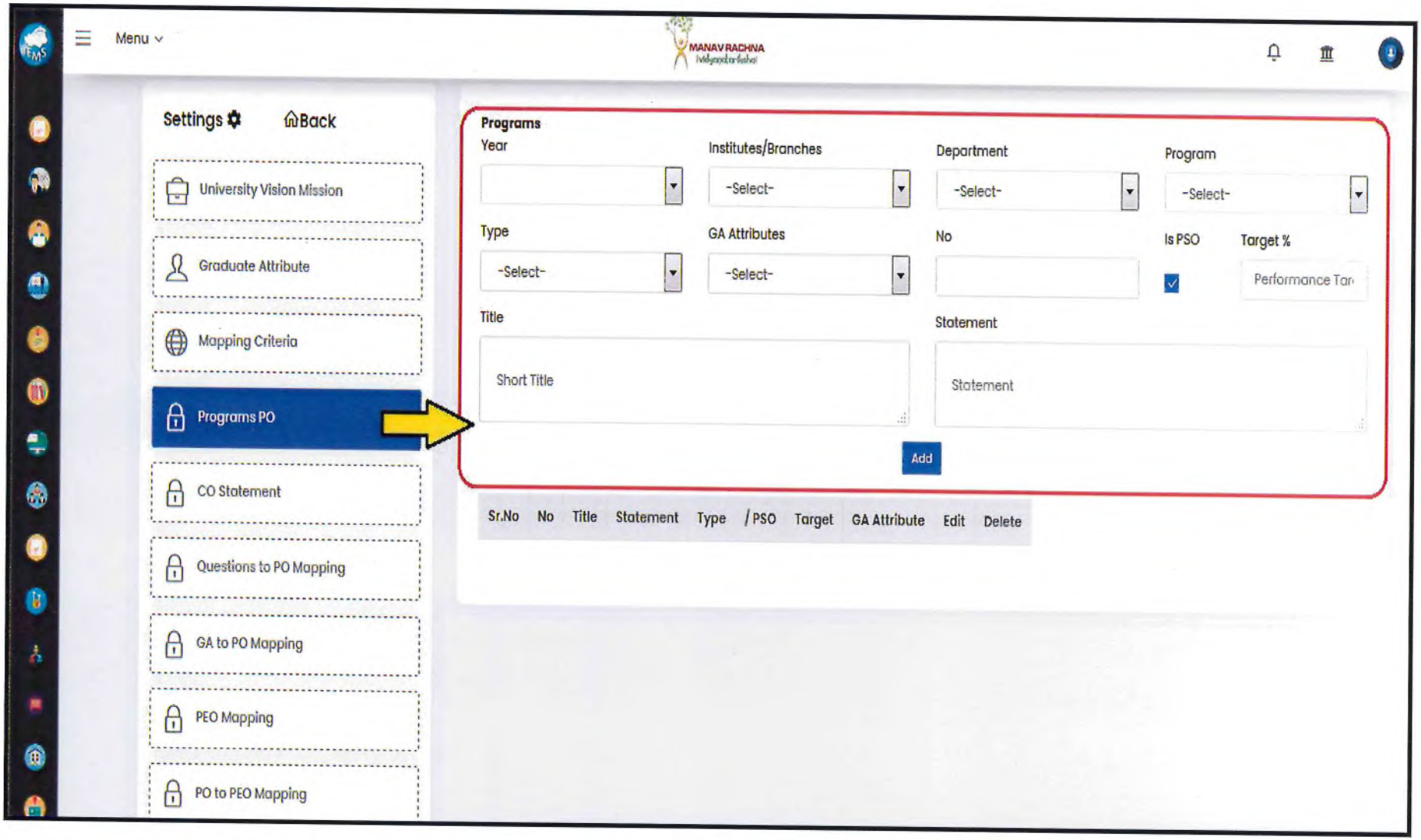

Figure 7.6:Adding the PO/PSO's by filling all parameters

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- Select "Generic" for the Program outcomes and select "specific" for the program specific outcomes.

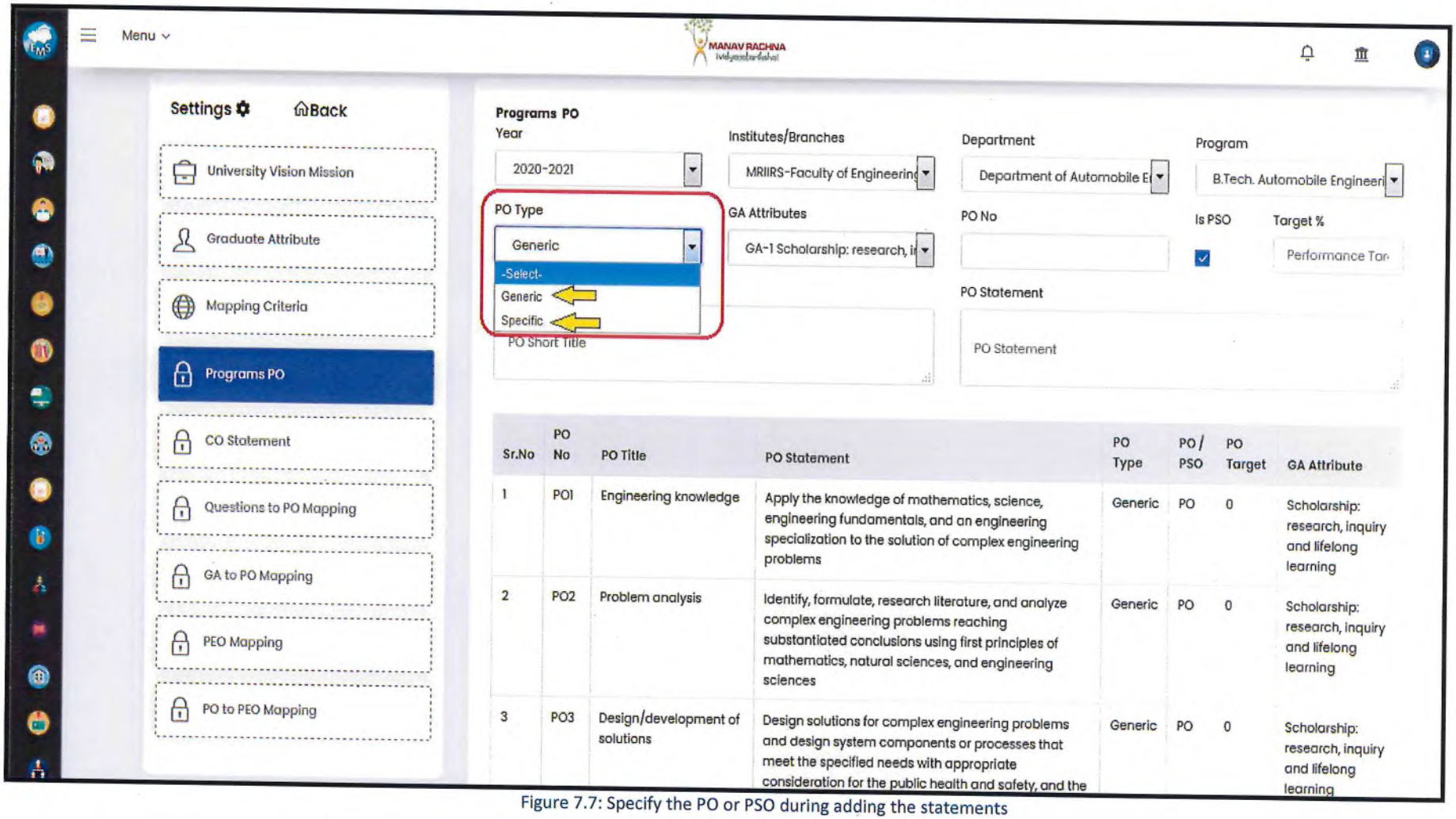

Figure 7.7: Specify the PO or PSO during adding the statements

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7.3. Adding CO statements:

After adding PO/PSO statements on EMS by the respective EMS coordinator, faculty members will map departmental PO/PSO to course statement as per their curriculum as shown in figures.

- Open setting page for adding the CO statements with PO/ PSO mapping.

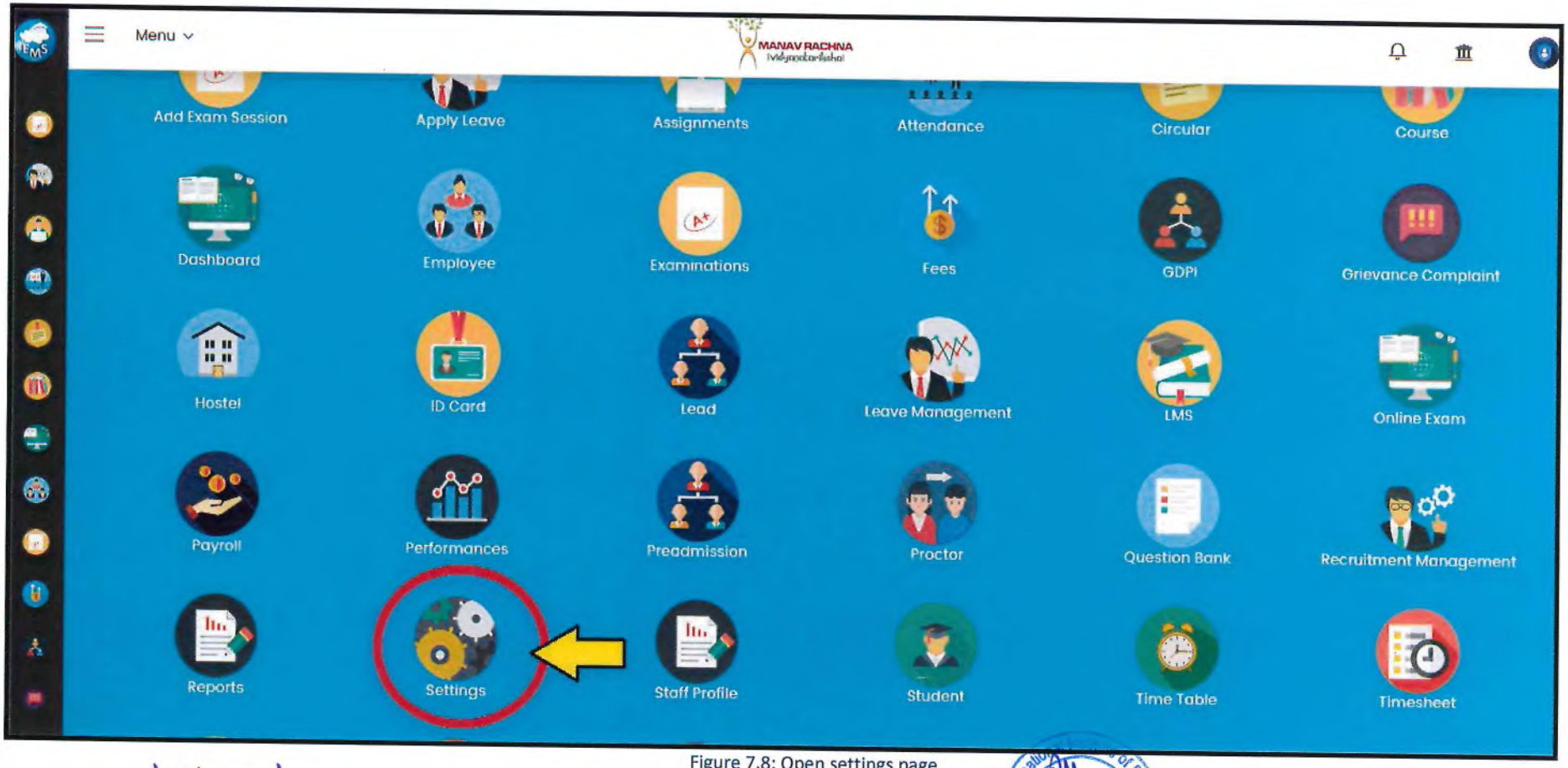

Figure 7.8: Open settings page

- Select the "CO Statement" for adding the CO statement with PO/PSO mapping.

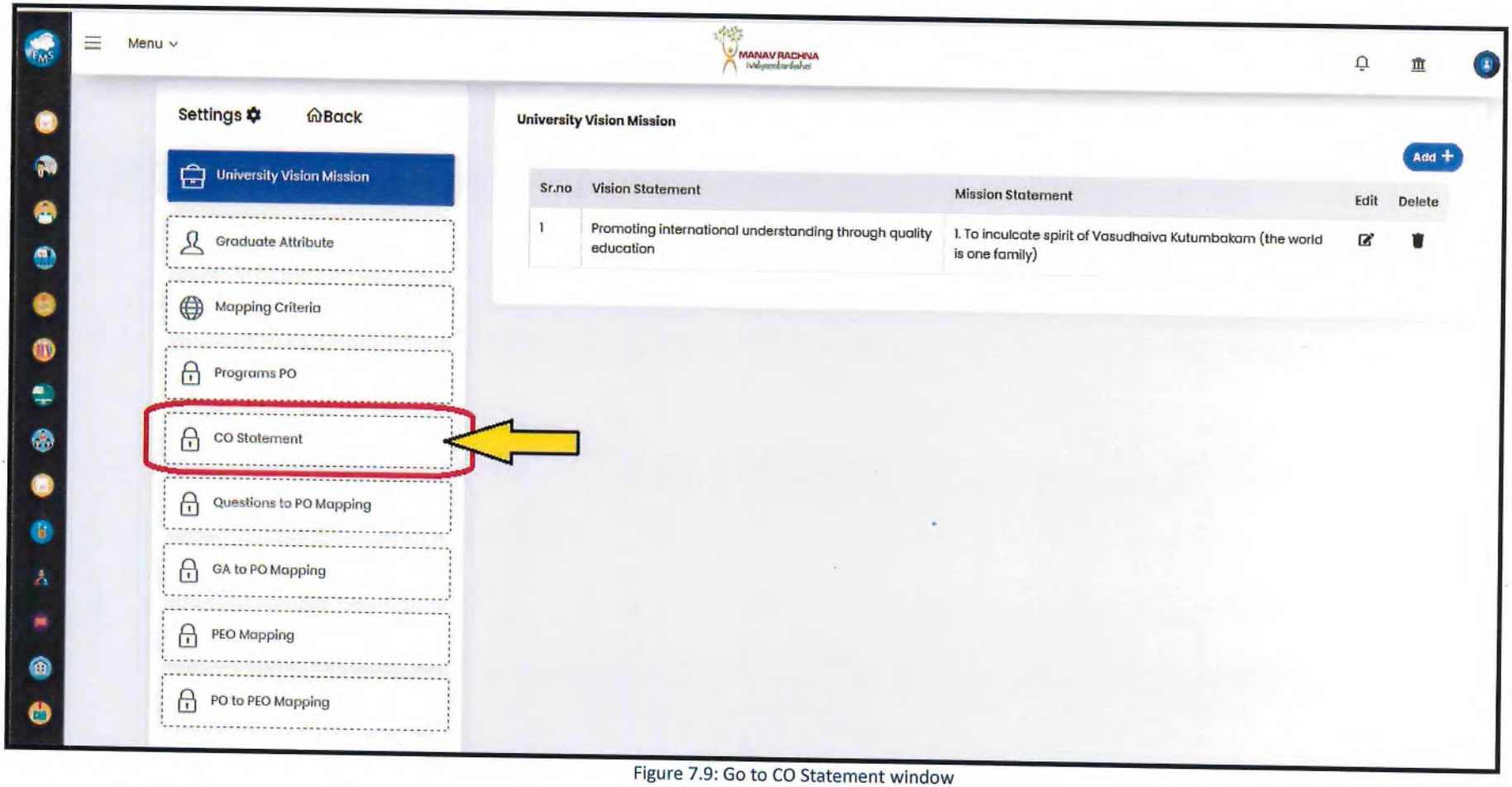

Figure 7.9: Go to CO Statement window

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- Fill all the filters as per department and concerned subject in the department.

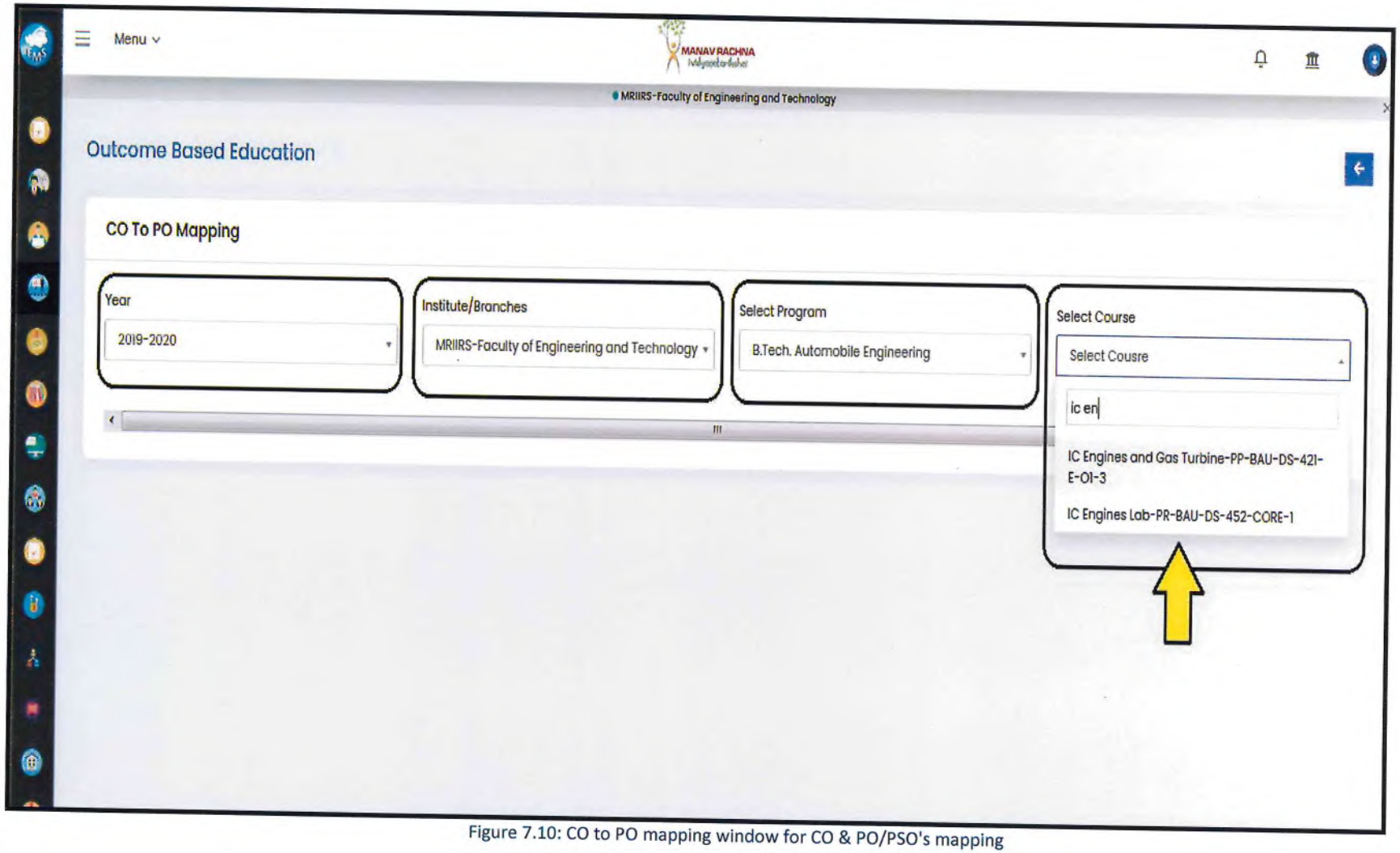

Figure 7.10: CO to PO mapping window for CO & PO/PSO's mapping

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- Select "view more details" for adding the CO statements.

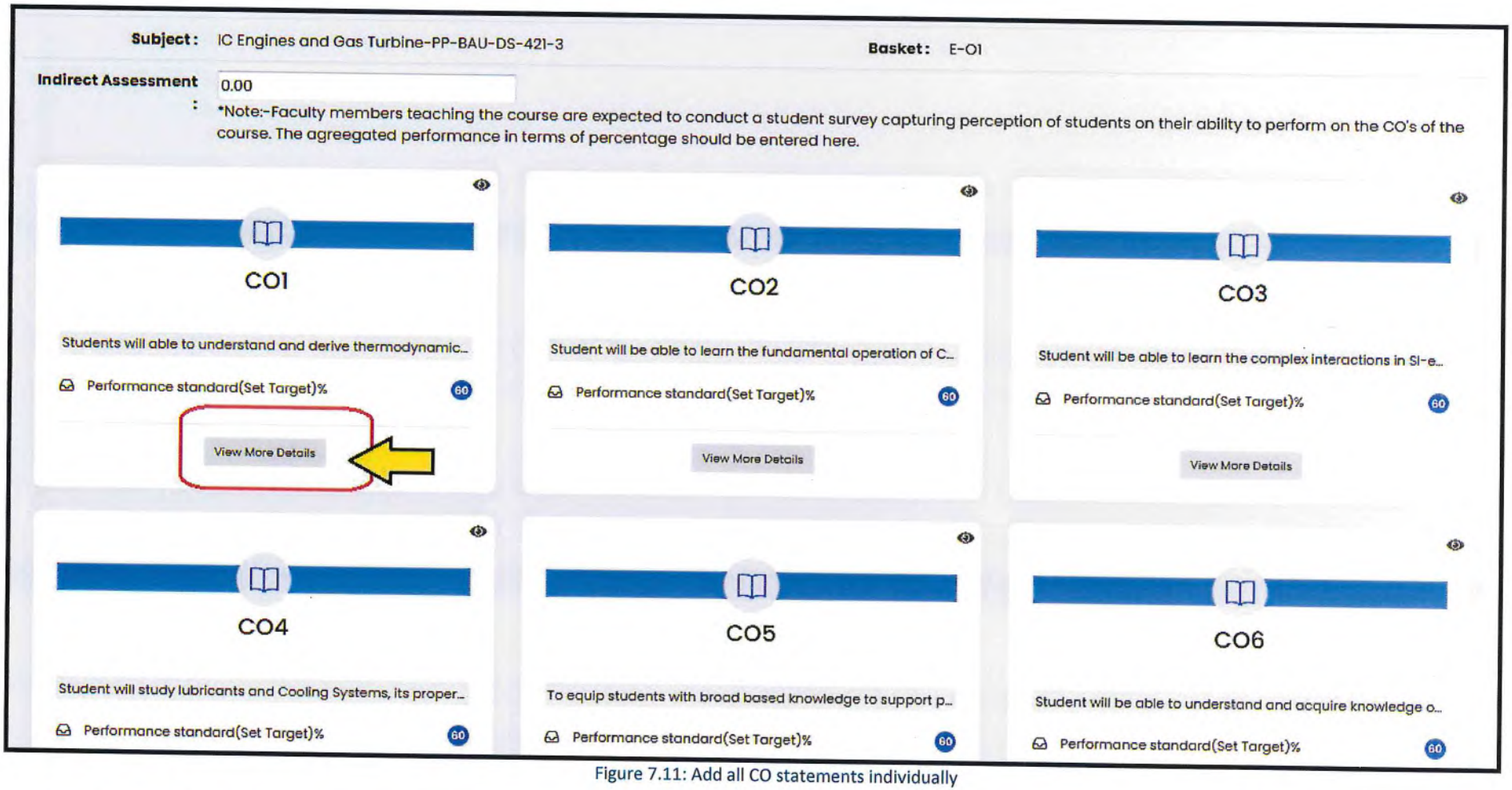

Figure 7.11: Add all CO statements individually

- Fill the CO statement in the given box and then fill the target value.
- Map the PO/PSO as per curriculum (Select Strong for 3, Moderate for 2 and 1 for weak)
- If CO is not mapped to PO/PSO then please do not select any parameter from the dropdown.

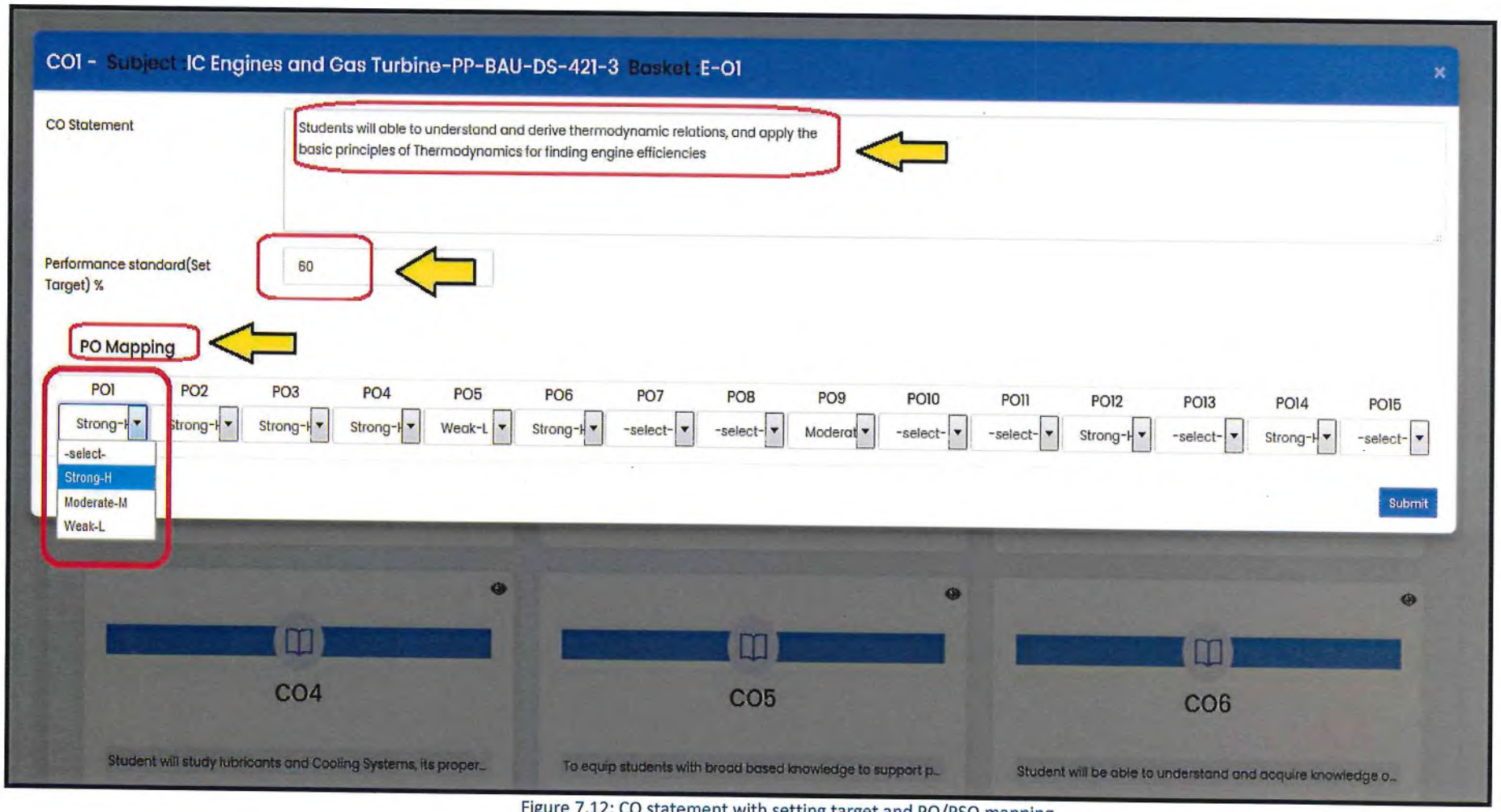

Figure 7.12: CO statement with setting target and PO/PSO mapping

- Similarly add all the CO statements with the PO/PSO mapping.

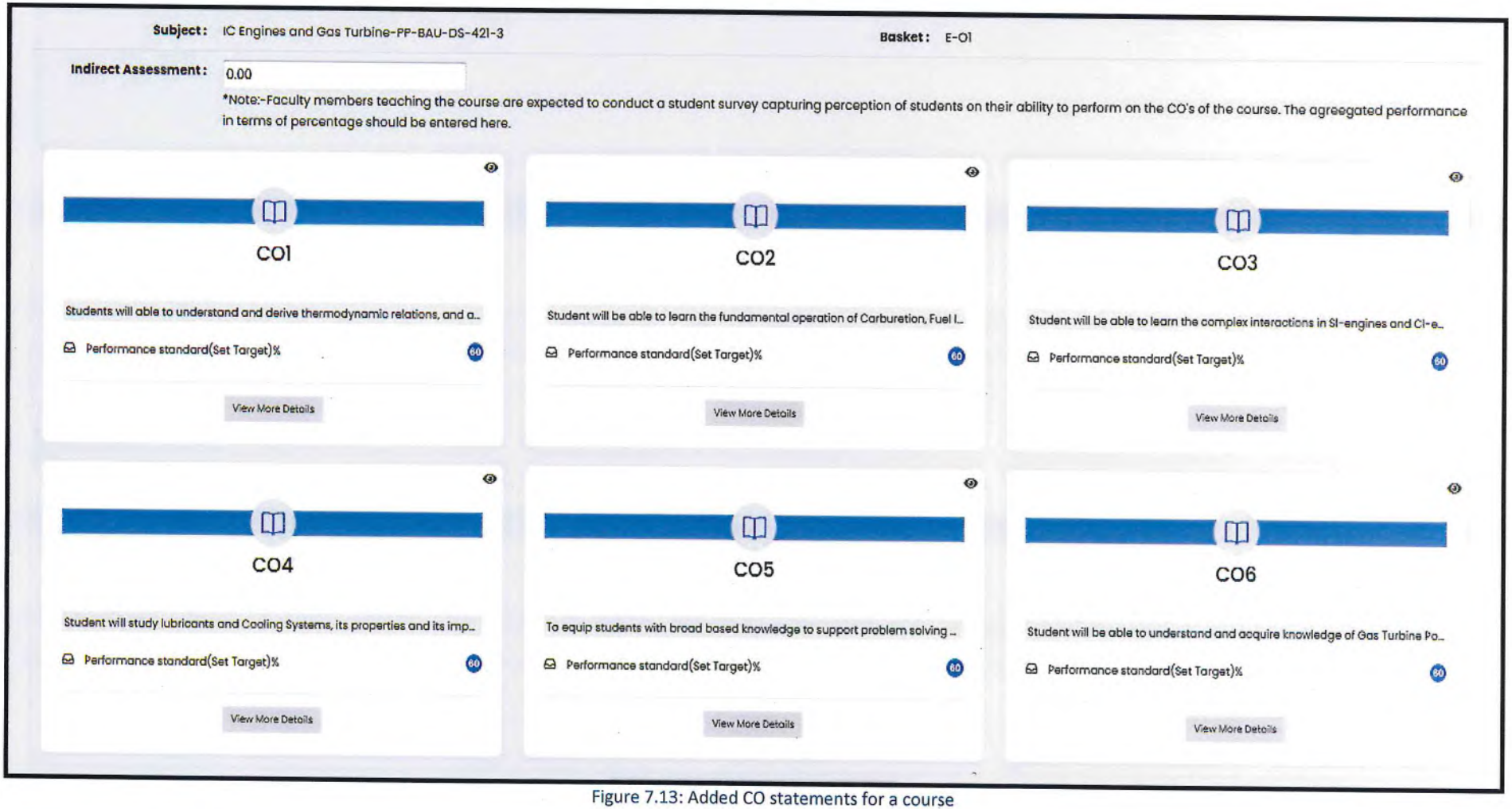

Figure 7.13: Added CO statements for a course

7. 4. CO & PO mapping report: -

- CO & PO/PSO statements checking rights have been provided to all faculty members for checking their course statements and PO/PSO mappings with course statements.

Figure 7.14: Report Page

- Go to CO PO reports to check the CO & PO/PSO statements and PO/PSO mapping.

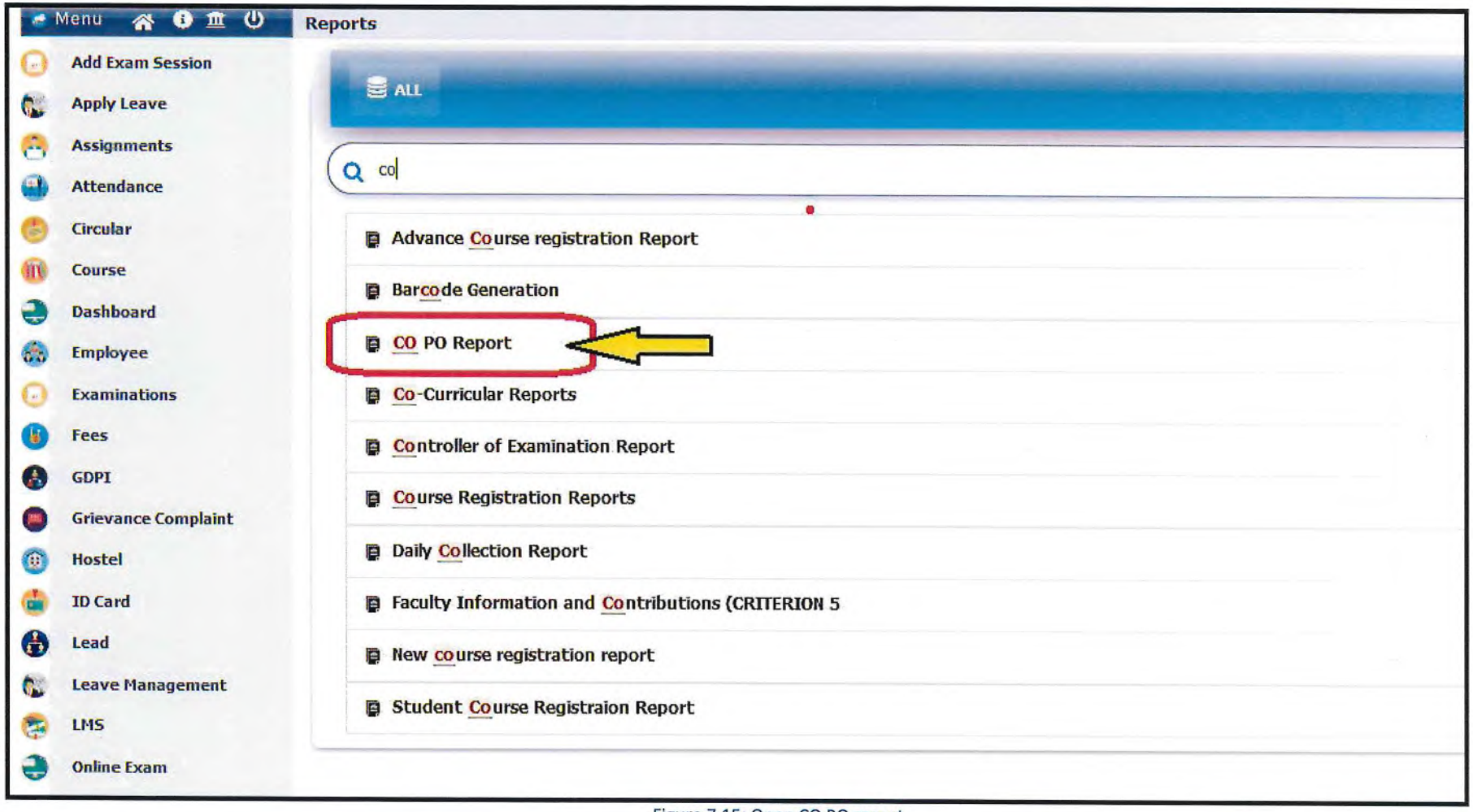

Figure 7.15: Open CO PO report

- Select CO PO mapping report and fill all the filters as per program and session.

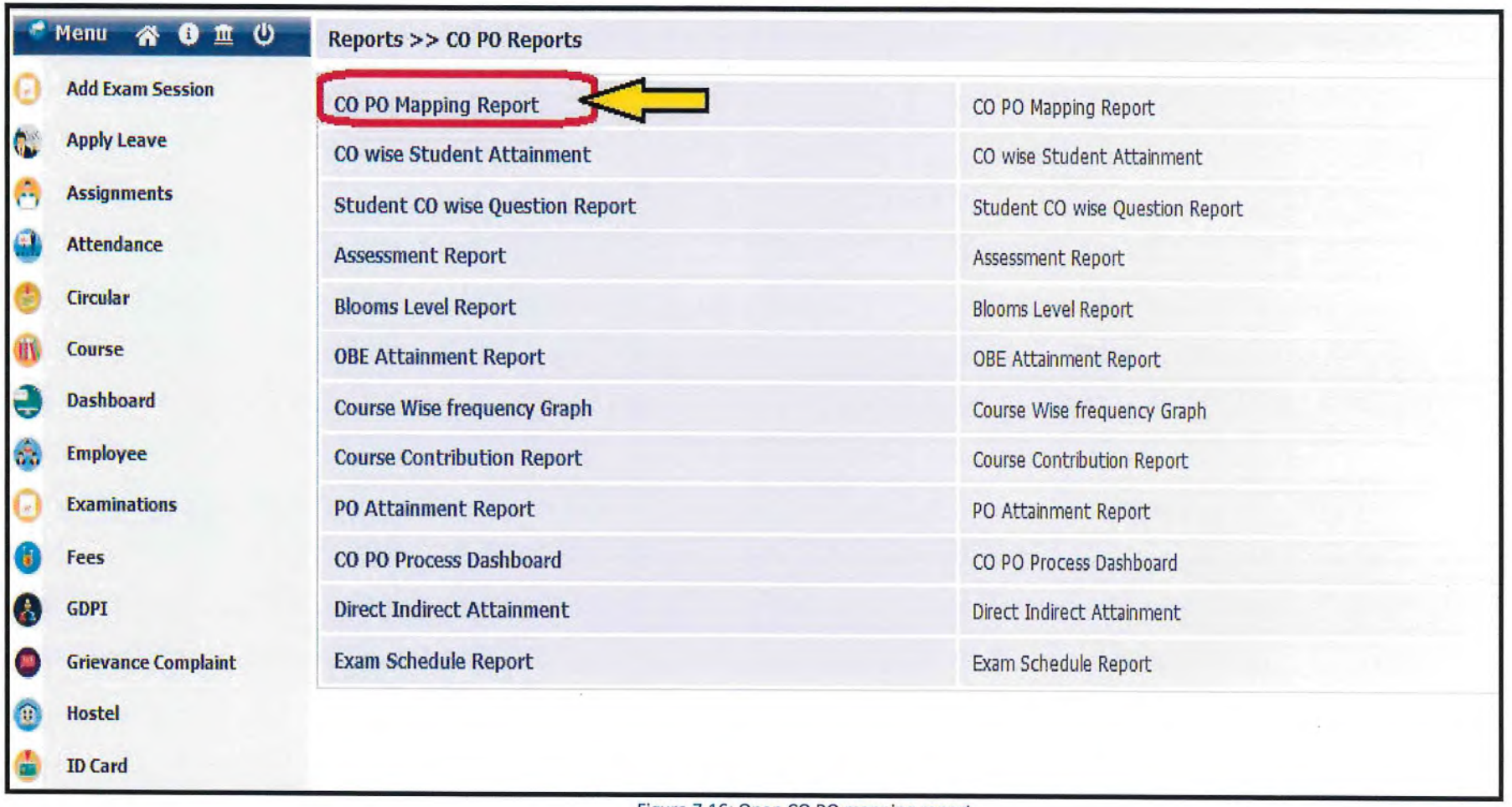

Figure 7.16: Open CO PO mapping report

Registrar

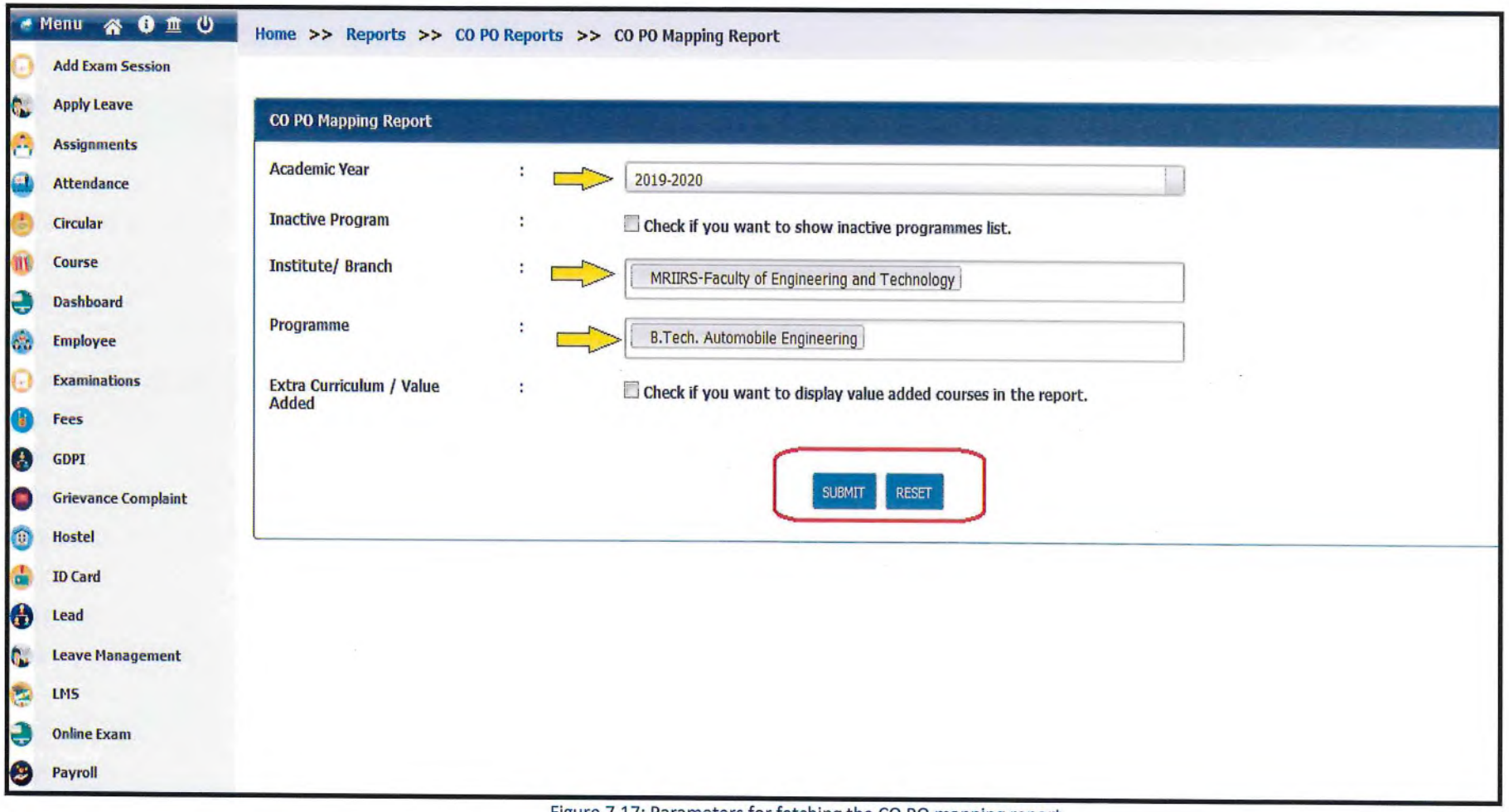

Figure 7.17: Parameters for fetching the CO PO mapping report

29-01-2021 20:18:49

Academic Year : 2019-2020 Institute/ Branch Name : MRIIRS-Faculty of Engineering and Technology Programme Name : B.Tech. Automobile Engineering

Sr. No.	GA No.	Graduate Attributes	PO No.	Programme Outcomes
1	GA1	Scholarship: research, inquiry and lifelong learning	PO1	Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems
2	GA1	Scholarship: research, inquiry and lifelong learning	PO2	Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences
3	GA1	Scholarship: research, inquiry and lifelong learning	PO3	Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations
4	GA1	Scholarship: research, inquiry and lifelong learning	PO4	Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions
5	GA1	Scholarship: research, inquiry and lifelong learning	PO5	Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations
6	GA1	Scholarship: research, inquiry and lifelong learning	PO6	Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice
7	GA1	Scholarship: research, inquiry and lifelong learning	PO7	Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development
8	GA1	Scholarship: research, inquiry and lifelong learning	PO8	Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice
9	GA1	Scholarship: research, inquiry and lifelong learning	PO9	Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings
10	GA1	Scholarship: research, inquiry and lifelong learning	PO10	Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions
11	GA1	Scholarship: research, inquiry and lifelong learning	PO11	Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments
12	GA1	Scholarship: research, inquiry and lifelong learning	PO12	Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change
13	GA1	Scholarship: research, inquiry and	PO13	Students will be able to design, analyze and build virtual and real models of vehicle and its components, and conduct testing in product development environments through applied computer

Figure 7.18: PO/PSO statements in CO PO mapping report

Registrar

Show All entries

Search:

Sr. No.	Semester	Institute Course Code	Catalog Course Code	Title	Target	Course Outcome No	Course Outcome Statement	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
1	Sem 1	BEE-101 - PP		basic electrical engineering	50	CO1	describe the basic electrical laws, theorems, components of electrical system, power converters, earthing and working of batteries.	Strong-H	Strong-H	Moderate-M	Weak-L	Moderate-M	-	-	-
1					50	CO2	apply the theorems and laws for solving both dc and ac networks.	Strong-H	Strong-H	Moderate-M	Weak-L	Moderate-M	-	-	-
1					50	CO3	differentiate single phase and three phase system.	Strong-H	Strong-H	Moderate-M	Weak-L	Moderate-M	-	-	-
1					50	CO4	explain the construction and working of transformers and electrical machines.	Strong-H	Strong-H	Moderate-M	Weak-L	Moderate-M	-	-	-
1					50	CO5	analyze and compare the concepts of dc and ac machines	Strong-H	Strong-H	Moderate-M	Weak-L	Moderate-M	-	-	-
2	Sem 1	BEE-151 - PR		basic electrical engg lab	80	CO1	understand the basic electrical laws, theorems and their applications to the D.C and A.C networks	Strong-H	Strong-H	Moderate-M	Weak-L	Moderate-M	-	-	-
2					80	CO2	know the basic concepts of three phase system	Strong-H	Strong-H	Moderate-M	Weak-L	Moderate-M	-	-	-
2					80	CO3	understand the construction and working of transformers	Strong-H	Strong-H	Moderate-M	Weak-L	Moderate-M	-	-	-
2					80	CO4	study the working principles of electric machines and power converters	Strong-H	Strong-H	Moderate-M	Weak-L	Moderate-M	-	-	-

Figure 7.19: Parameters for fetching the CO PO mapping report

Vinay

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7.5. Direct Attainment of COs: -

Each theory and practical course have internal as well as external assessment covering the following parameters with the CO mapping by uploading the excel sheet on EMS:

- Teacher's assessment: This includes assignments, tutorials, quiz, viva voce and lab report for practical courses etc.
- Sessional Test-1 and 2.
- End semester examination
- Technical Seminars, Colloquium and Projects
- Industrial Training: Assessment of training primarily includes feedback from the industry mentor and in-house faculty mentor. Presentations shall also be organized to assess the performance.
- Course Rubrics: These course specific evaluation charts shall be prepared by the course coordinators to assess student's performance consistently for CO and subsequent PO attainment analysis for lab courses, projects, colloquium, industrial training, etc. The scores (1, 2, 3, 4) would be awarded on the basis of their 'unsatisfactory', 'developing', 'satisfactory', and 'exemplary' performance in respective attributes. For students having scores less than or equal to 2, a subsequent action shall be initiated by the respective course instructor.

Registrar

7.5.1 Adding Marks with CO mapping:-

- Performance window is used for adding the marks and for applying the marks measuring parameters like average, best of two/three and scale of zero etc.

Figure 7.20: Open Performance Window

- Open performance window and select the 'Question wise import marks' from the dropdown in menu as shown in the figure:

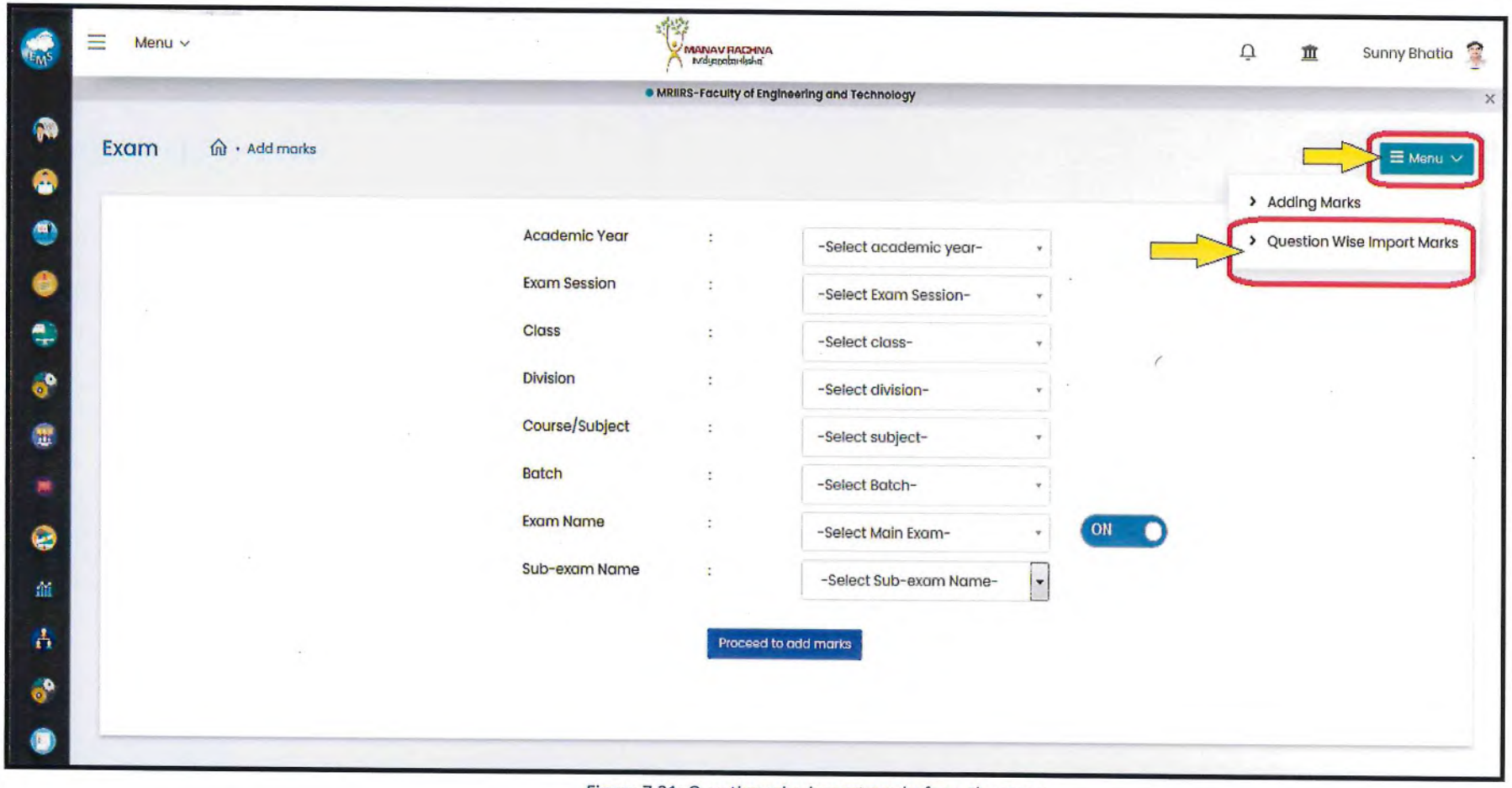

Figure 7.21: Question wise import marks from the menu

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- Select parameters from the dropdown as per course and department details. All parameters are shown in figure for importing the excel file with CO mapping.

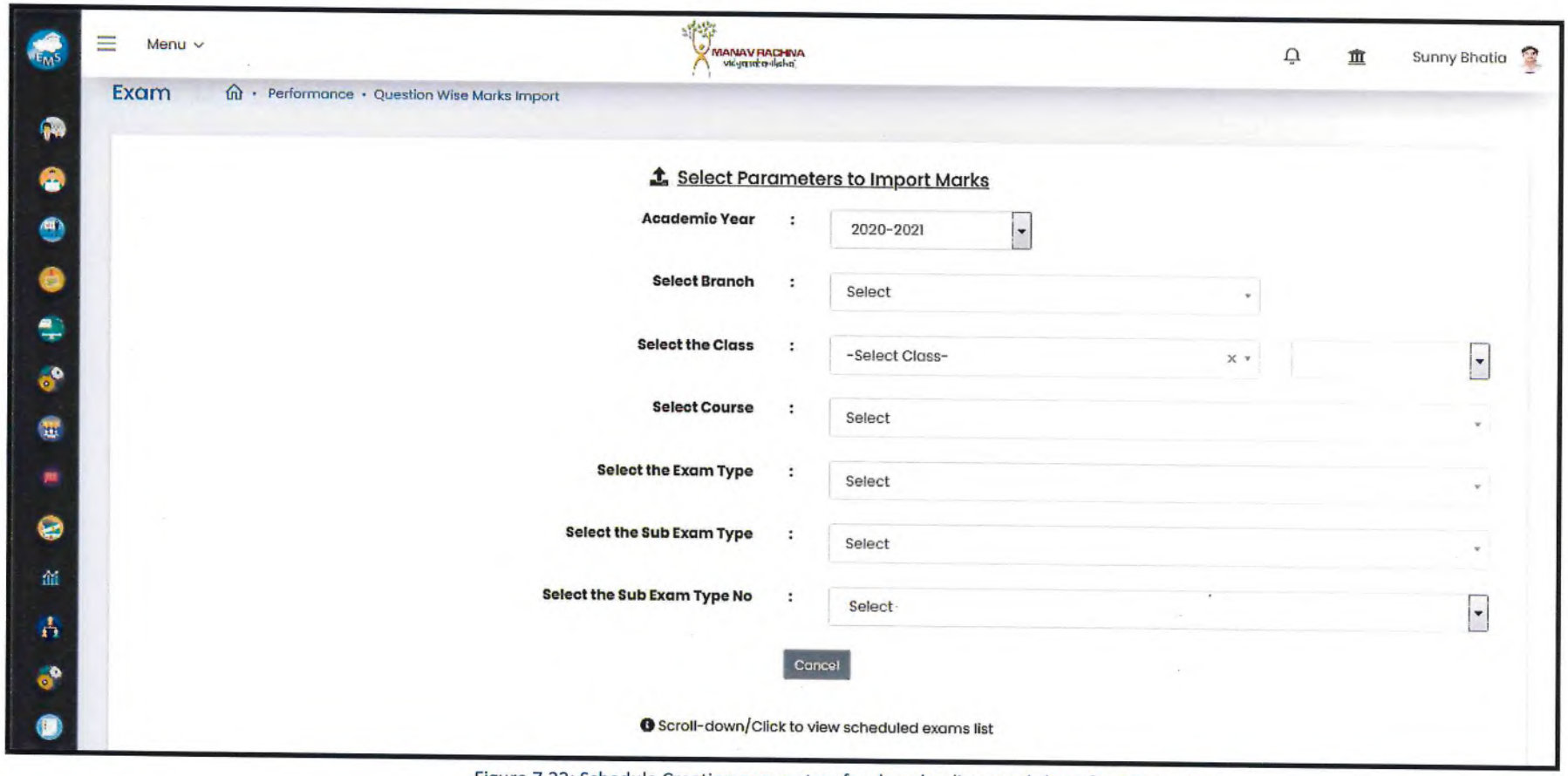

Figure 7.22: Schedule Creation parameters for downloading excel sheet for CO mapping

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- Select the exam type as per internal or external parameters.
- Internal parameters include Sessional-1, Sessional-2, Assignments and Rubrics etc. in which CO mapping will be done by downloading the excel sheet.

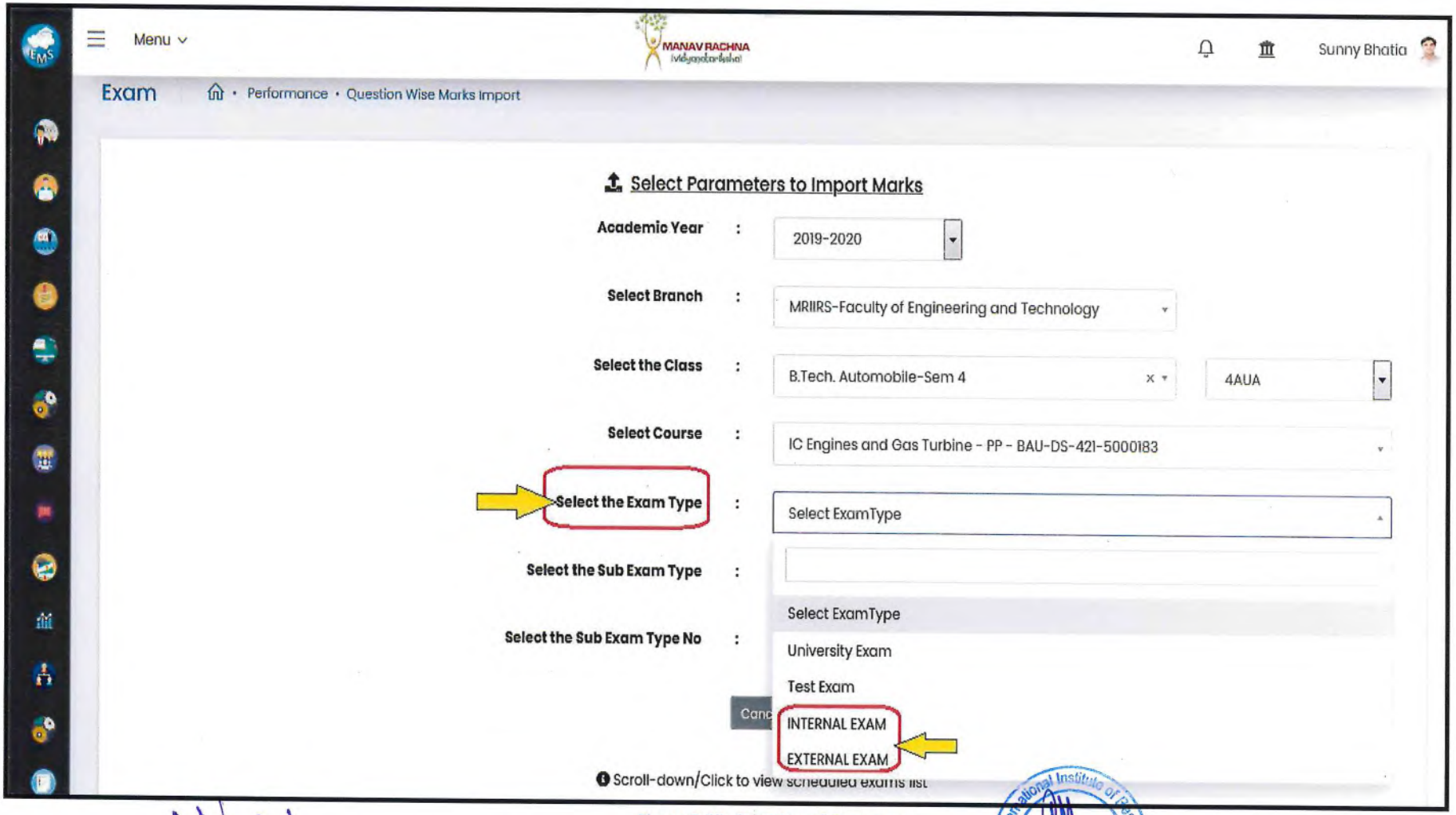

Figure 7.23: Selection of Exam type

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- Similarly, Select 'Exam type' from the dropdown as 'External Exam' which includes end semester exam as per even and odd sem.

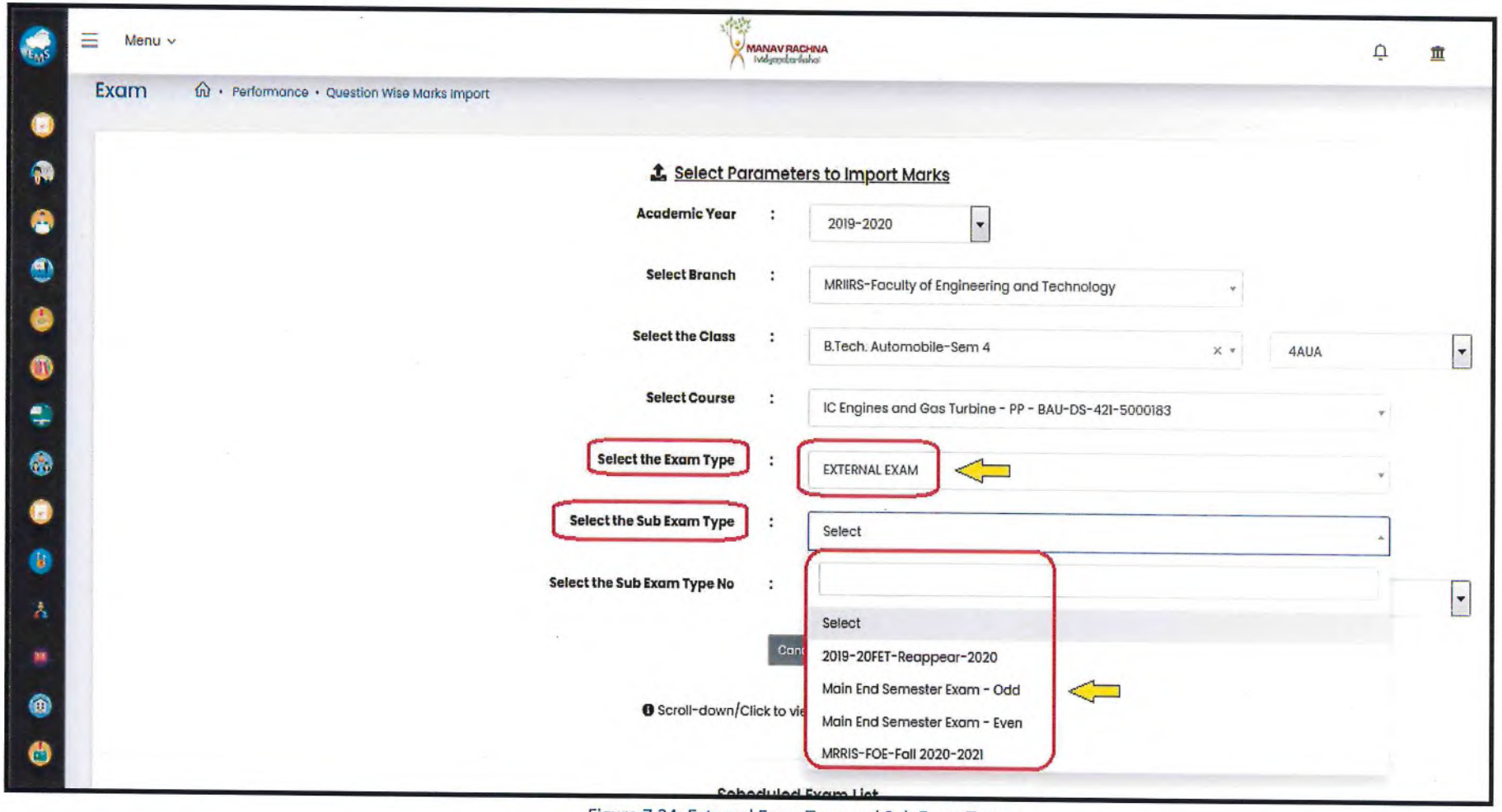

Figure 7.24: External Exam Type and Sub Exam Types

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- Select the sub exam type from the dropdown of 'Select the Sub Exam Type'.

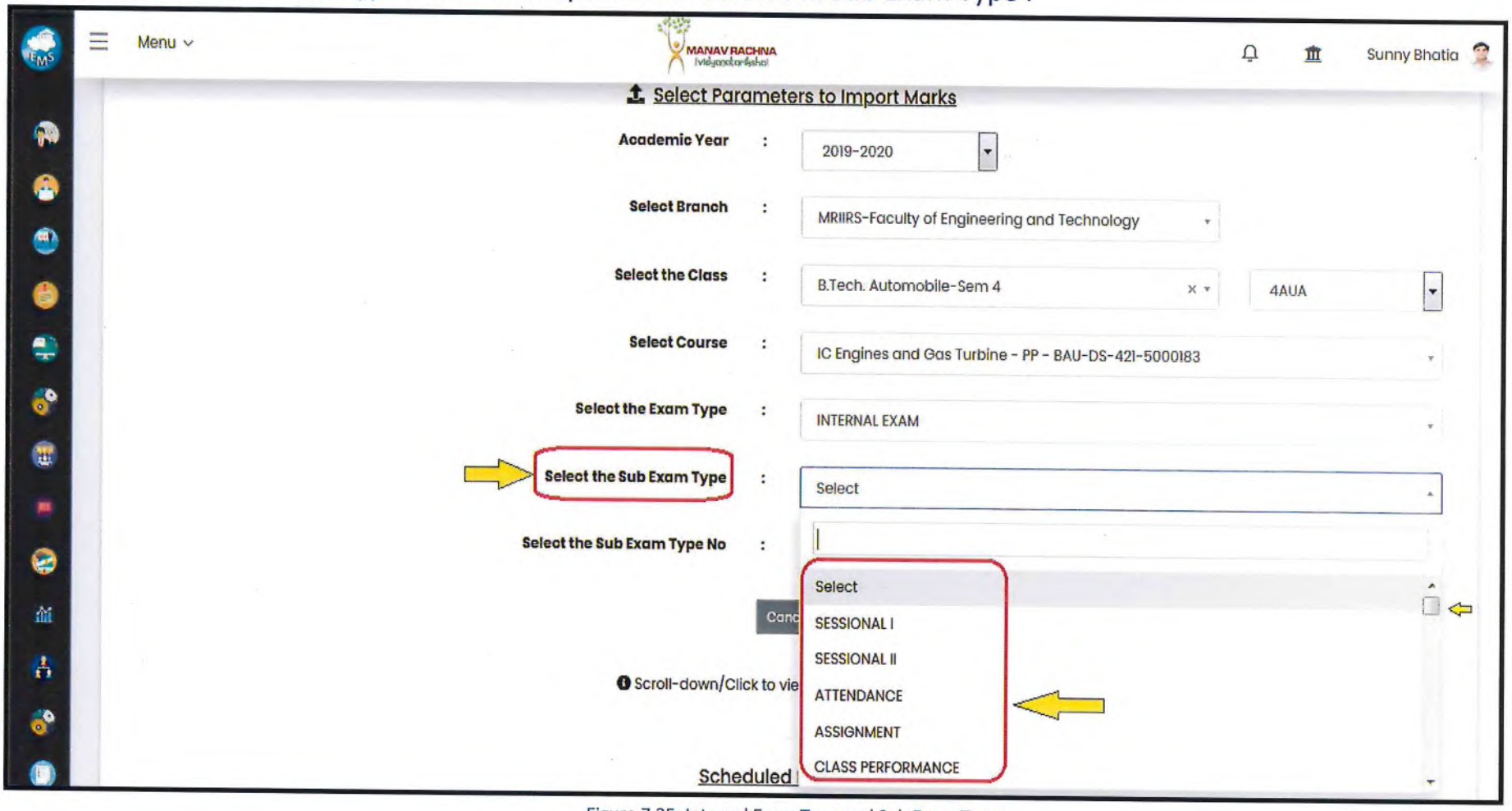

Figure 7.25: Internal Exam Type and Sub Exam Types

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- Sub Exam type no. are given in the dropdown to create a schedule after selecting anyone of the sub type no. Select sub type no. after selecting the sub exam type.

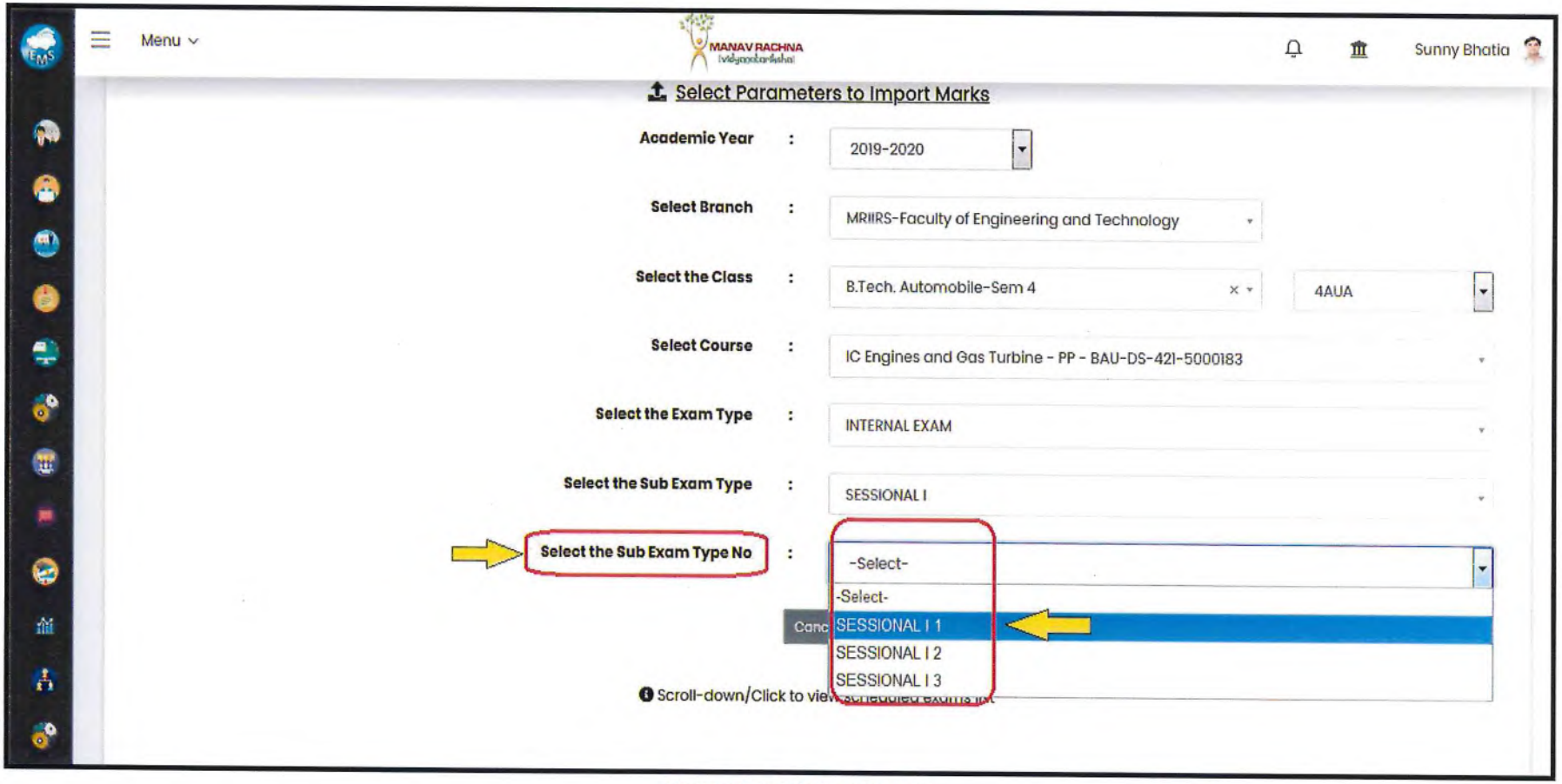

Figure 7.26: Sub Exam Type No

- Create a schedule after filling all the parameters in the given boxes. Now click on 'Schedule' as shown in the figure

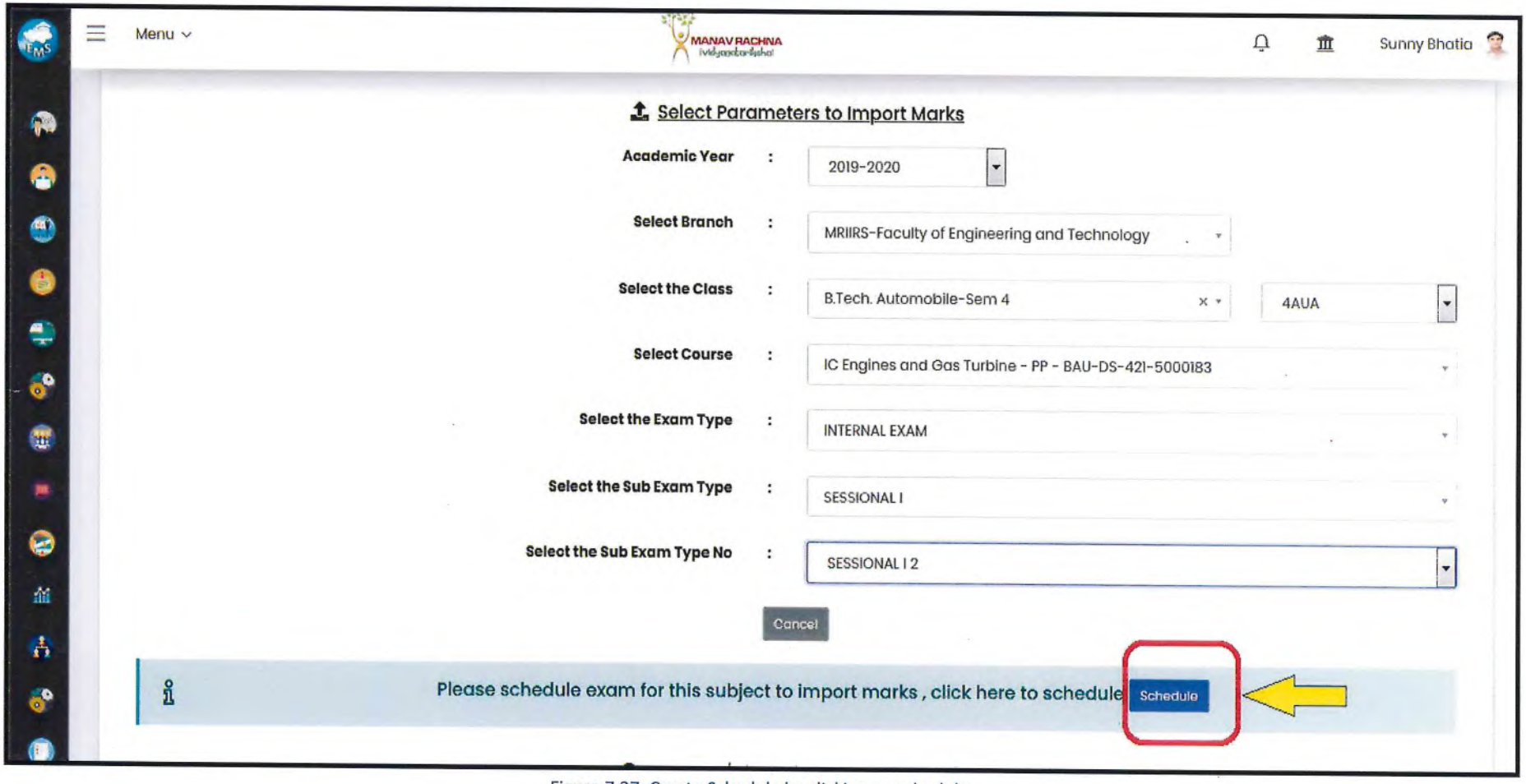

Figure 7.27: Create Schedule by clicking on schedule

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- After click on 'Schedule', This page will popup and fill all mandatory parameters on this page like maximum marks, passing percentage, date and timing. Now submit the page by clicking on the 'Schedule'.

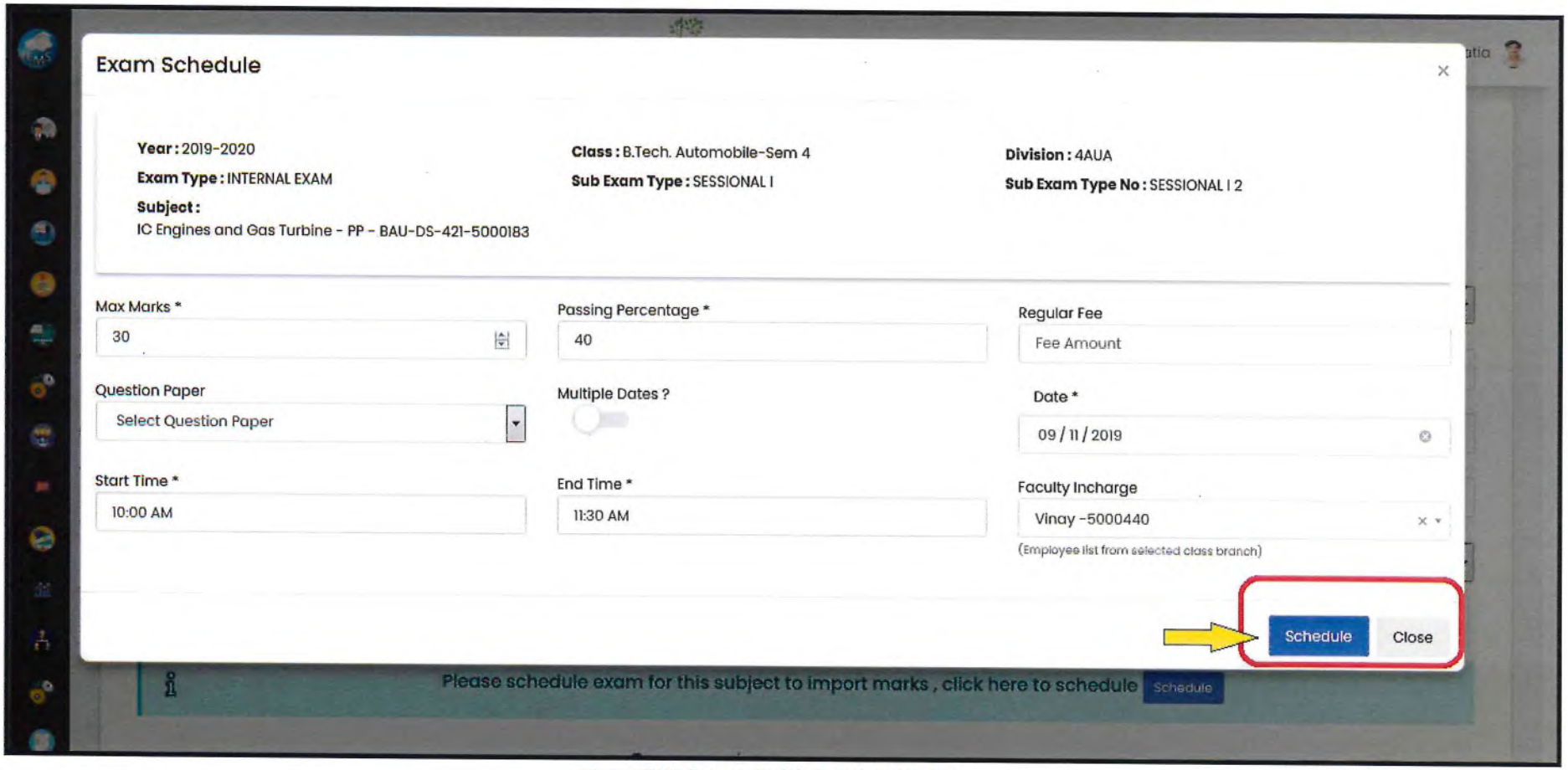

Figure 7.28: Exam Schedule Creation Window

- Now 'Submit' tab is active after creating the schedule and click on this submit tab as shown in the figure:

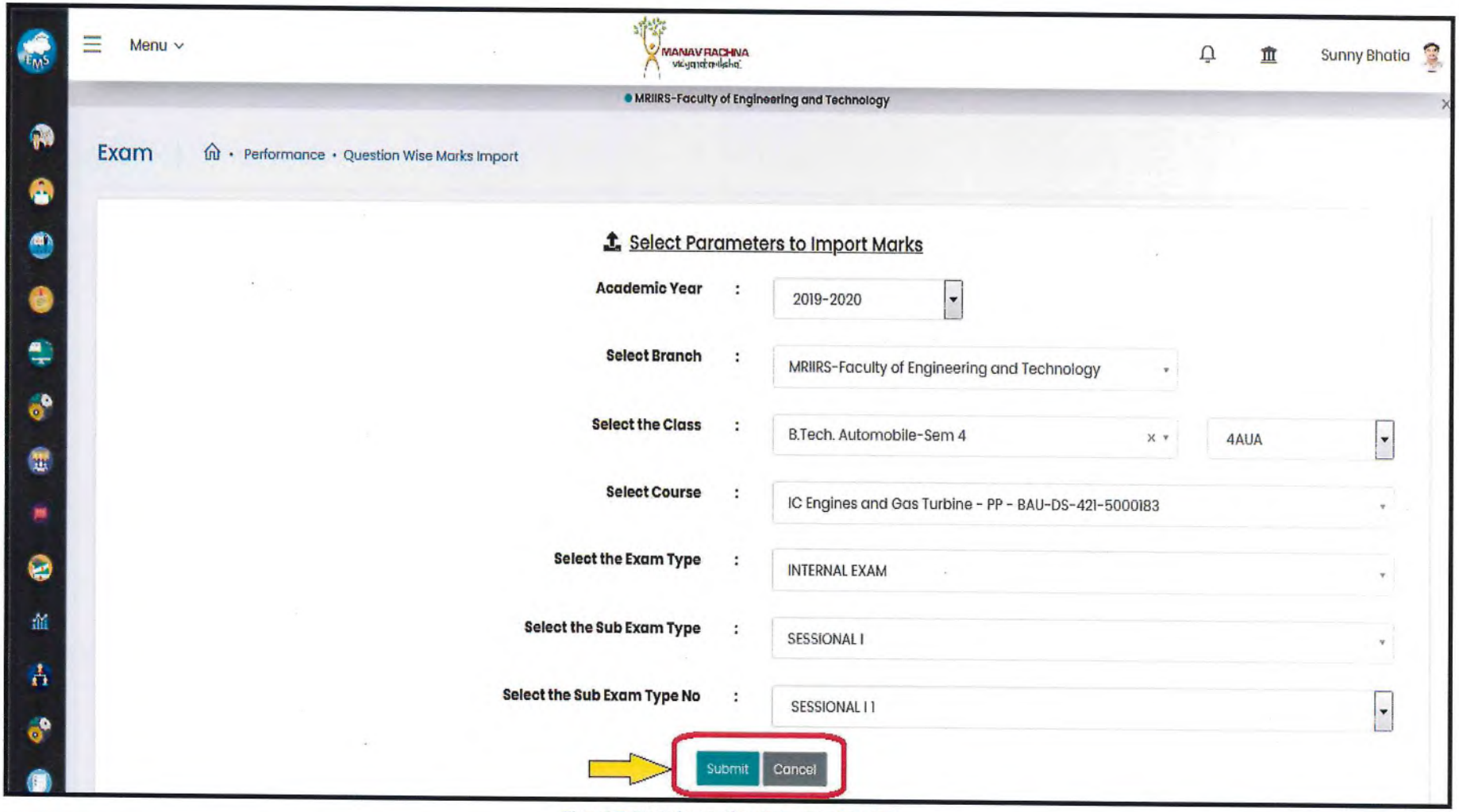

Figure 7.29: Submit After Schedule Creation

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- After submitting, a page will pop up through which faculty will download the excel file and able to add marks with CO mapping on the same file.
- Download excel format is available on this window.
- Import excel file after adding marks and CO mapping by click on the 'Browse' and then click on import the file to import excel sheet.

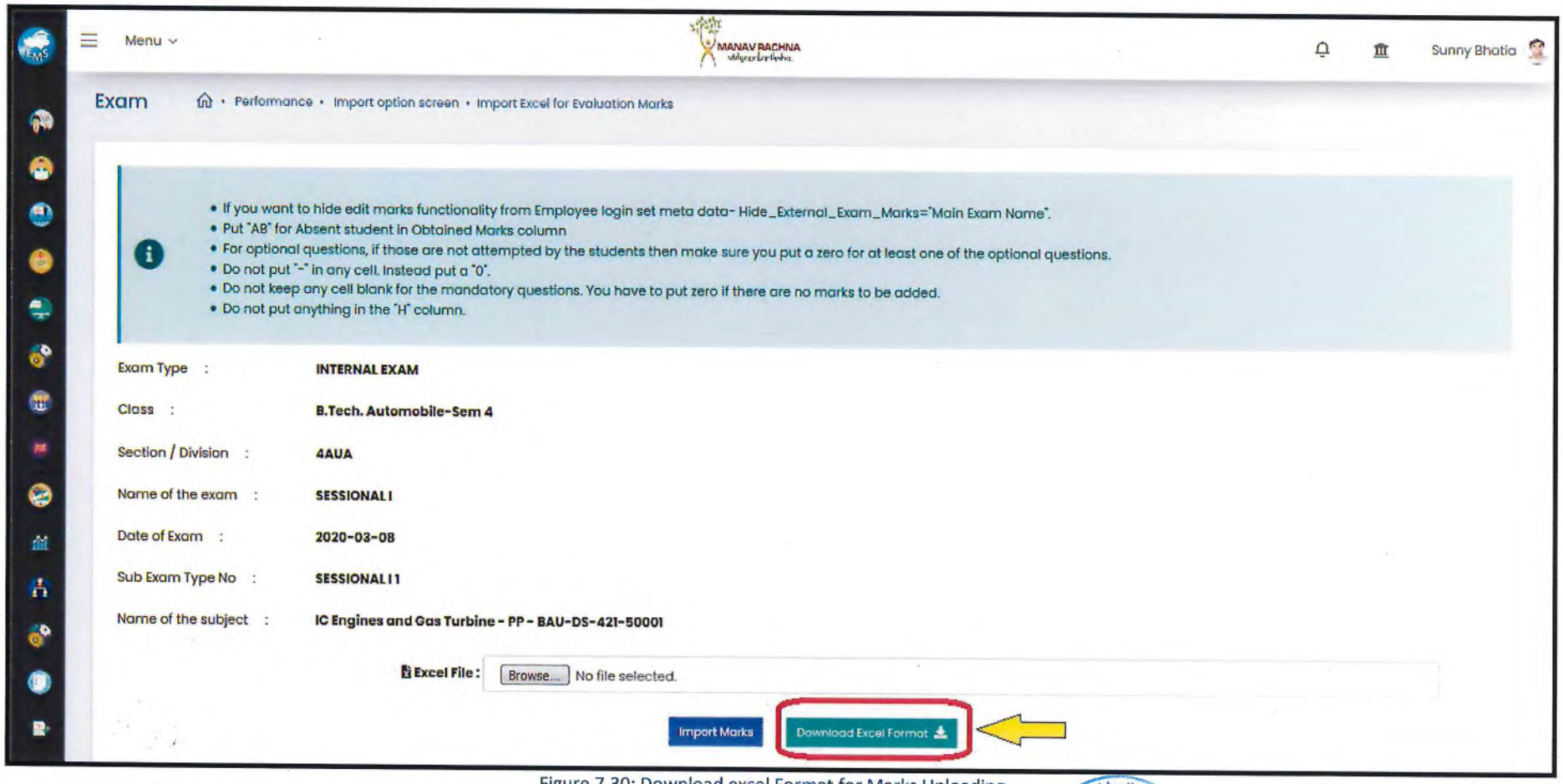

Figure 7.30: Download excel Format for Marks Uploading

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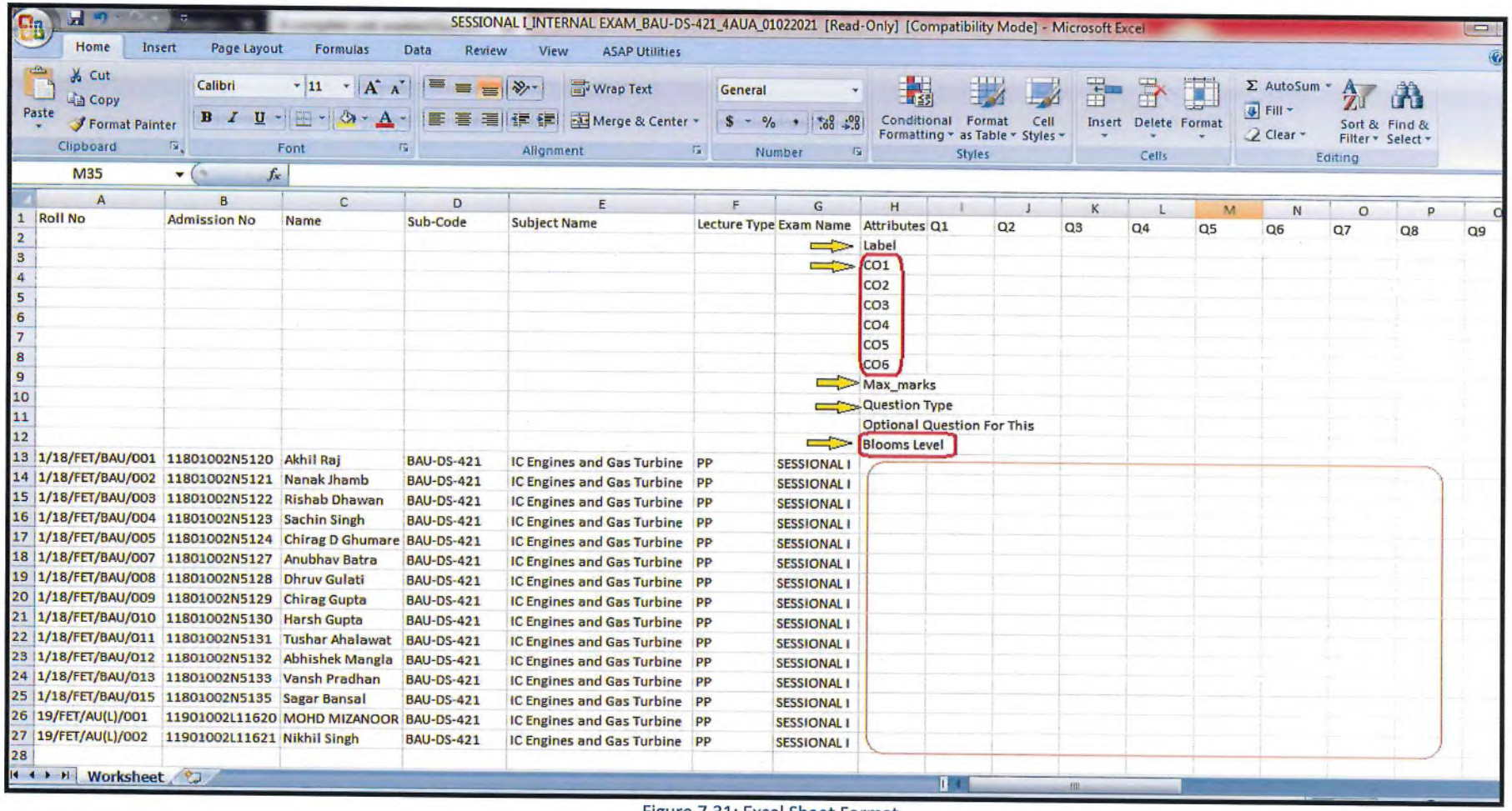
- Downloaded Excel format for adding marks with CO and Blooms level.
- Add question no. in 'Label', fill maximum marks and question type (Optional or mandatory)



Roll No	Admission No	Name	Sub-Code	Subject Name	Lecture Type	Exam Name	Attributes	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9
							Label									
							CO1									
							CO2									
							CO3									
							CO4									
							CO5									
							CO6									
							Max_marks									
							Question Type									
							Optional Question For This									
							Blooms Level									
1/18/FET/BAU/001	11801002N5120	Akhil Raj	BAU-DS-421	IC Engines and Gas Turbine	PP	SESSIONAL I										
1/18/FET/BAU/002	11801002N5121	Nanak Jhamb	BAU-DS-421	IC Engines and Gas Turbine	PP	SESSIONAL I										
1/18/FET/BAU/003	11801002N5122	Rishab Dhawan	BAU-DS-421	IC Engines and Gas Turbine	PP	SESSIONAL I										
1/18/FET/BAU/004	11801002N5123	Sachin Singh	BAU-DS-421	IC Engines and Gas Turbine	PP	SESSIONAL I										
1/18/FET/BAU/005	11801002N5124	Chirag D Ghumare	BAU-DS-421	IC Engines and Gas Turbine	PP	SESSIONAL I										
1/18/FET/BAU/007	11801002N5127	Anubhav Batra	BAU-DS-421	IC Engines and Gas Turbine	PP	SESSIONAL I										
1/18/FET/BAU/008	11801002N5128	Dhruv Gulati	BAU-DS-421	IC Engines and Gas Turbine	PP	SESSIONAL I										
1/18/FET/BAU/009	11801002N5129	Chirag Gupta	BAU-DS-421	IC Engines and Gas Turbine	PP	SESSIONAL I										
1/18/FET/BAU/010	11801002N5130	Harsh Gupta	BAU-DS-421	IC Engines and Gas Turbine	PP	SESSIONAL I										
1/18/FET/BAU/011	11801002N5131	Tushar Ahalawat	BAU-DS-421	IC Engines and Gas Turbine	PP	SESSIONAL I										
1/18/FET/BAU/012	11801002N5132	Abhishek Mangla	BAU-DS-421	IC Engines and Gas Turbine	PP	SESSIONAL I										
1/18/FET/BAU/013	11801002N5133	Vansh Pradhan	BAU-DS-421	IC Engines and Gas Turbine	PP	SESSIONAL I										
1/18/FET/BAU/015	11801002N5135	Sagar Bansal	BAU-DS-421	IC Engines and Gas Turbine	PP	SESSIONAL I										
19/FET/AU(L)/001	11901002L11620	MOHD MIZANOOR	BAU-DS-421	IC Engines and Gas Turbine	PP	SESSIONAL I										
19/FET/AU(L)/002	11901002L11621	Nikhil Singh	BAU-DS-421	IC Engines and Gas Turbine	PP	SESSIONAL I										

Figure 7.31: Excel Sheet Format

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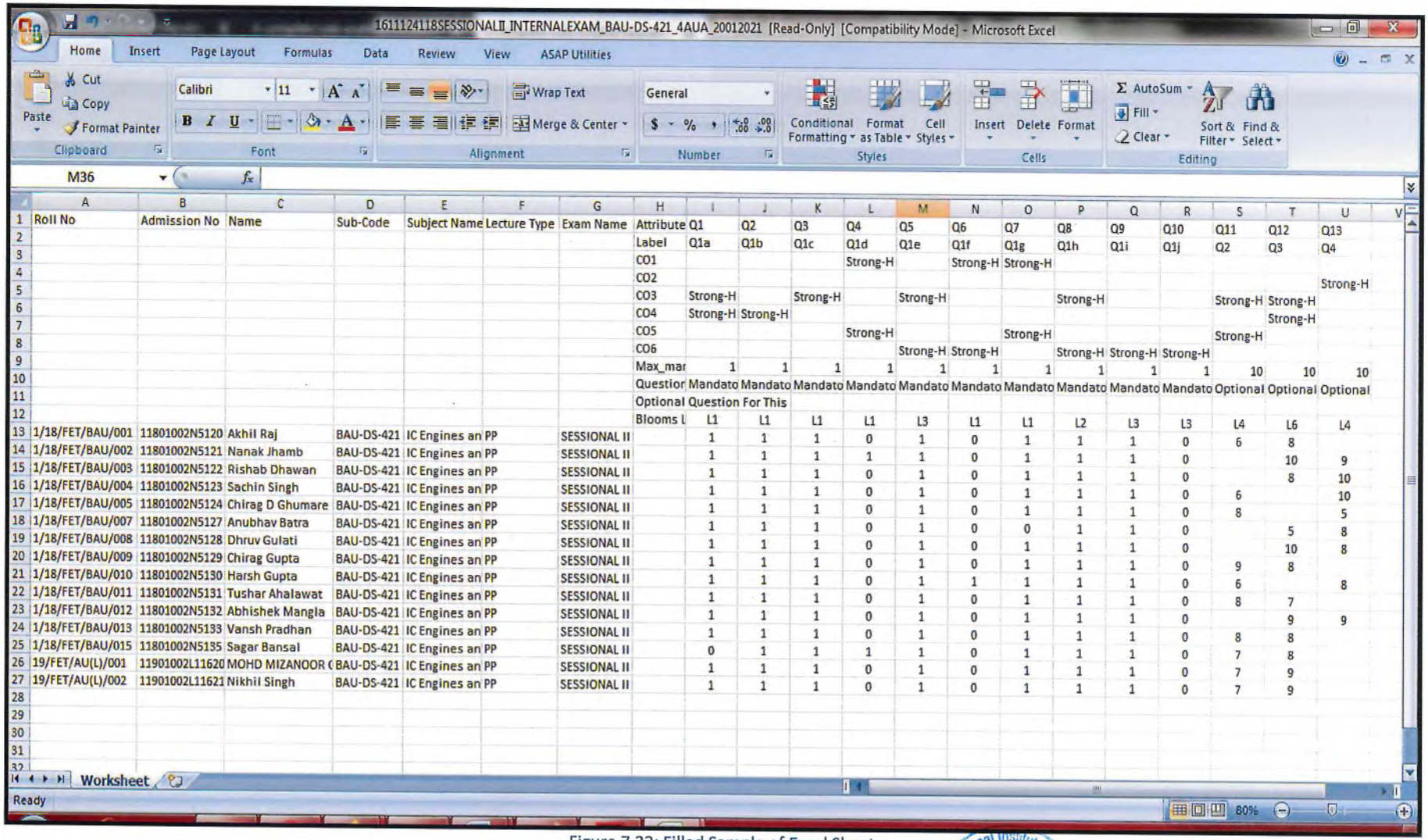
- Filled sample excel sheet as per CO mapping and other details.



1611124118SESSIONALII_INTERNALEXAM_BAU-DS-421_4AUA_20012021 [Read-Only] [Compatibility Mode] - Microsoft Excel

Home | Insert | Page Layout | Formulas | Data | Review | View | ASAP Utilities

M36

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
1	Roll No	Admission No	Name	Sub-Code	Subject Name	Lecture Type	Exam Name	Attribute	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13
2								Label	Q1a	Q1b	Q1c	Q1d	Q1e	Q1f	Q1g	Q1h	Q1i	Q1j	Q2	Q3	Q4
3								CO1				Strong-H		Strong-H	Strong-H						
4								CO2													Strong-H
5								CO3	Strong-H		Strong-H		Strong-H			Strong-H			Strong-H	Strong-H	
6								CO4	Strong-H	Strong-H										Strong-H	
7								CO5				Strong-H			Strong-H				Strong-H		
8								CO6					Strong-H	Strong-H		Strong-H	Strong-H	Strong-H			
9								Max_mar	1	1	1	1	1	1	1	1	1	1	10	10	10
10								Questior	Mandato	Mandato	Mandato	Mandato	Mandato	Mandato	Mandato	Mandato	Mandato	Mandato	Optional	Optional	Optional
11								Optional	Question For This												
12								Blooms L	L1	L1	L1	L1	L3	L1	L1	L2	L3	L3	L4	L6	L4
13	1/18/FET/BAU/001	11801002N5120	Akhil Raj	BAU-DS-421	IC Engines an	PP	SESSIONAL II		1	1	1	0	1	0	1	1	1	0	6	8	
14	1/18/FET/BAU/002	11801002N5121	Nanak Jhamb	BAU-DS-421	IC Engines an	PP	SESSIONAL II		1	1	1	1	1	0	1	1	1	0		10	9
15	1/18/FET/BAU/003	11801002N5122	Rishab Dhawan	BAU-DS-421	IC Engines an	PP	SESSIONAL II		1	1	1	0	1	0	1	1	1	0		8	10
16	1/18/FET/BAU/004	11801002N5123	Sachin Singh	BAU-DS-421	IC Engines an	PP	SESSIONAL II		1	1	1	0	1	0	1	1	1	0	6		10
17	1/18/FET/BAU/005	11801002N5124	Chirag D Ghumare	BAU-DS-421	IC Engines an	PP	SESSIONAL II		1	1	1	0	1	0	1	1	1	0	8		5
18	1/18/FET/BAU/007	11801002N5127	Anubhav Batra	BAU-DS-421	IC Engines an	PP	SESSIONAL II		1	1	1	0	1	0	0	1	1	0		5	8
19	1/18/FET/BAU/008	11801002N5128	Dhruv Gulati	BAU-DS-421	IC Engines an	PP	SESSIONAL II		1	1	1	0	1	0	1	1	1	0		10	8
20	1/18/FET/BAU/009	11801002N5129	Chirag Gupta	BAU-DS-421	IC Engines an	PP	SESSIONAL II		1	1	1	0	1	0	1	1	1	0	9	8	
21	1/18/FET/BAU/010	11801002N5130	Harsh Gupta	BAU-DS-421	IC Engines an	PP	SESSIONAL II		1	1	1	0	1	1	1	1	1	0	6		8
22	1/18/FET/BAU/011	11801002N5131	Tushar Ahalawat	BAU-DS-421	IC Engines an	PP	SESSIONAL II		1	1	1	0	1	0	1	1	1	0	8	7	
23	1/18/FET/BAU/012	11801002N5132	Abhishek Mangla	BAU-DS-421	IC Engines an	PP	SESSIONAL II		1	1	1	0	1	0	1	1	1	0		9	9
24	1/18/FET/BAU/013	11801002N5133	Vansh Pradhan	BAU-DS-421	IC Engines an	PP	SESSIONAL II		1	1	1	0	1	0	1	1	1	0	8	8	
25	1/18/FET/BAU/015	11801002N5135	Sagar Bansal	BAU-DS-421	IC Engines an	PP	SESSIONAL II		0	1	1	1	1	0	1	1	1	0	7	8	
26	19/FET/AU(L)/001	11901002L11620	MOHD MIZANOOR (	BAU-DS-421	IC Engines an	PP	SESSIONAL II		1	1	1	0	1	0	1	1	1	0	7	9	
27	19/FET/AU(L)/002	11901002L11621	Nikhil Singh	BAU-DS-421	IC Engines an	PP	SESSIONAL II		1	1	1	0	1	0	1	1	1	0	7	9	
28																					
29																					
30																					
31																					
32																					

Worksheet

Ready

80%

Figure 7.32: Filled Sample of Excel Sheet

- Fill 'AB' in all column in place of marks for the student who is absent during the exam.
- Browse the filled excel sheet and then import marks on the same page as shown in the Figure 5.14

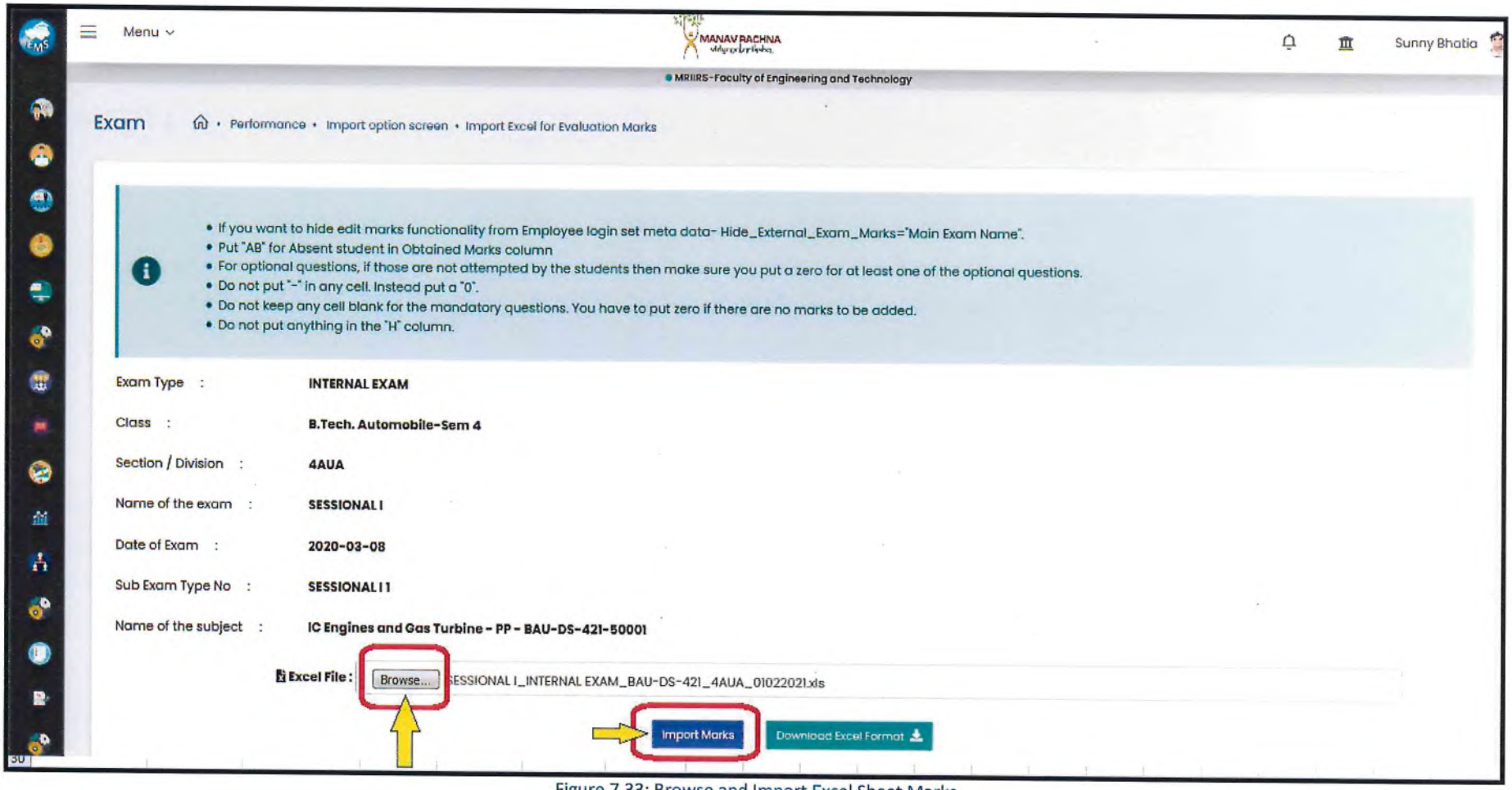


Figure 7.33: Browse and Import Excel Sheet Marks

- After importing the file, a page will open in which uploaded marks shown.

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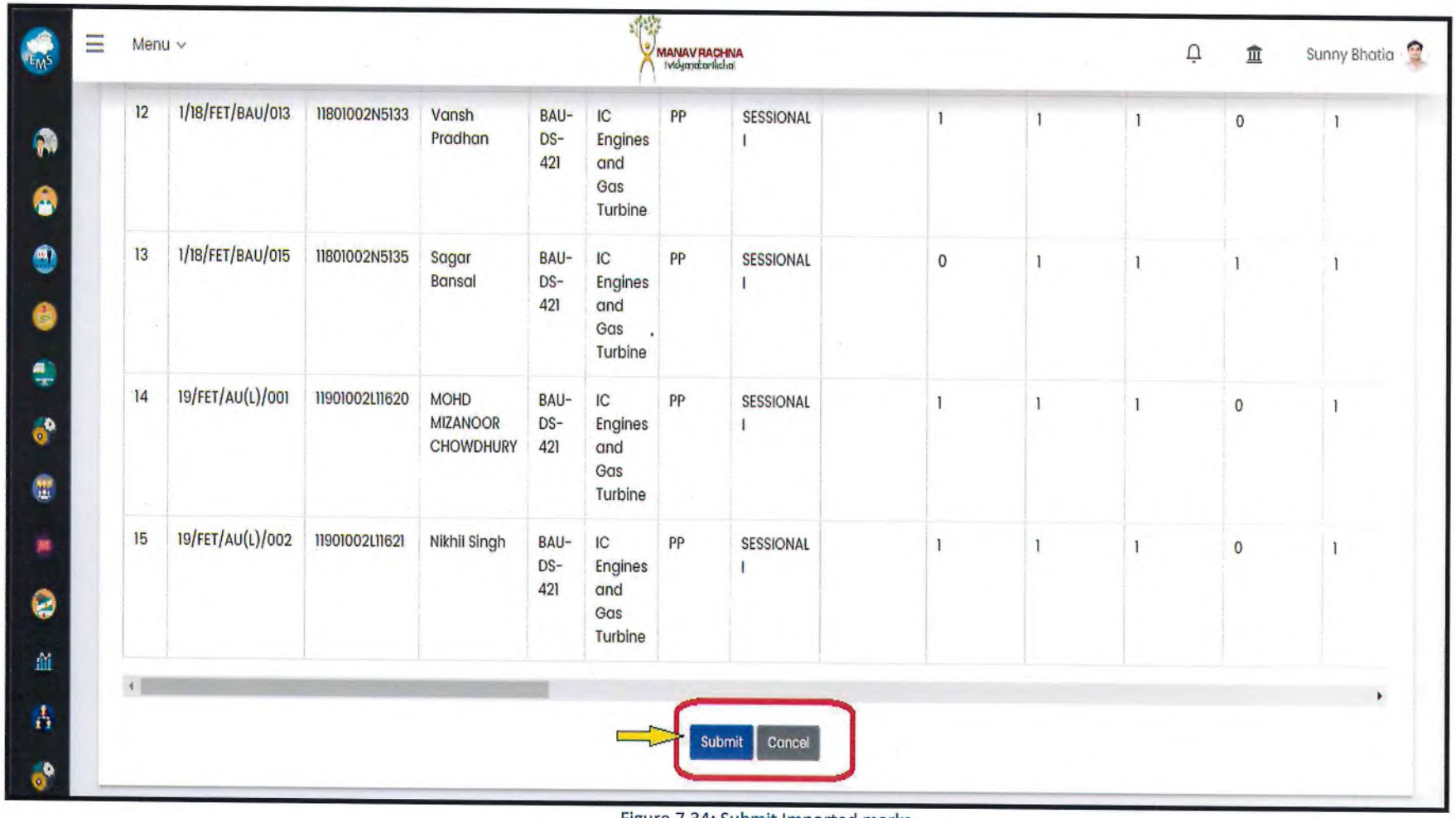
- At the end of this page ' Submit' tab is given to submit the marks after verification as shown in figure 5.15.



12	1/18/FET/BAU/013	11801002N5133	Vansh Pradhan	BAU-DS-421	IC Engines and Gas Turbine	PP	SESSIONAL I		1	1	1	0	1
13	1/18/FET/BAU/015	11801002N5135	Sagar Bansal	BAU-DS-421	IC Engines and Gas Turbine	PP	SESSIONAL I		0	1	1	1	1
14	19/FET/AU(L)/001	11901002L11620	MOHD MIZANOOR CHOWDHURY	BAU-DS-421	IC Engines and Gas Turbine	PP	SESSIONAL I		1	1	1	0	1
15	19/FET/AU(L)/002	11901002L11621	Nikhil Singh	BAU-DS-421	IC Engines and Gas Turbine	PP	SESSIONAL I		1	1	1	0	1

Figure 7.34: Submit Imported marks

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- Upload all the excel sheets by the similar metHoDs as per course marks bifurcation:-
    - Sessional-1
    - Sessional-2
    - Assignments
    - End Semester Examination
    - Rubrics
- View section is given to check all bifurcation parameters as shown in the figure 5.16.
- Select the academic year as shown in the red highlighted box and select session on the same page and then search for the subject taught by the concern faculty.
- Exam count and the view tabs are open for all the course taught by the faculty in a particular session as selected in the filters.
- Exam count shows the no. of schedules created by the faculty to add marks.
- All exam counts get opened by clicking on the 'view' as shown in the figure 5.16.

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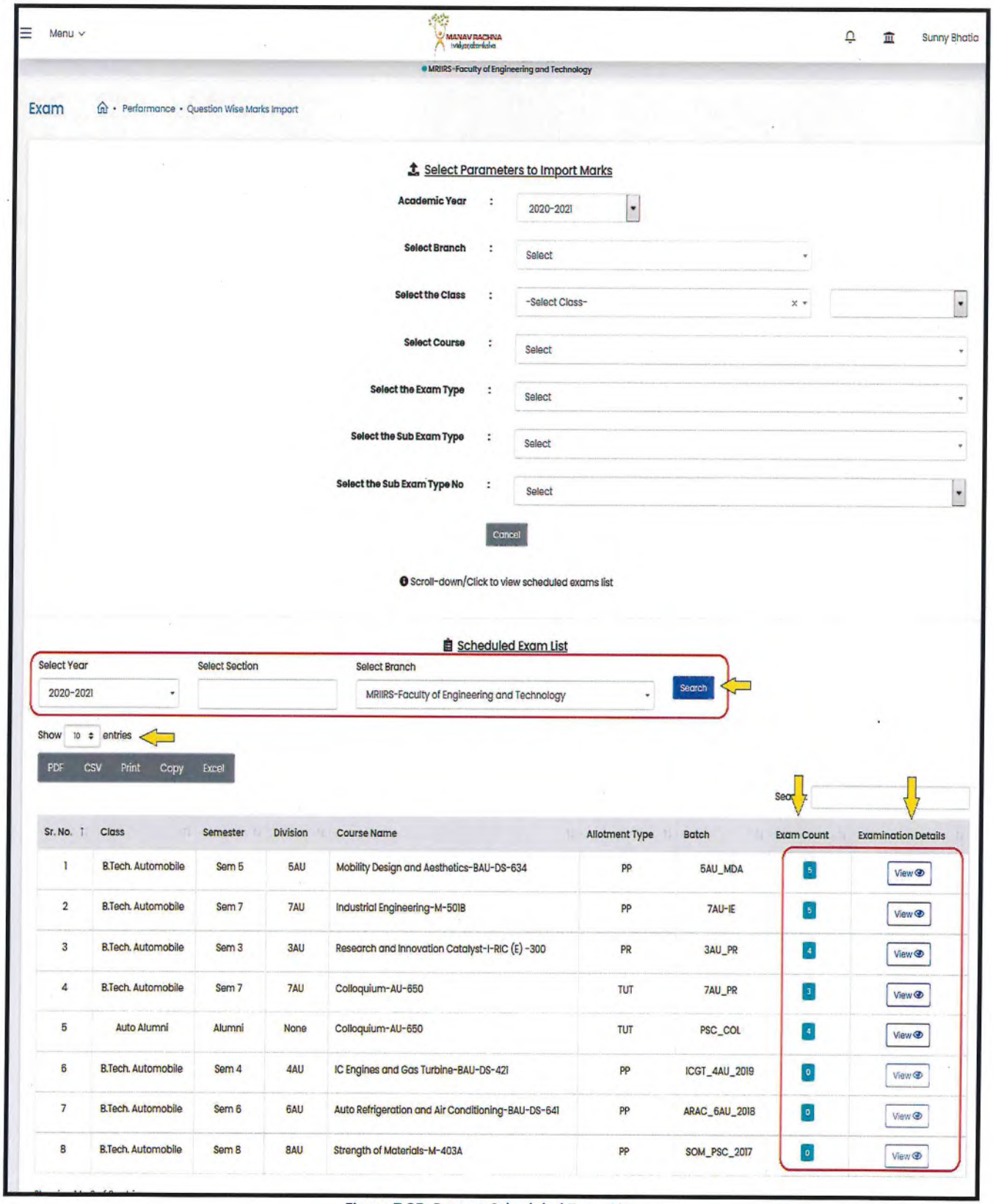

Figure 7.35: Browse Scheduled Exam List

- Click on 'view' to open all exam counts with examination details as shown in the figure:

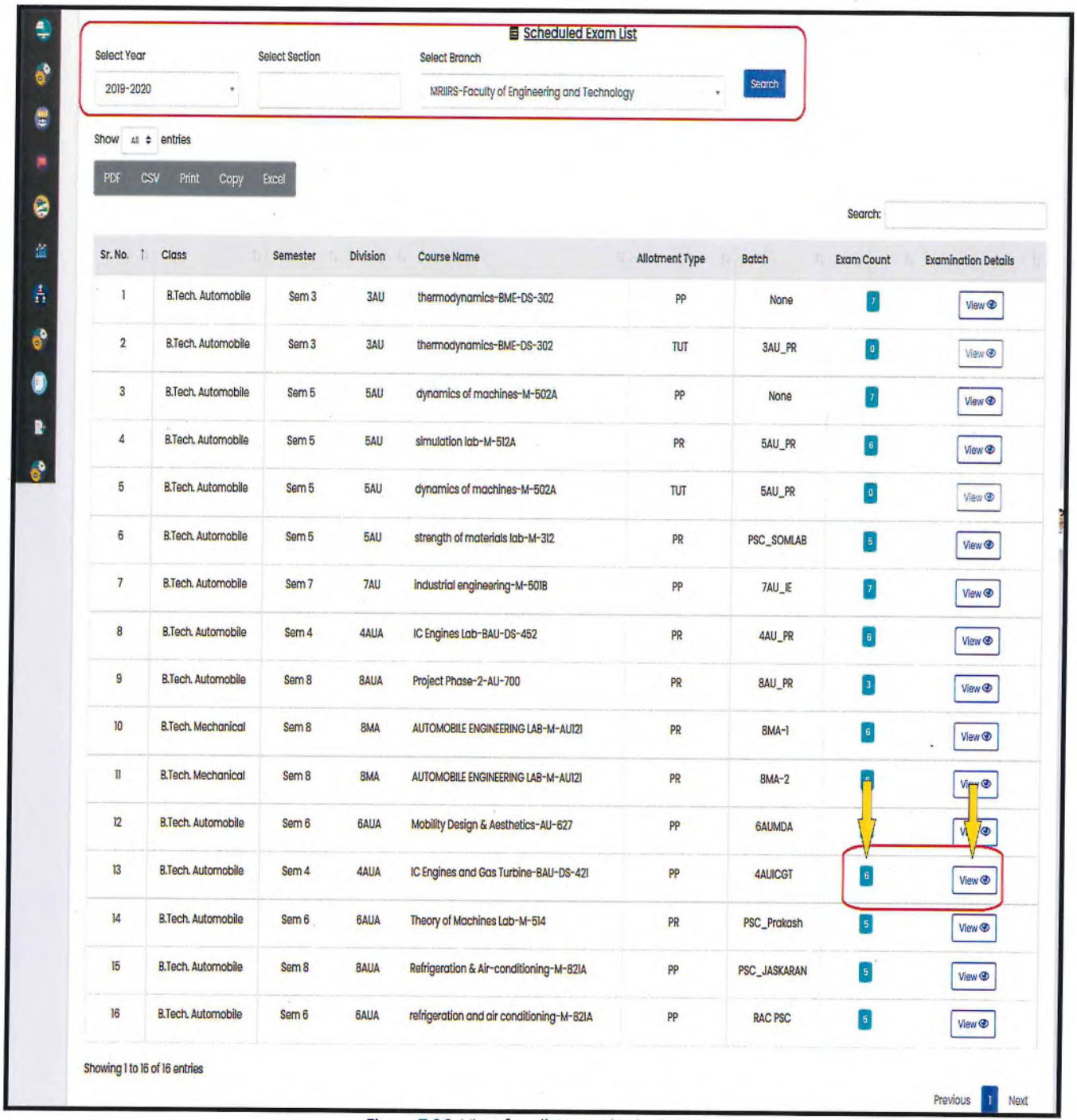

Figure 7.36: View for all Created Schedules

Vinay

- In Examination detail page, faculty can check all schedules, edit marks, delete marks and download the excel sheets.
- Faculty can freeze the marks after verification on the same page.

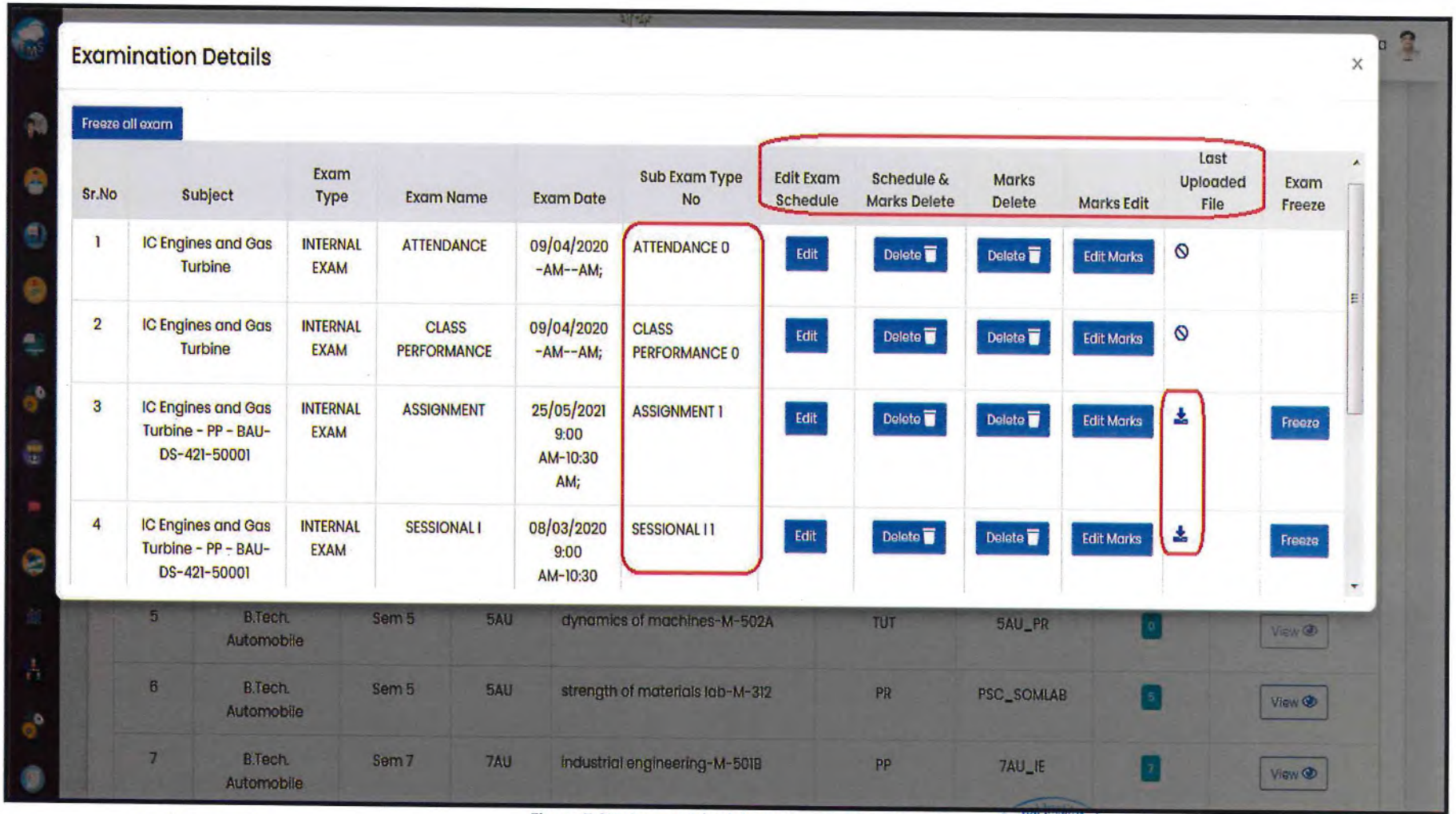

Figure 7.37: Course Schedules in Examination Details

- Again go to performance page and fill as the parameters as shown in the figure.
- Turn off the "on/off" tab for selecting all the exam counts. Then click on the 'Proceed to add marks.

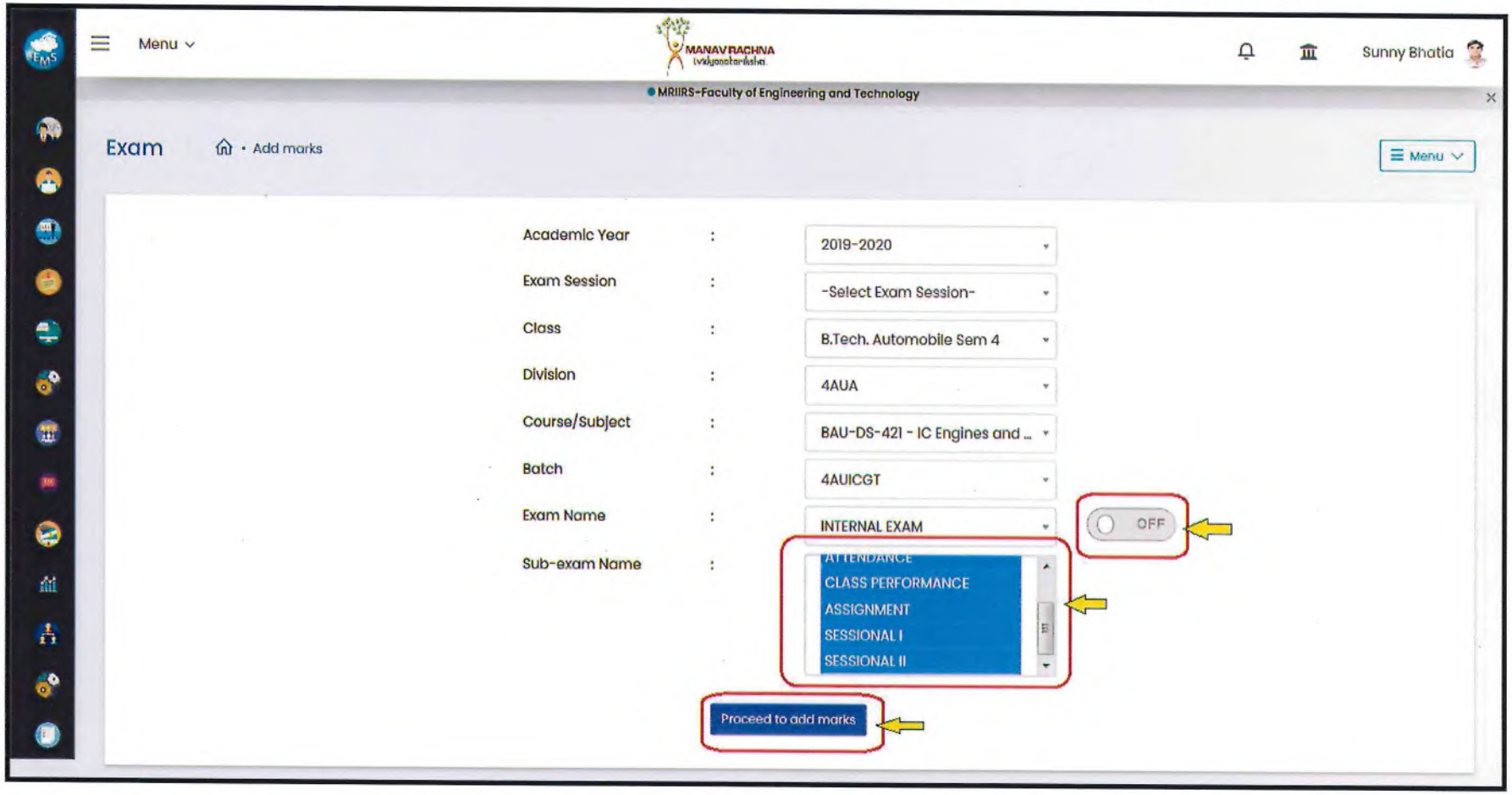

Figure 7.38: Open Uploaded marks in Performance Window

- All Exam parameters will get opened on the same page with marks and other details as per the sheets uploaded.
- Attendance, class performance, viva & file records marks are without CO mapping. Only schedule will get created for these parameters and marks may be added without downloading the excel sheet.

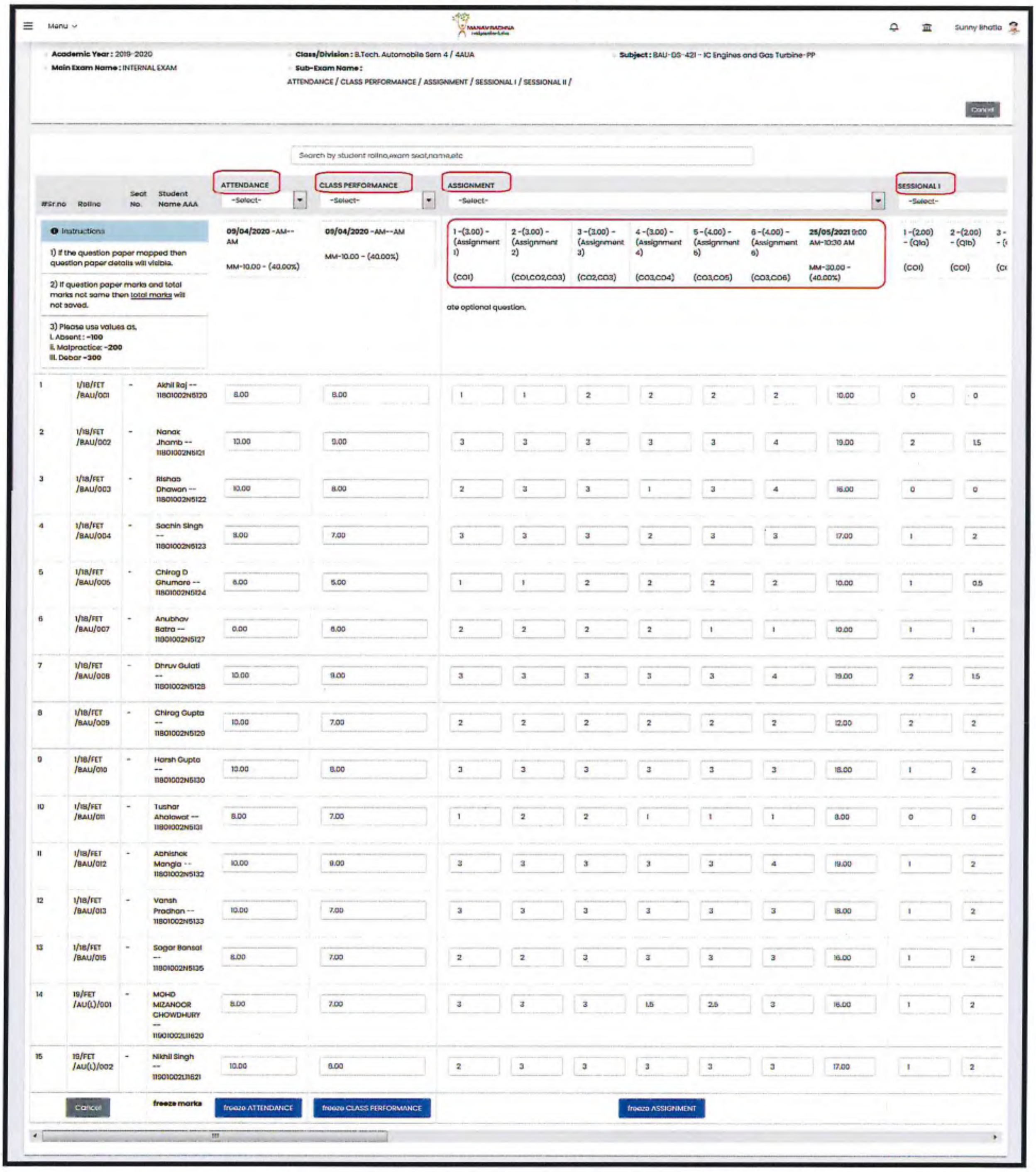

Figure 7.39: All Added Marks in Performance Add Marks Window

- Apply average formula, best of two/three, scale of zero from the dropdown as shown in the figure 5.21 below the exam parameter name.

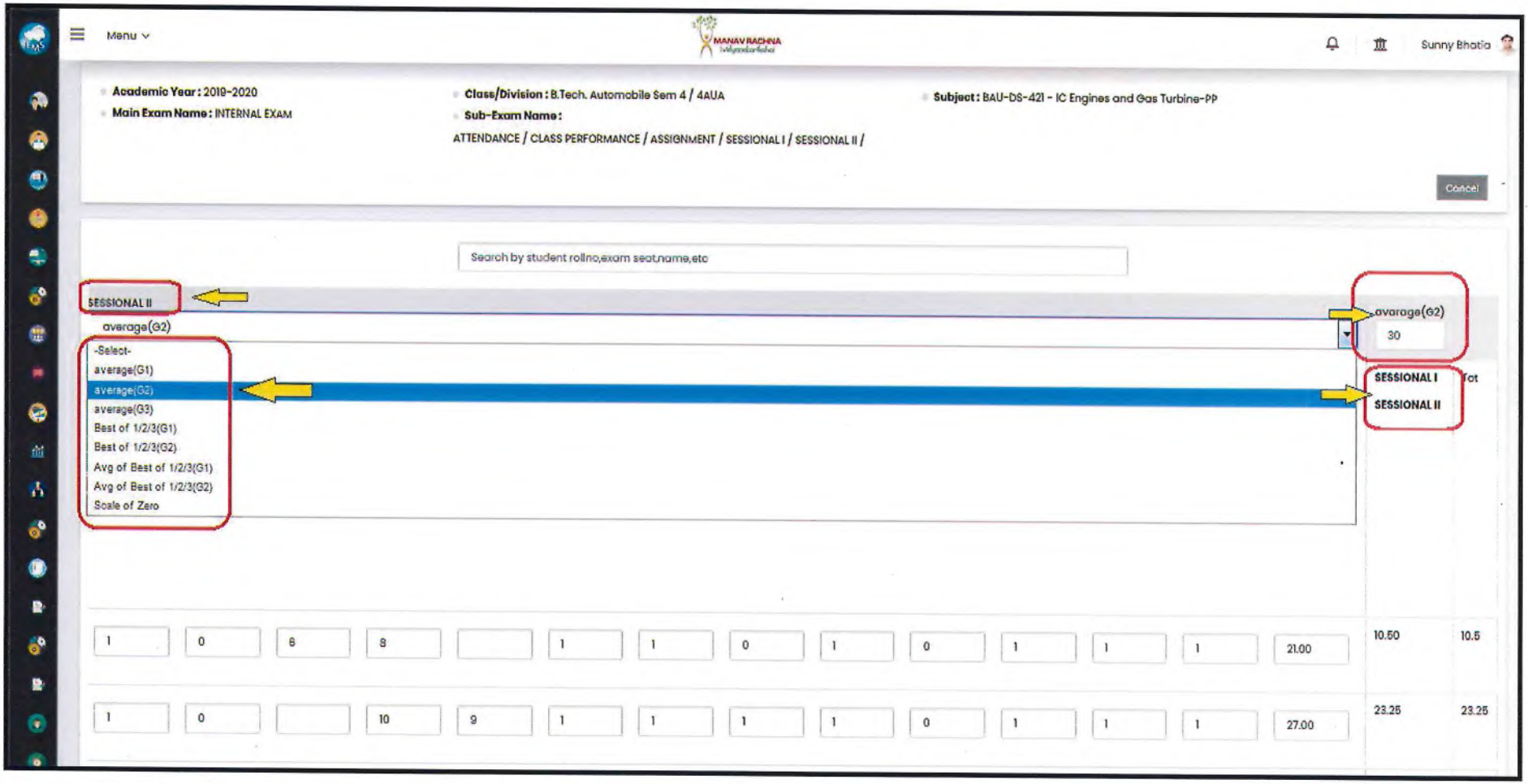

Figure 7.40: Apply Average formula, Best of 2/3 or scale of zero

7.6 Direct Attainment of POs/PSOs:

The attainment of COs for various courses taught during the Academic Year, which are mapped with POs and PSOs of the department shall contribute towards the direct PO and PSO attainment through as shown in the figure 5.22.

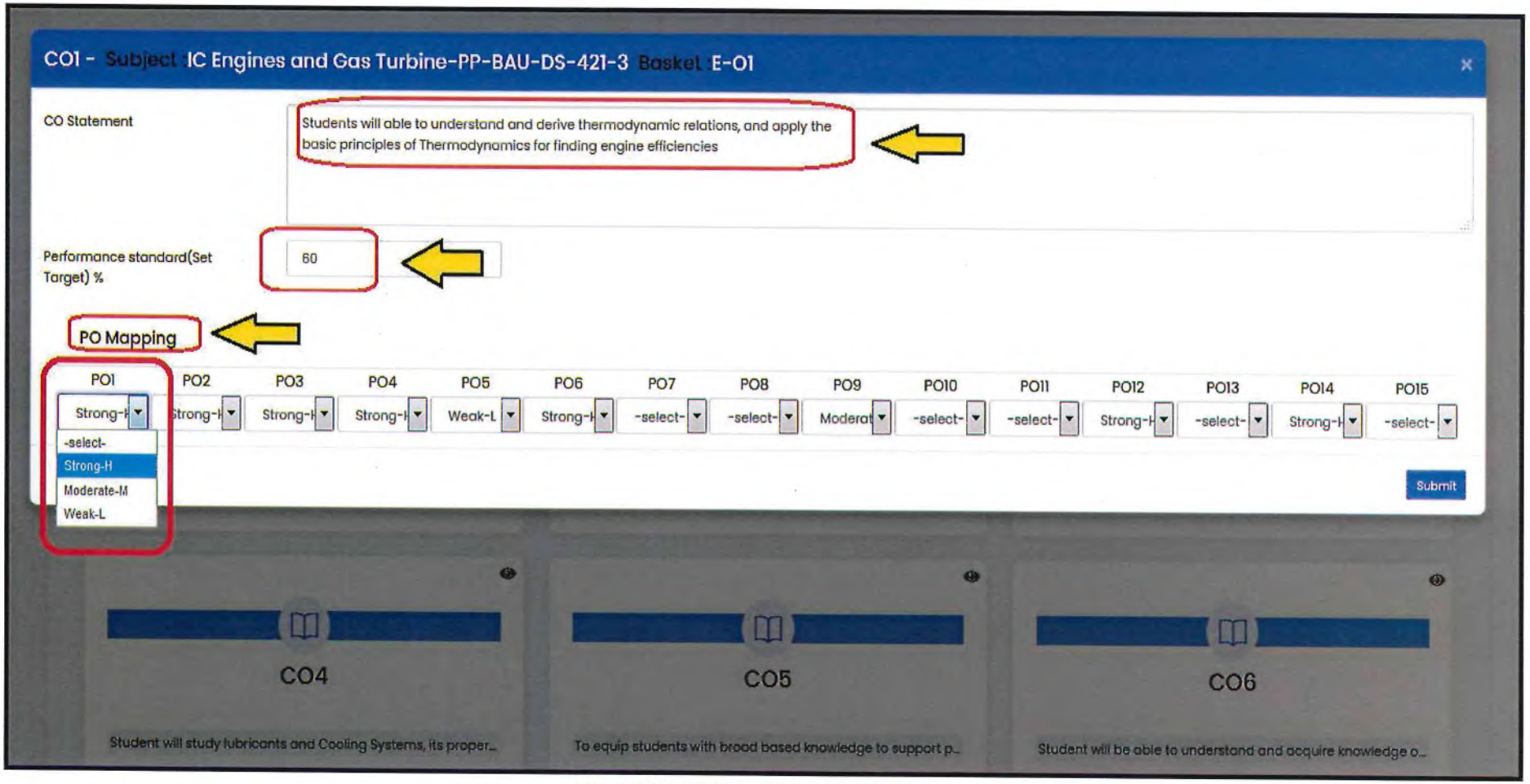

Figure 7.41: Mapping of COs with POs/PSOs

7.7 Indirect Attainment of COs and POs/PSOs: -

The weightage for direct and indirect attainment of COs and POs/PSOs shall be fixed as 80% and 20%, respectively. Indirect tools include the Course Exit Survey for attainment of COs and Program Exit and Alumni Survey for attainment of POs/PSOs.

7.7.1 Indirect COs attainment (Course Exit Survey)
7.7.2 Indirect POs/PSOs Attainment (Program Exit and Alumni Survey)

7.7.1 Indirect attainment of COs (Course Exit Survey):-

For computation of indirect CO attainment, students shall fill the course exit survey at the end of each course. The weighted average shall be computed to get the indirect CO attainment.

- Open the setting window for the course exit survey and allow the respective course and students to fill the survey at the end of each course.
- Open Setting page from the home screen:

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Figure 7.42: Setting on Home Screen

- Select the feedback setting for turn setting, course allow and student allow for the feedback.

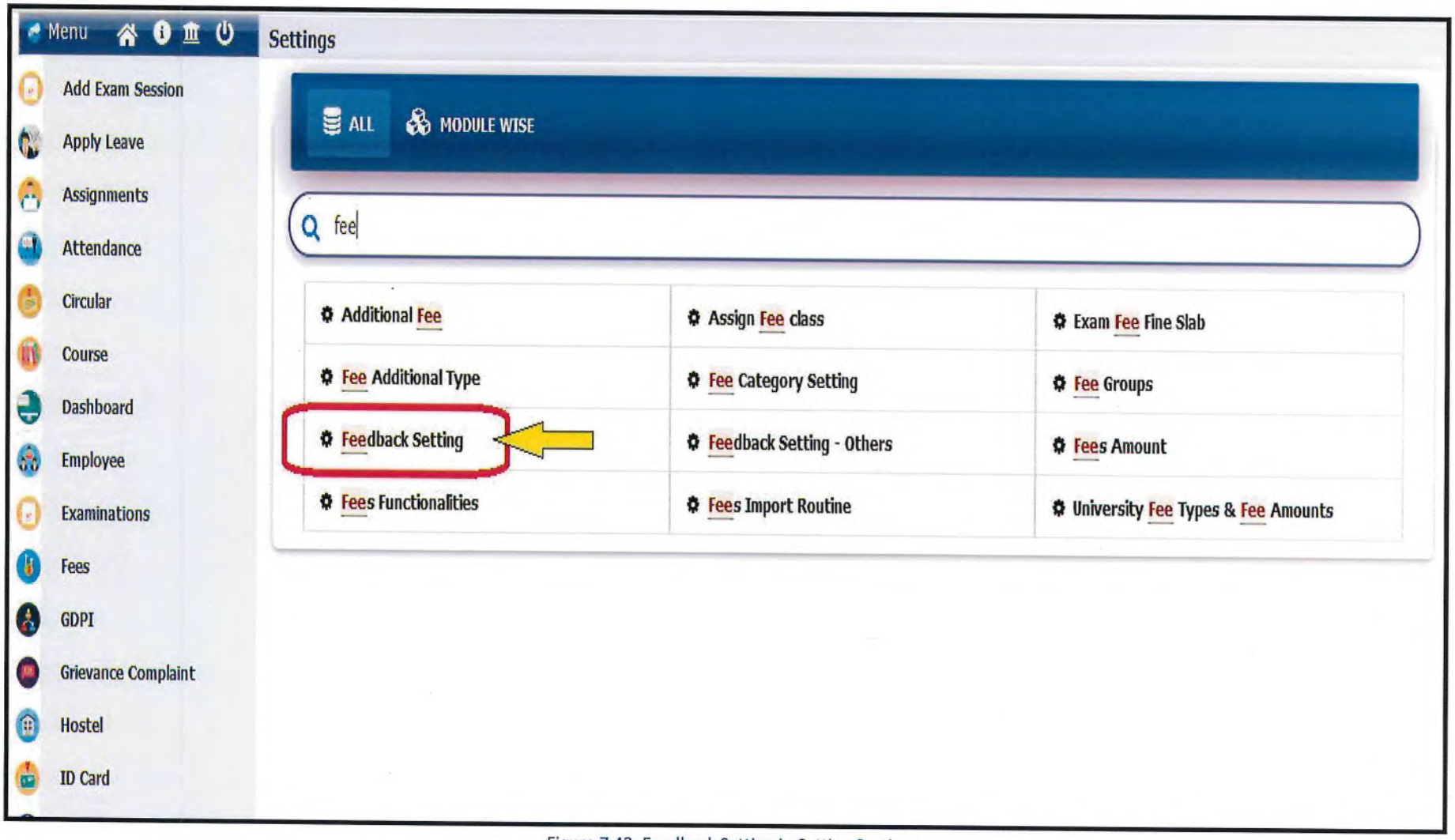

Figure 7.43: Feedback Setting in Setting Section

- Open Feedback turn setting for generating the feedback for the particular class and program.
- Settings of all three activities is completed at Central EMS team's end
    - Feedback Turn Setting
    - Course Allowed for Feedback
    - Student Allowed for the Feedback

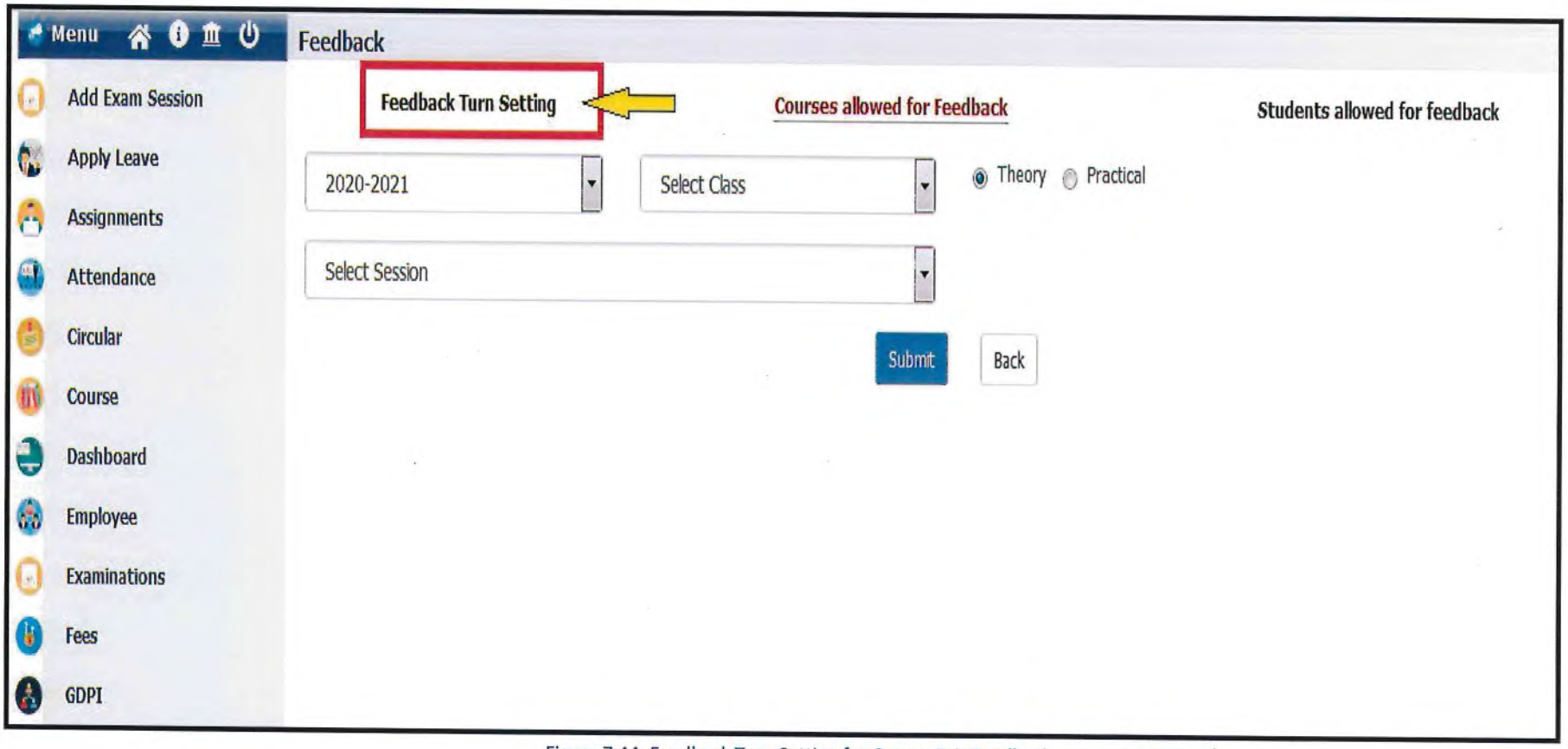

Figure 7.44: Feedback Turn Setting for Course Exit Feedback

- Fill all the parameters for feedback setting and select attendance above which student will give their feedback.
- Select **turn 3** for the course exit feedback and set turn for the generating feedback.

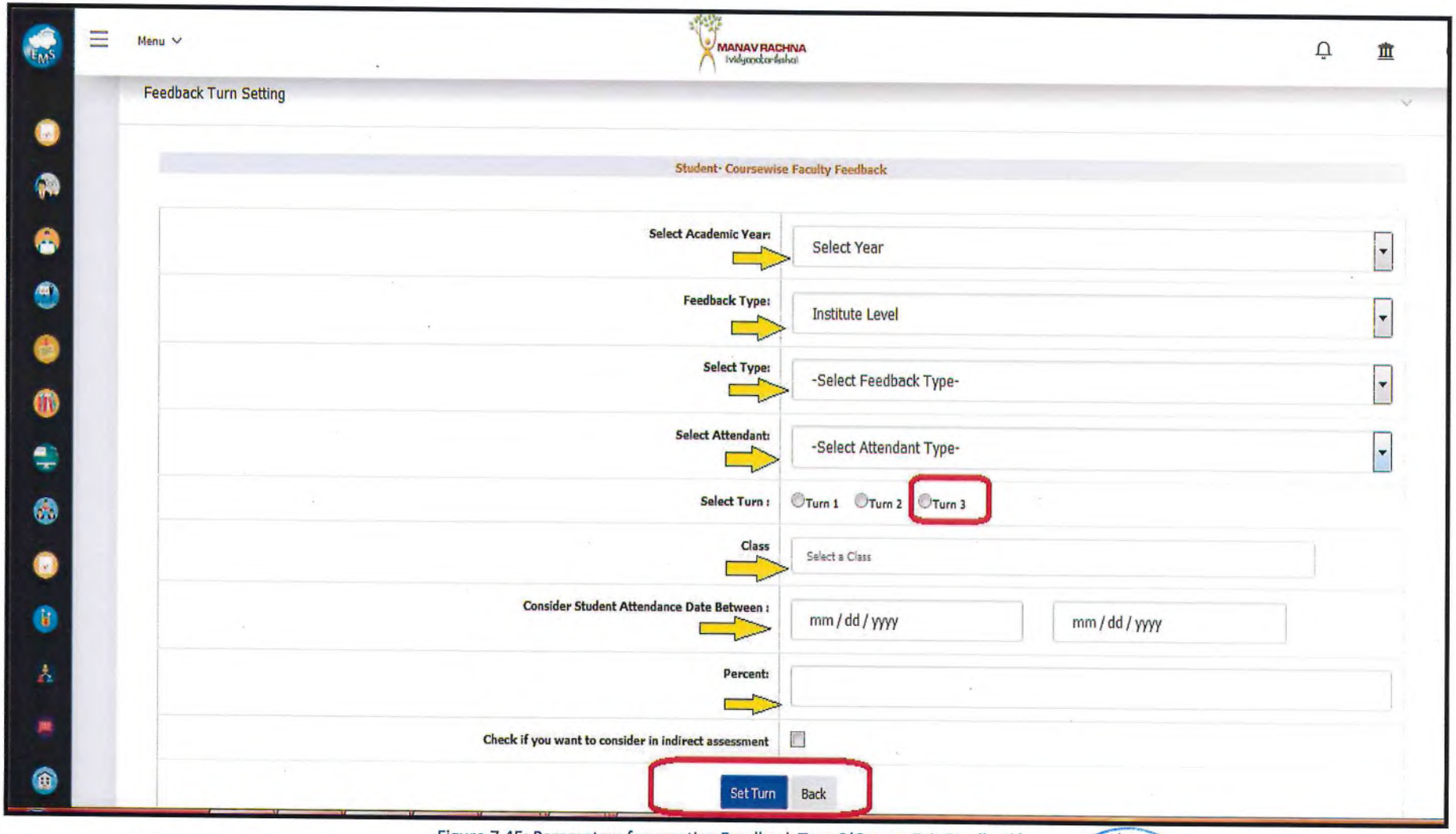

Figure 7.45: Parameters for creating Feedback Turn 3(Course Exit Feedback)

- After setting the turn, next step is to select the courses for which student will give their feedback:.

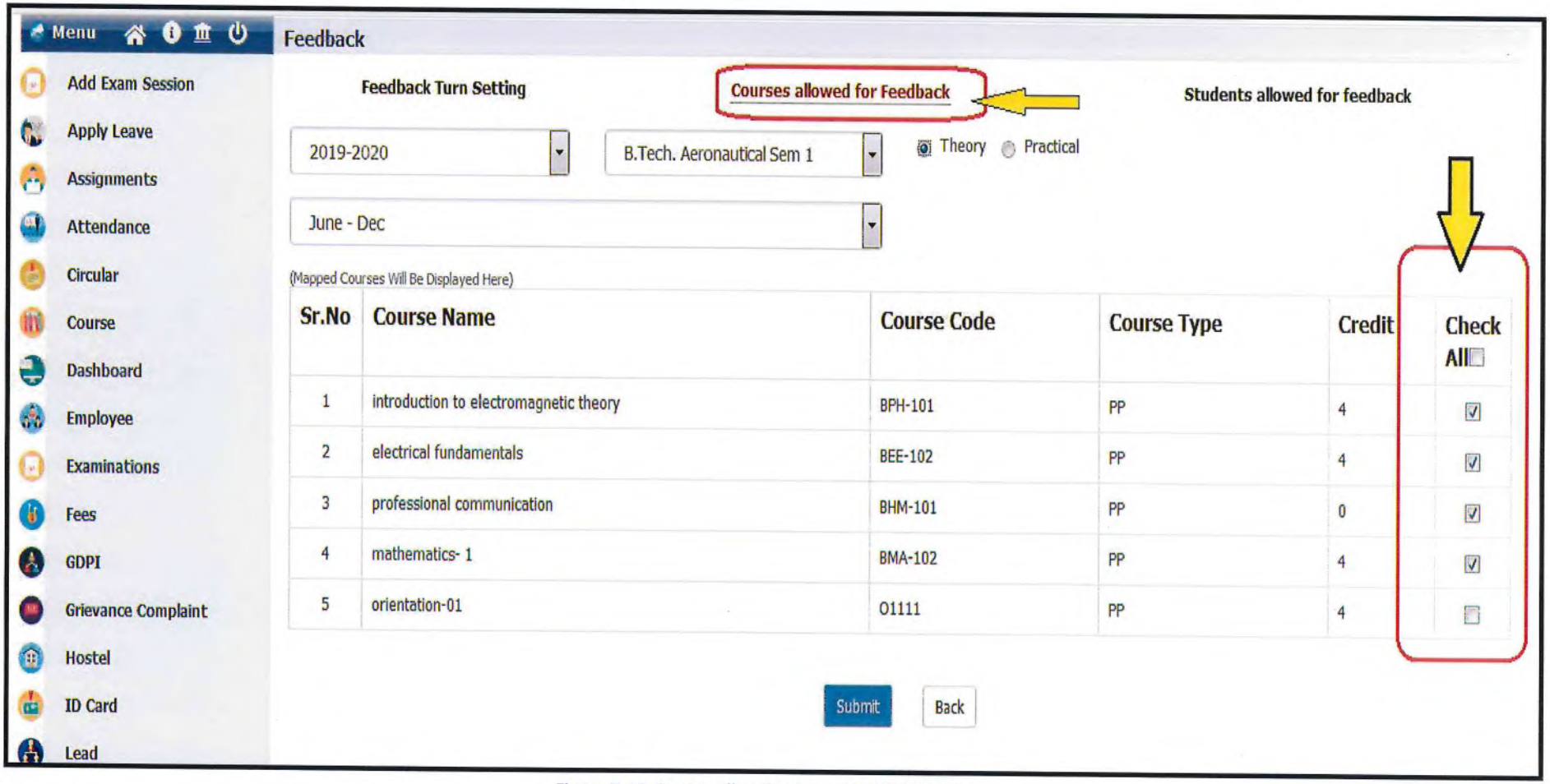

Figure 7.46: Course Allow for Course Exit Feedback

- Last step is to allow student for the feedback so that the faculty will inform students to give their valuable feedback with respect to the courses taught in the semester.

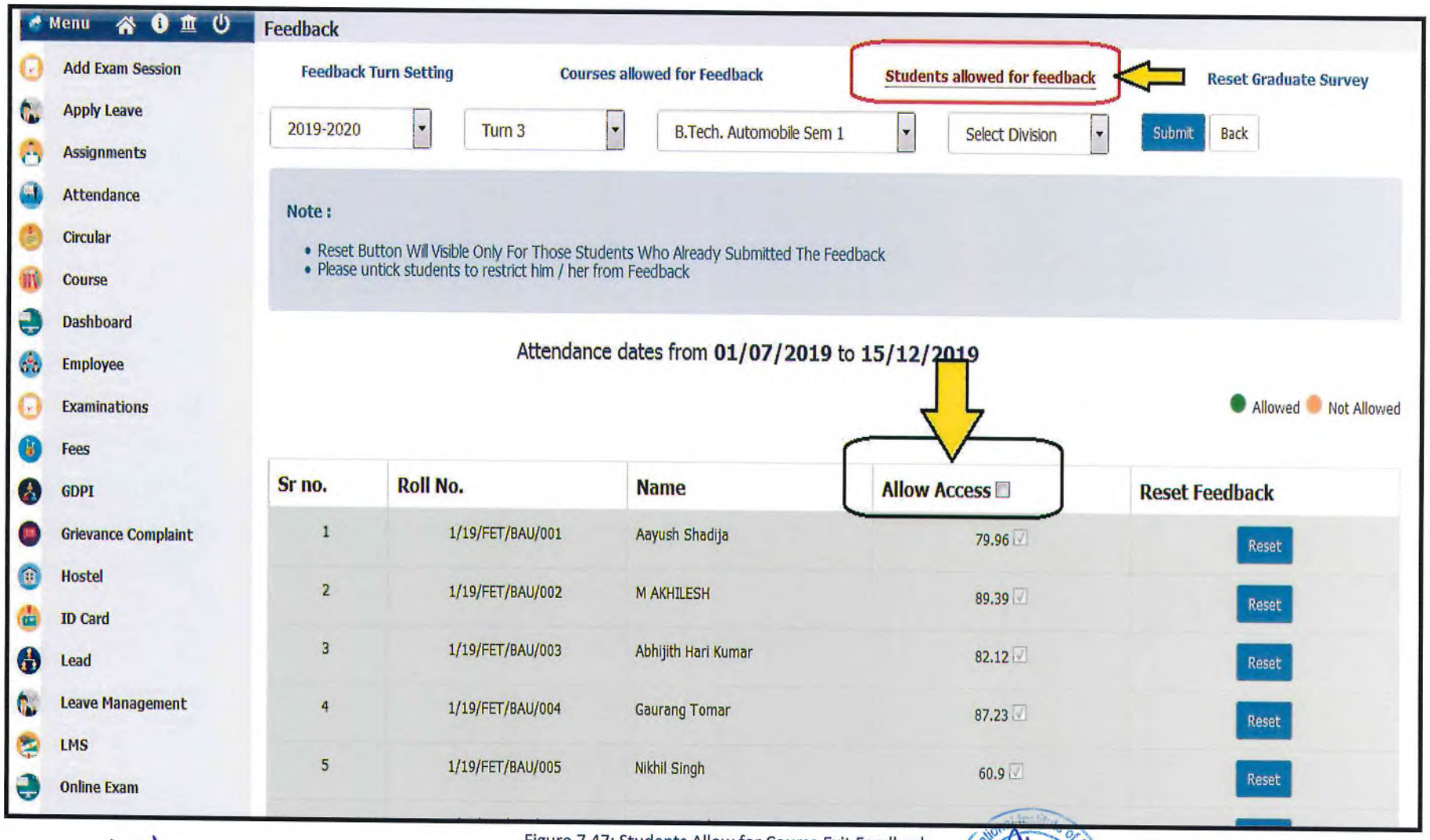

Figure 7.47: Students Allow for Course Exit Feedback

- Now students may provide the course exit feedback by opening the feedback window from the home screen as shown in figure

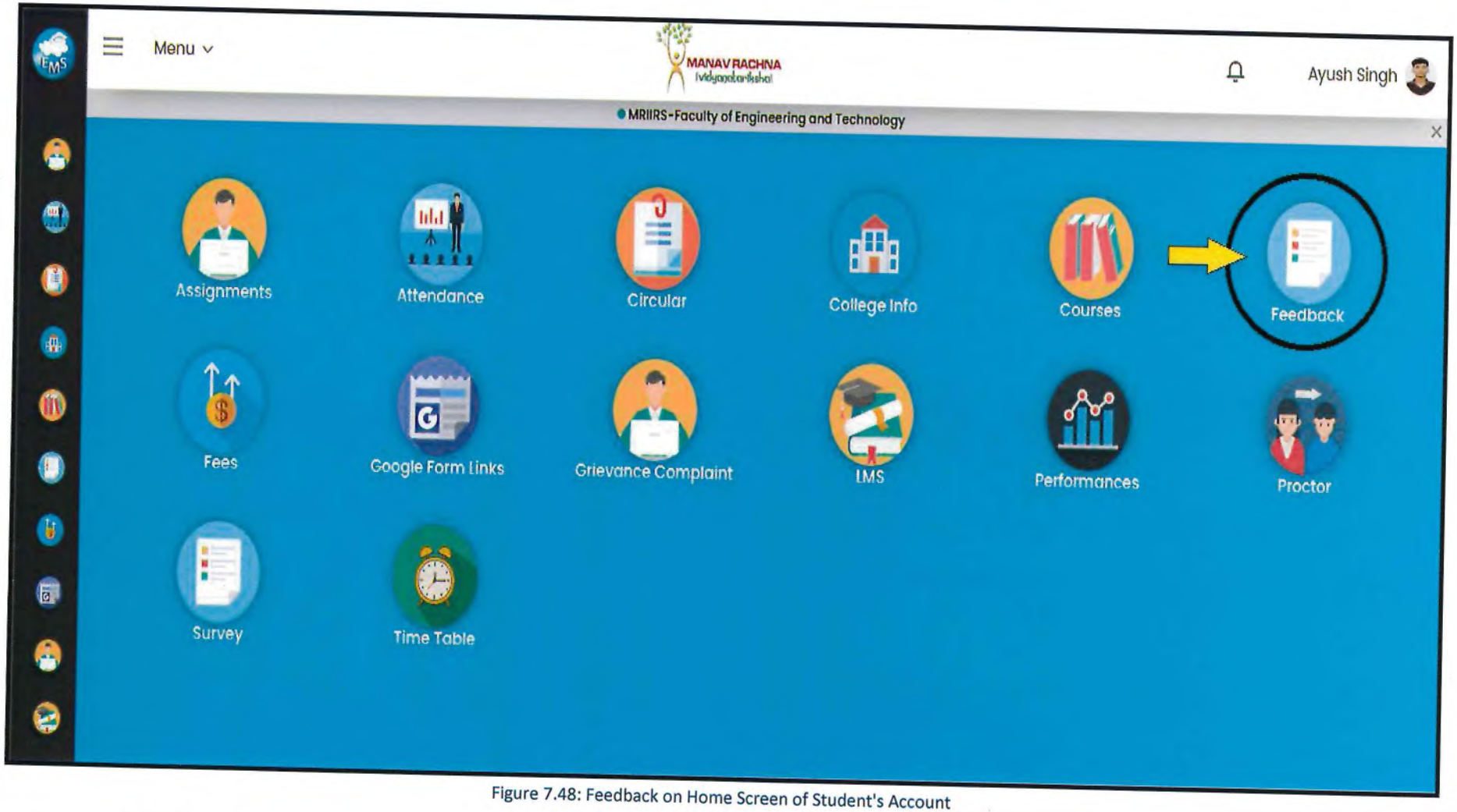

Figure 7.48: Feedback on Home Screen of Student's Account

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- Students need to select the AY first followed by the semester for filling the course exit survey:

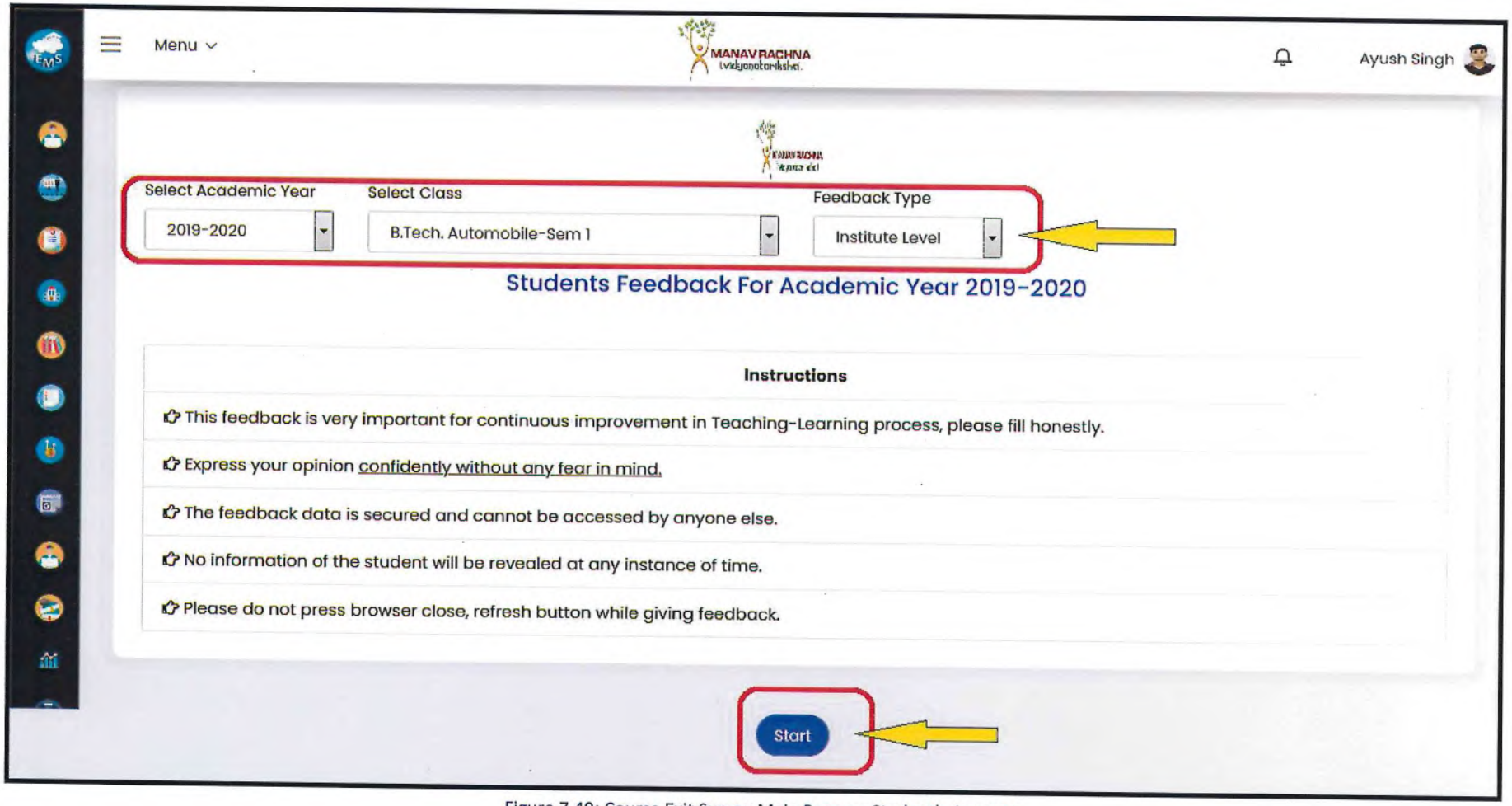

Figure 7.49: Course Exit Survey Main Page on Student's Account

- Students rate their understanding of the course in terms of defined parameters visible with five star rating as a questionnaire to students and he/she will give their feedback. Student will select the next subject by clicking on 'Next'.

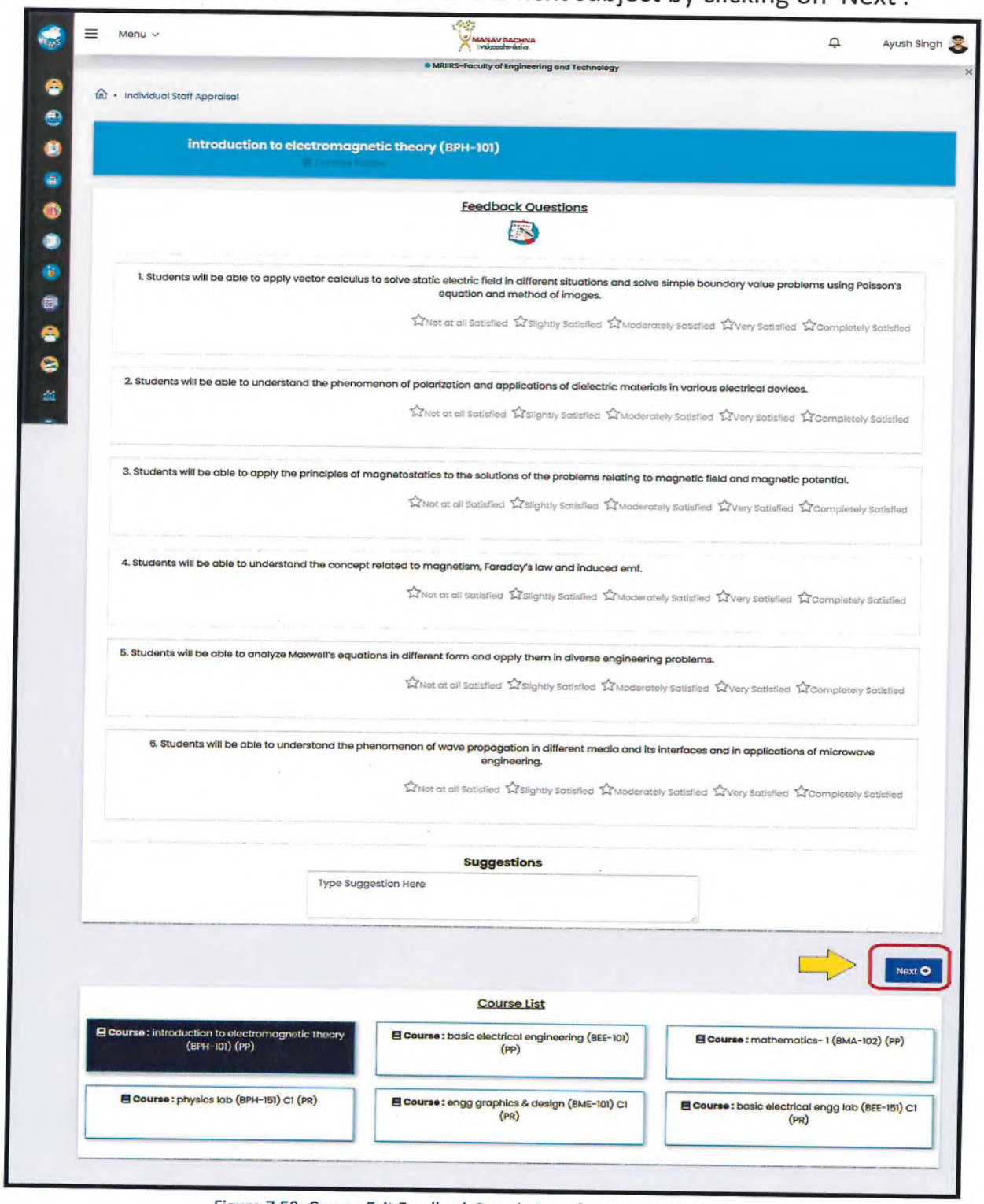

Figure 7.50: Course Exit Feedback Sample Page from Student's Account

7.7.2 Indirect Attainment of POs/PSOs (Program Exit and Alumni Survey):

Both direct and indirect assessment tools shall be used for data collation. The weightage for direct and indirect metHoDs is fixed as 80% and 20%, respectively. Direct tools include course outcome percentage. Indirect tools include 50% weightage for program exit survey and 50% weightage for alumni survey.

Before conducting the Program Exit and Alumni Survey, indirect questions related to the surveys are mapped with the POs and PSOs. Mapping rights are provided at the Head of the Department end or at the EMS coordinator end of the department, this is done from the CO-PO Setup in EMS.

Figure 7.51: Setting from Home Screen

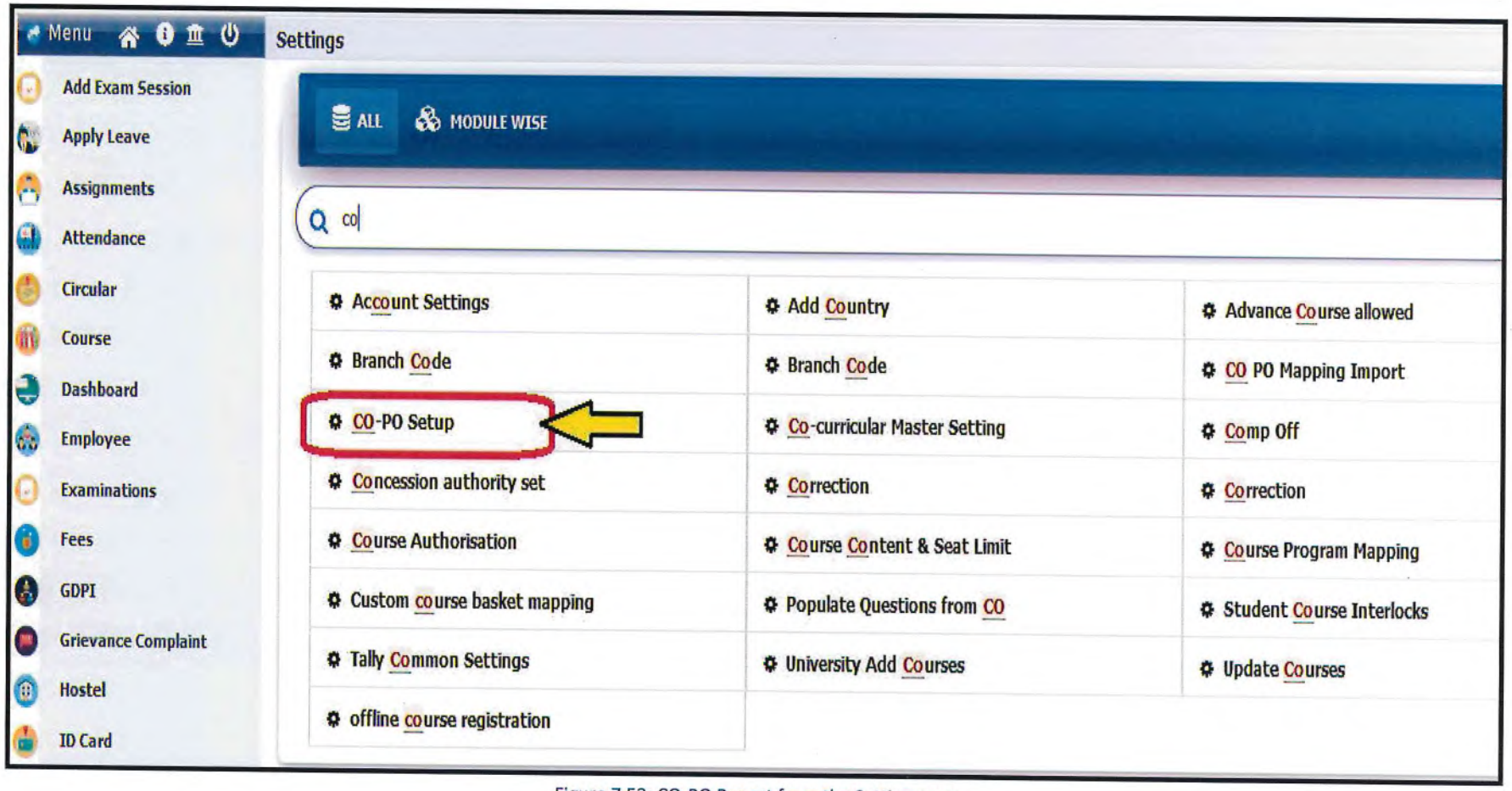

Figure 7.52: CO-PO Report from the Setting page

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- Open the 'Question to PO mapping' and map the entire question with respect to program POs/PSOs.
- Both indirect survey (**Program exit survey indirect and Alumni survey indirect**) will be mapped with POs/PSOs.

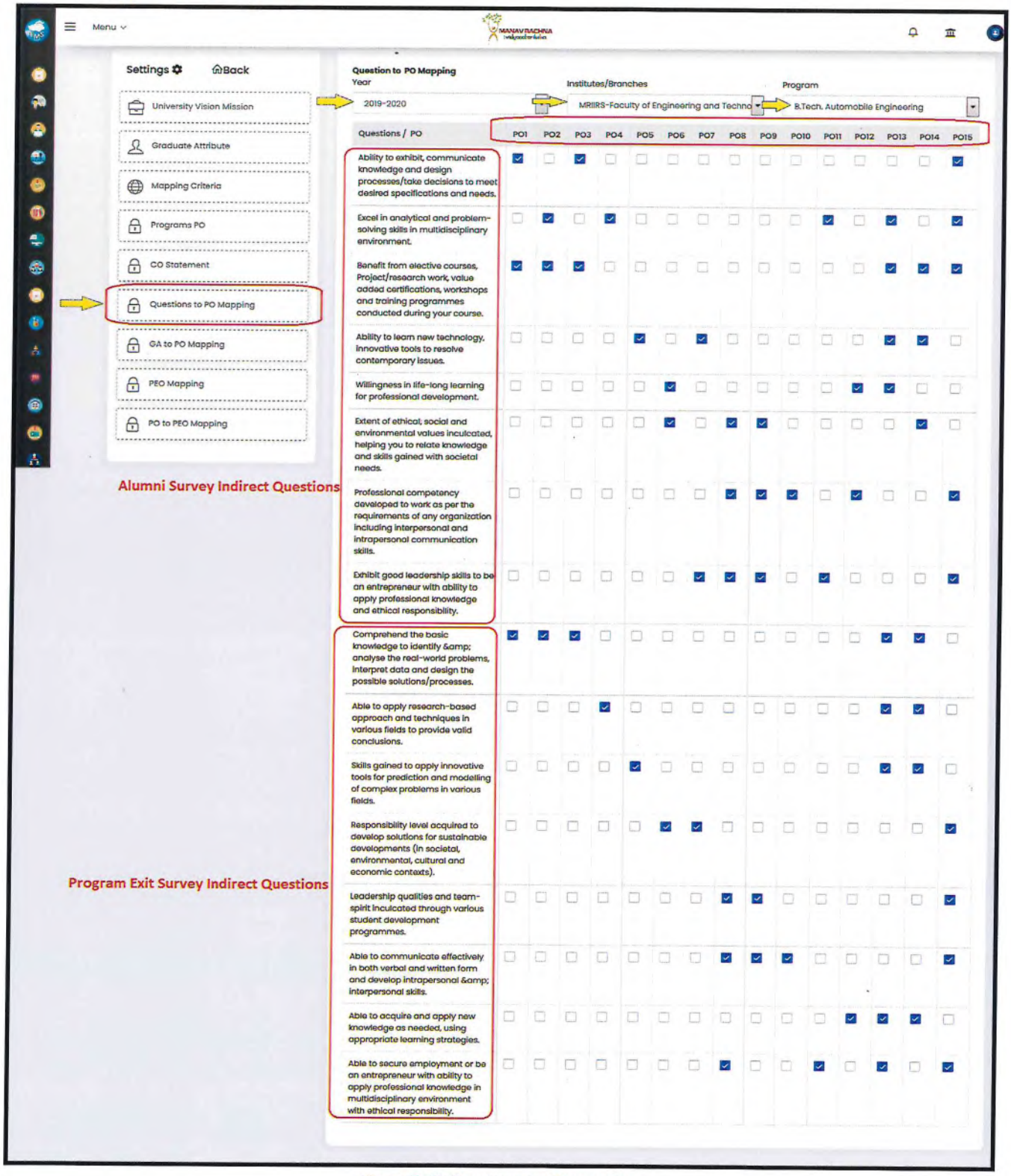

Figure 7.53: Questions to PO mapping

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A. Program Exit Survey (Indirect):

A program exit survey is conducted after the completion of the respective programme, which helps in providing the valuable inputs to assess what should be improved, modified, or remain intact.

Program Exit Survey Further divided into two parts:-

(a) Program Exit Survey- Indirect (Parameters mapped with POs/PSOs)

(b) Program Exit Survey- Generic

Once parameter setting for the program exit survey is done and students shall be able to fill the program exit survey by opening the survey page from the home screen of his/her account as shown in the figure.

Figure 7.54: Program Exit Survey on Home Screen of Student's Account

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- Student will select the academic year and semester and can start filling the Program Exit Survey Indirect by clicking on the "Begin" button

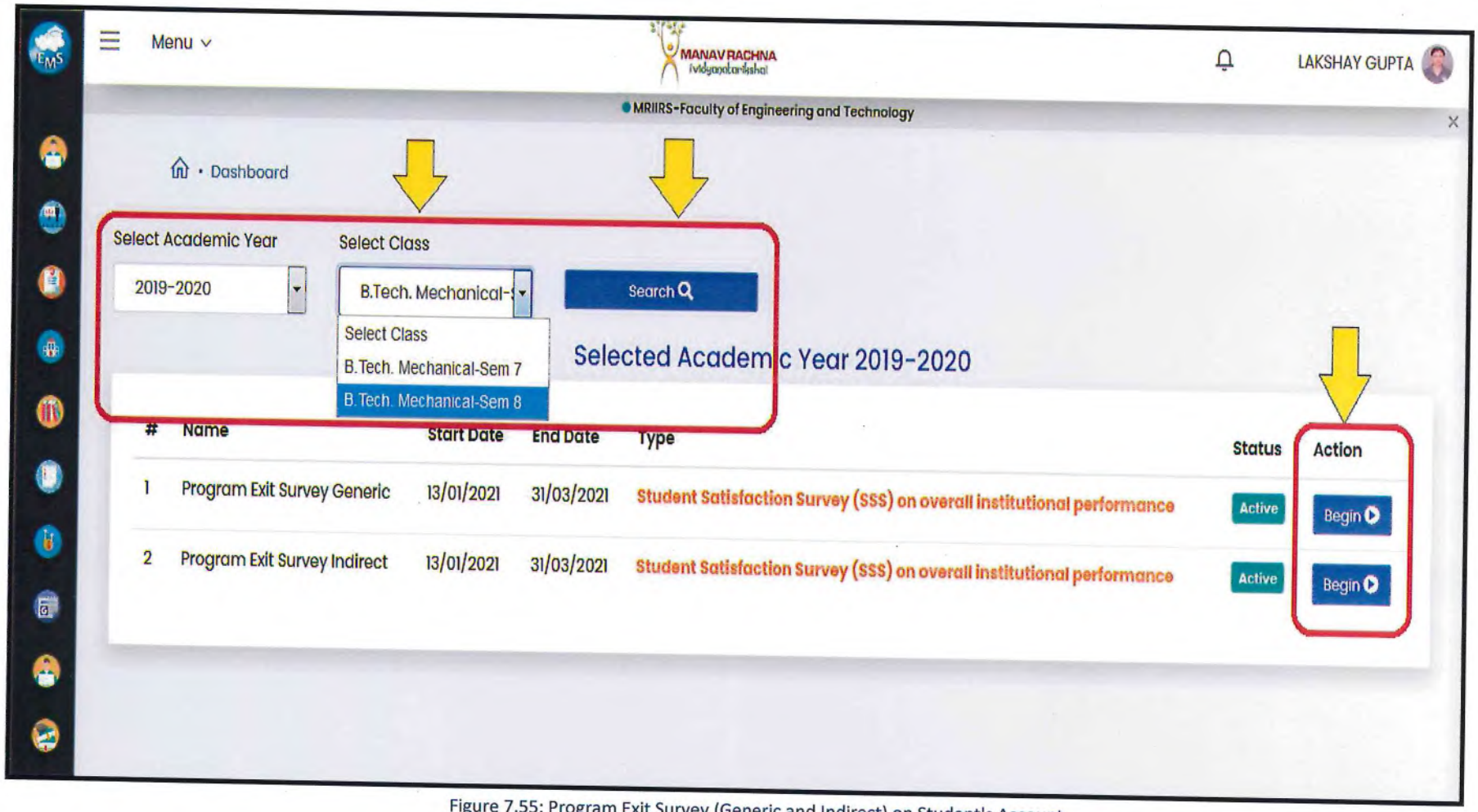

Figure 7.55: Program Exit Survey (Generic and Indirect) on Student's Account

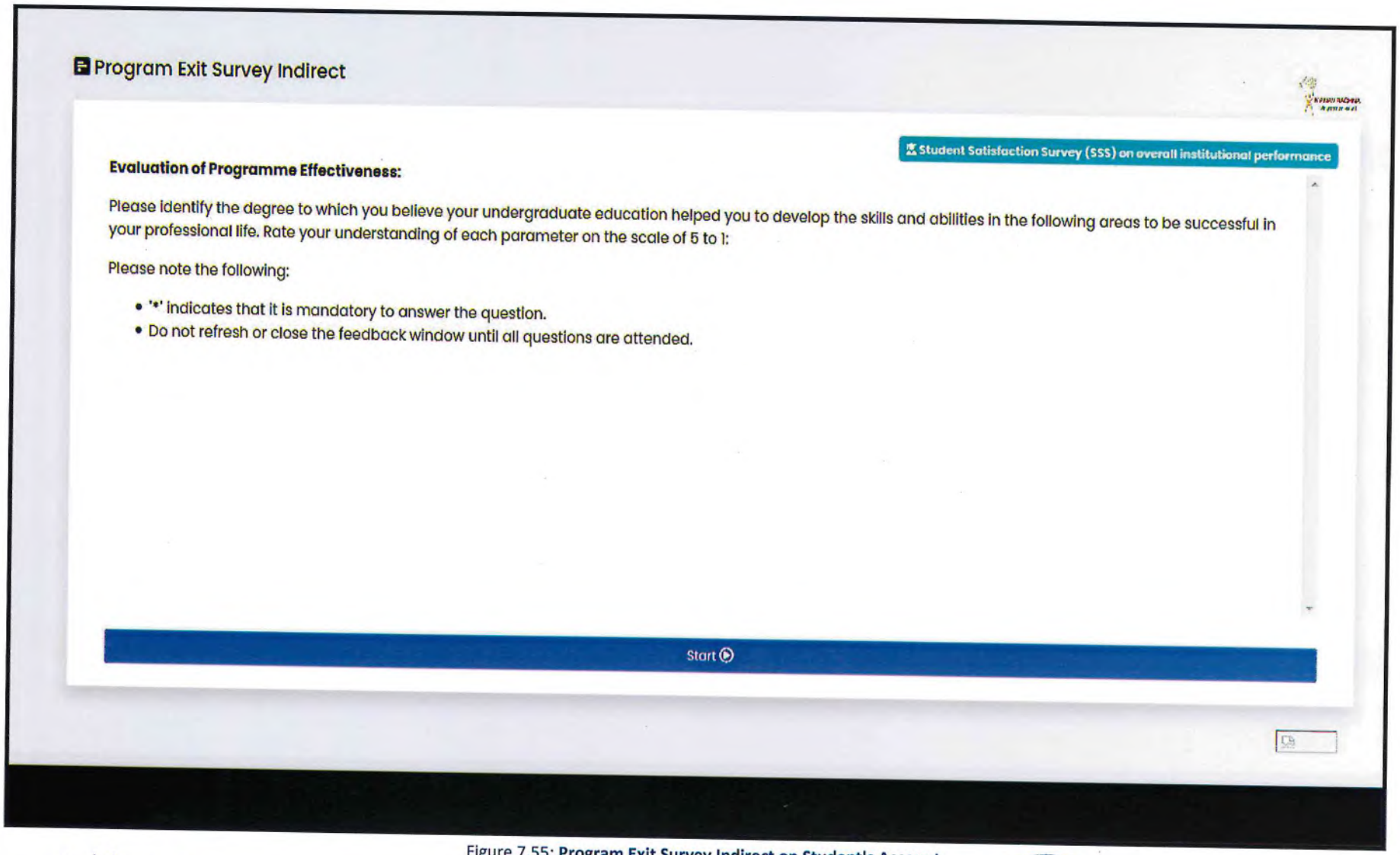

Figure 7.55: **Program Exit Survey Indirect on Student's Account**

- Student will fill the program exit survey-indirect, all these questions are mapped with the POs/PSOs

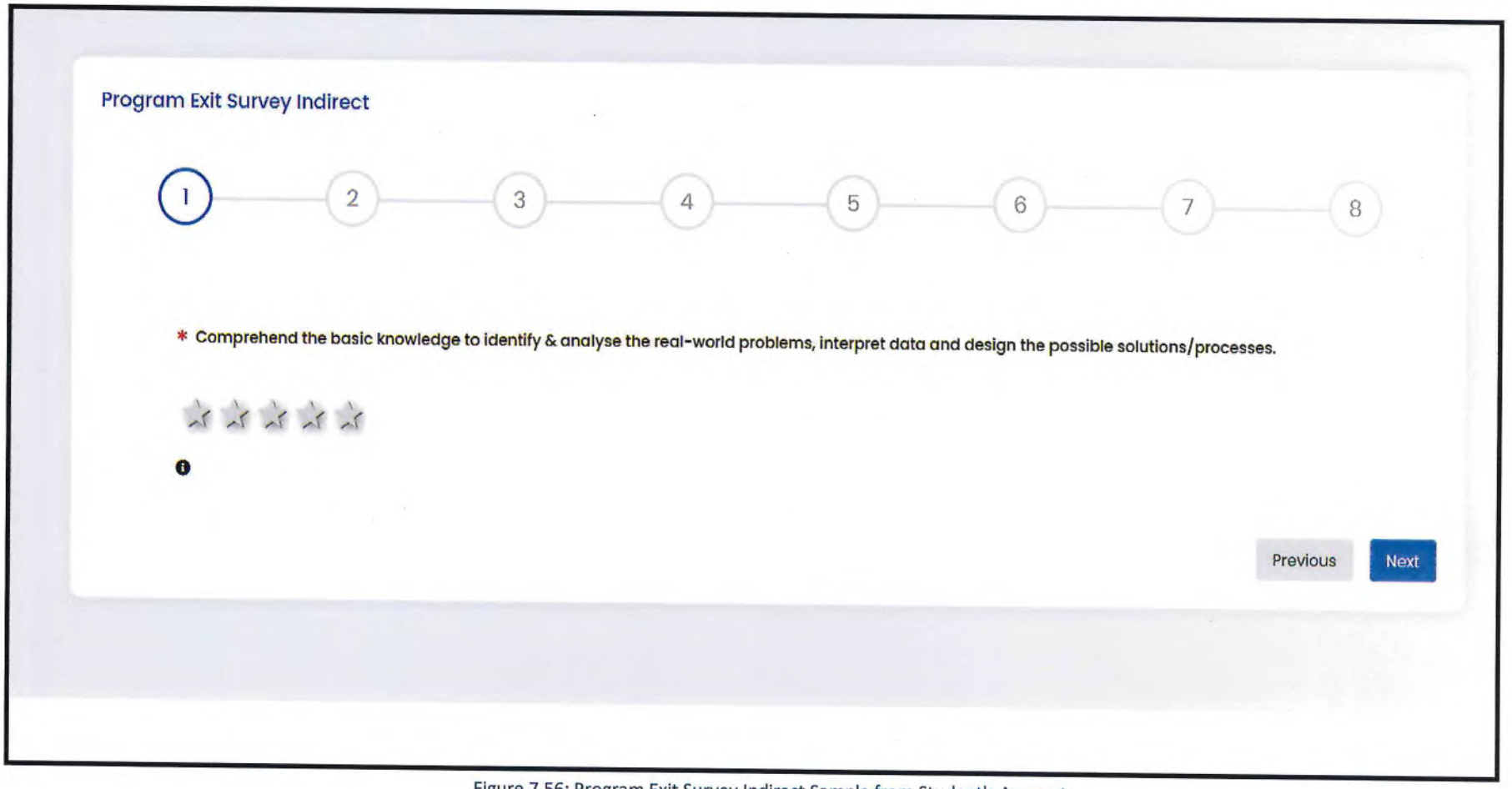

Figure 7.56: Program Exit Survey Indirect Sample from Student's Account

B. Alumni Survey (Indirect):

An alumni survey is conducted every academic year, which helps in providing the valuable inputs to assess what should be improved, modified, or remain intact.

Alumni Survey is further divided into two parts:-

(a) Alumni Survey - Indirect (Parameters mapped with POs/PSOs)

(b) Alumni Survey - Generic

Once parameter setting for the alumni survey is done and alumni shall be able to fill the alumni survey by opening the survey page from the link provided by the central EMS team. On clicking the link following page opens, wherein the alumni have to fill his/her details before beginning the survey:

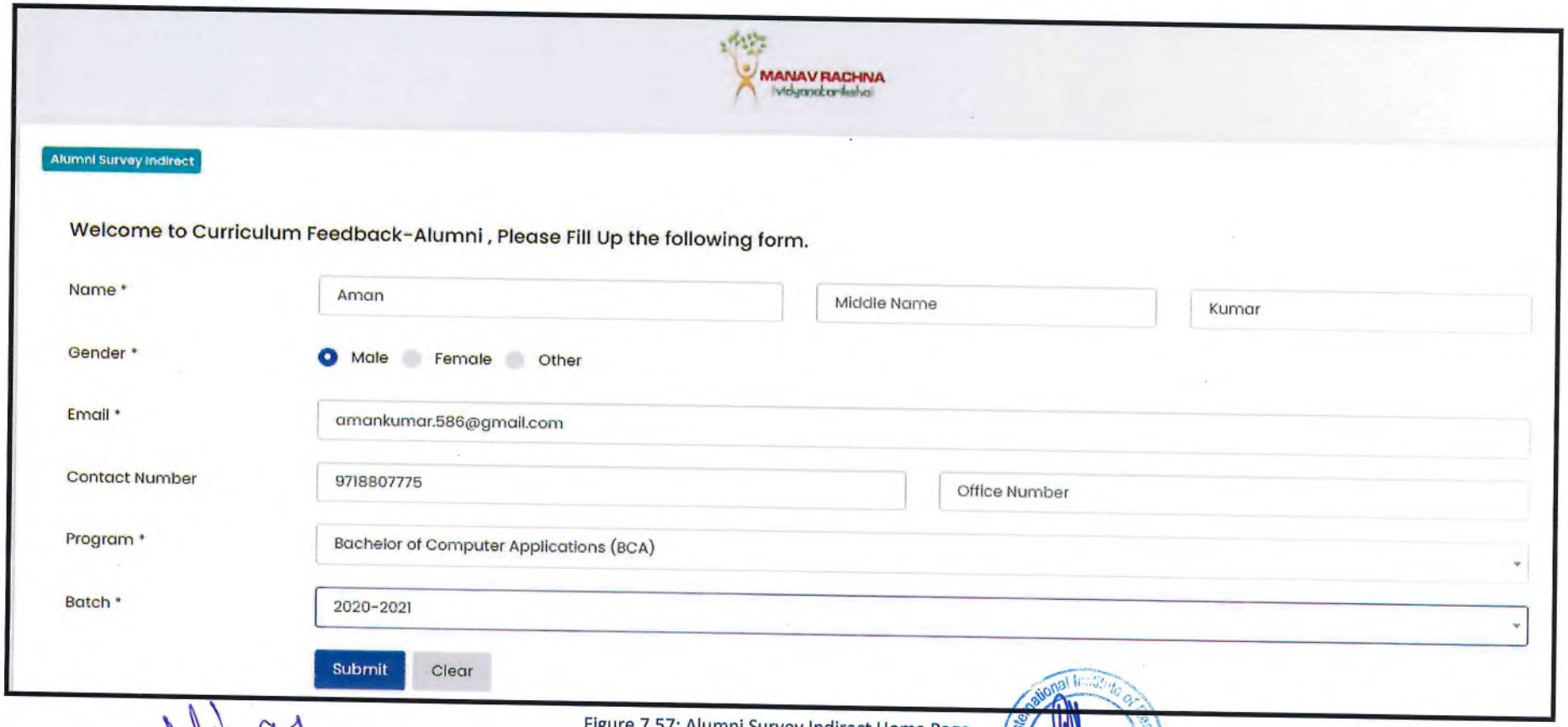

Figure 7.57: Alumni Survey Indirect Home Page

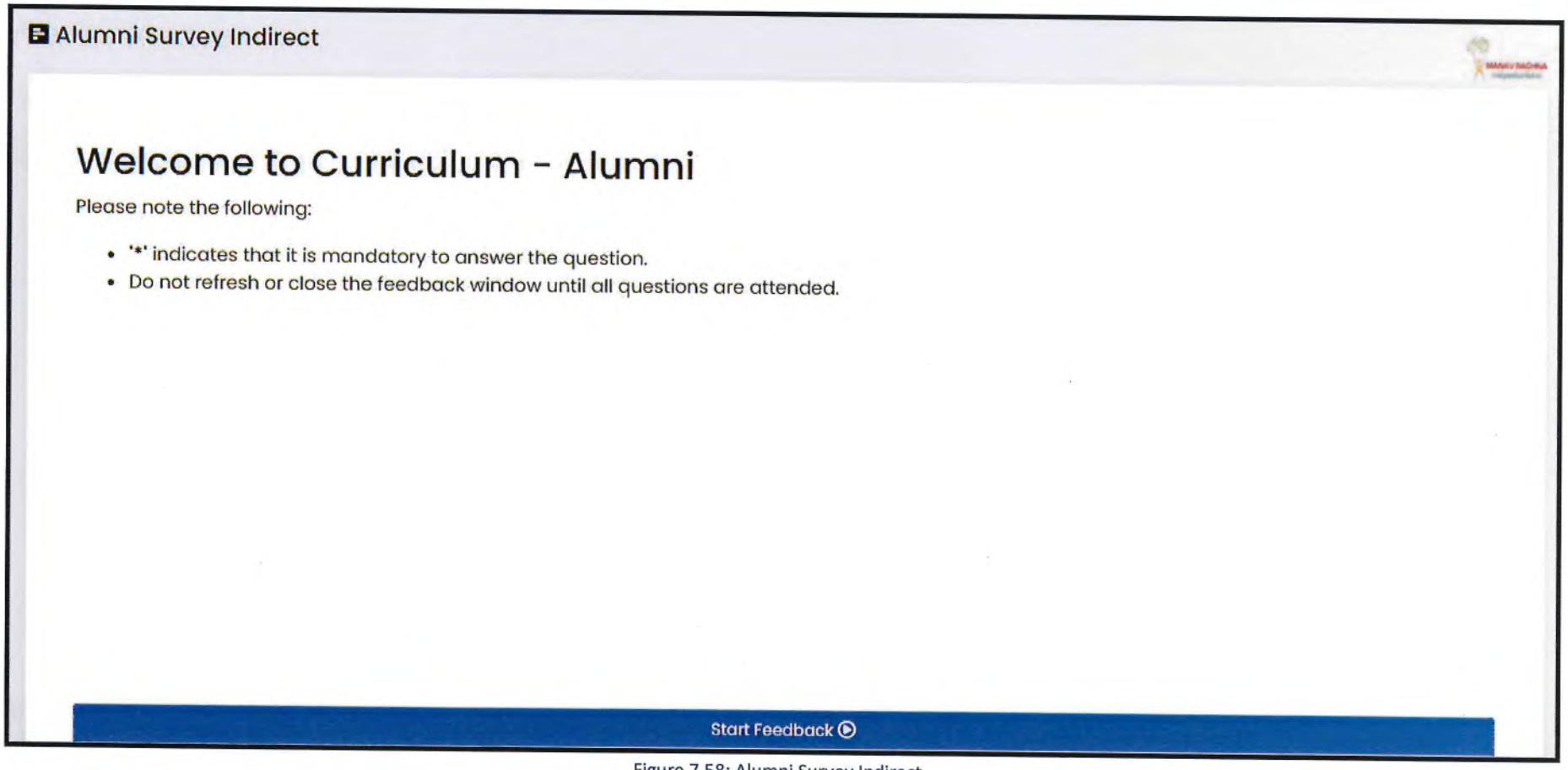

Figure 7.58: Alumni Survey Indirect

- Alumni will fill the alumni survey- indirect:

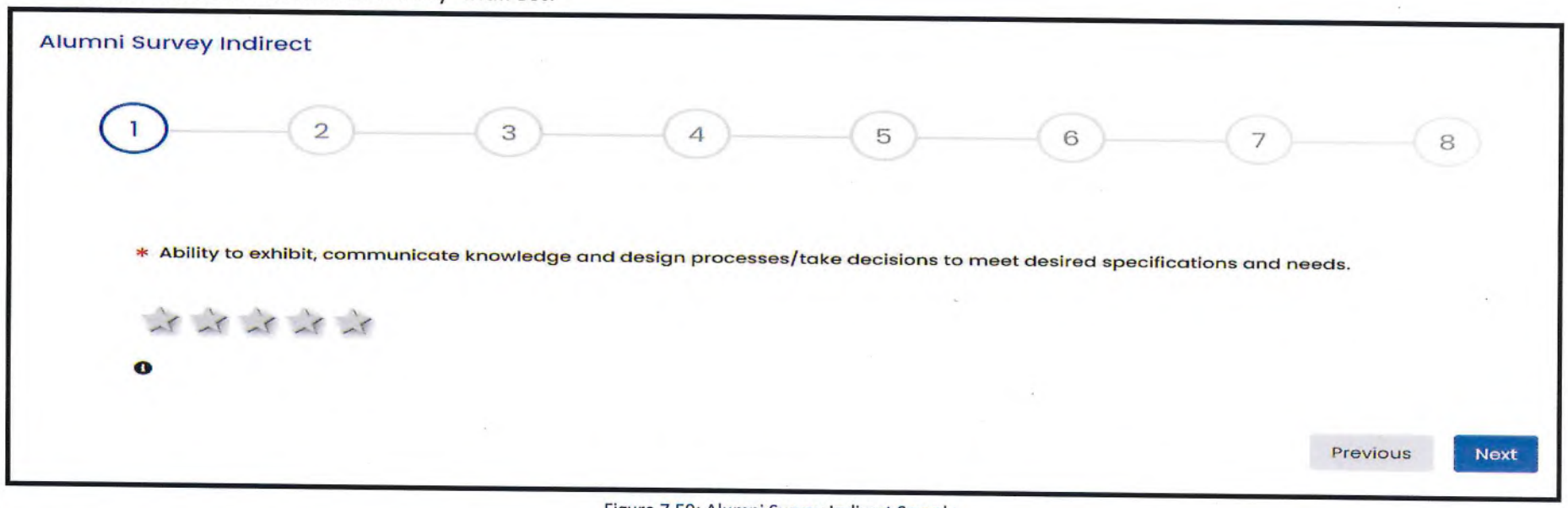

Figure 7.59: Alumni Survey Indirect Sample

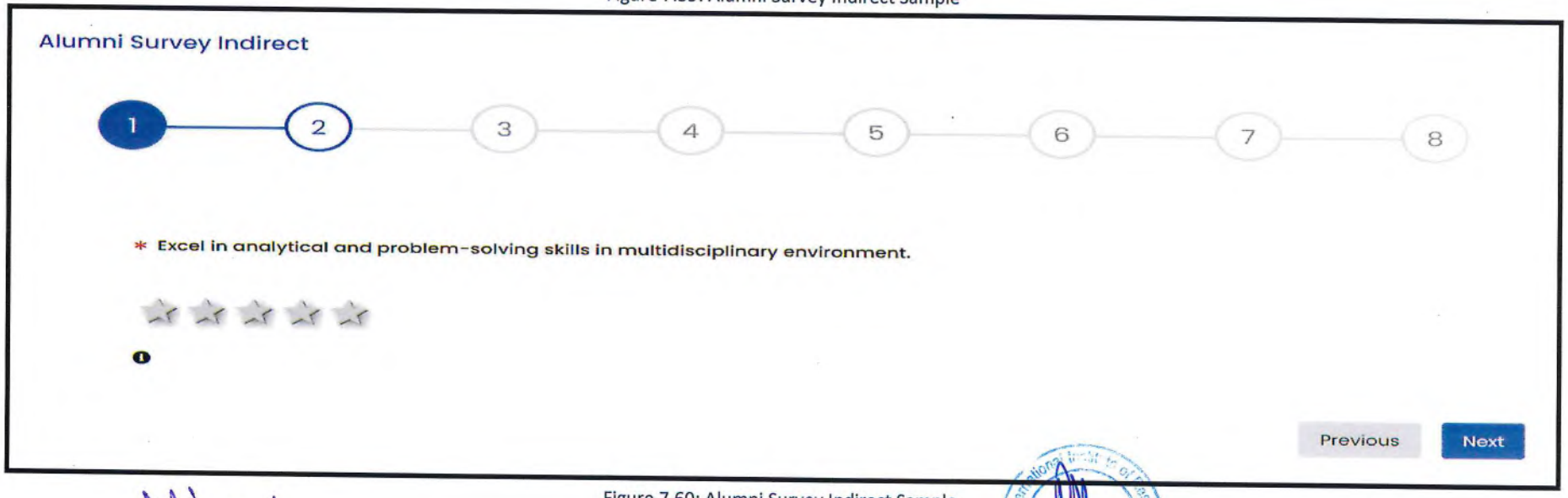

Figure 7.60: Alumni Survey Indirect Sample

7.7.3 COs & Pos/PSOs Attainment Reports:

A. **COs Attainment report (Direct & Indirect Attainment): To download COs direct, indirect and overall attainment report**
B. **POs/PSOs Attainment Report (Direct Attainment): To download POs/ PSOs direct attainment report**
C. **POs/PSOs Attainment Report (Direct Indirect - Attainment Report): To download POs/PSOs indirect and overall attainment report**

- Open report page from the home screen of course coordinator account.

Figure 7.61: Report on Home screen

- Open CO PO report from the report page for generating the reports of COs attainment and POs/PSOs attainment.

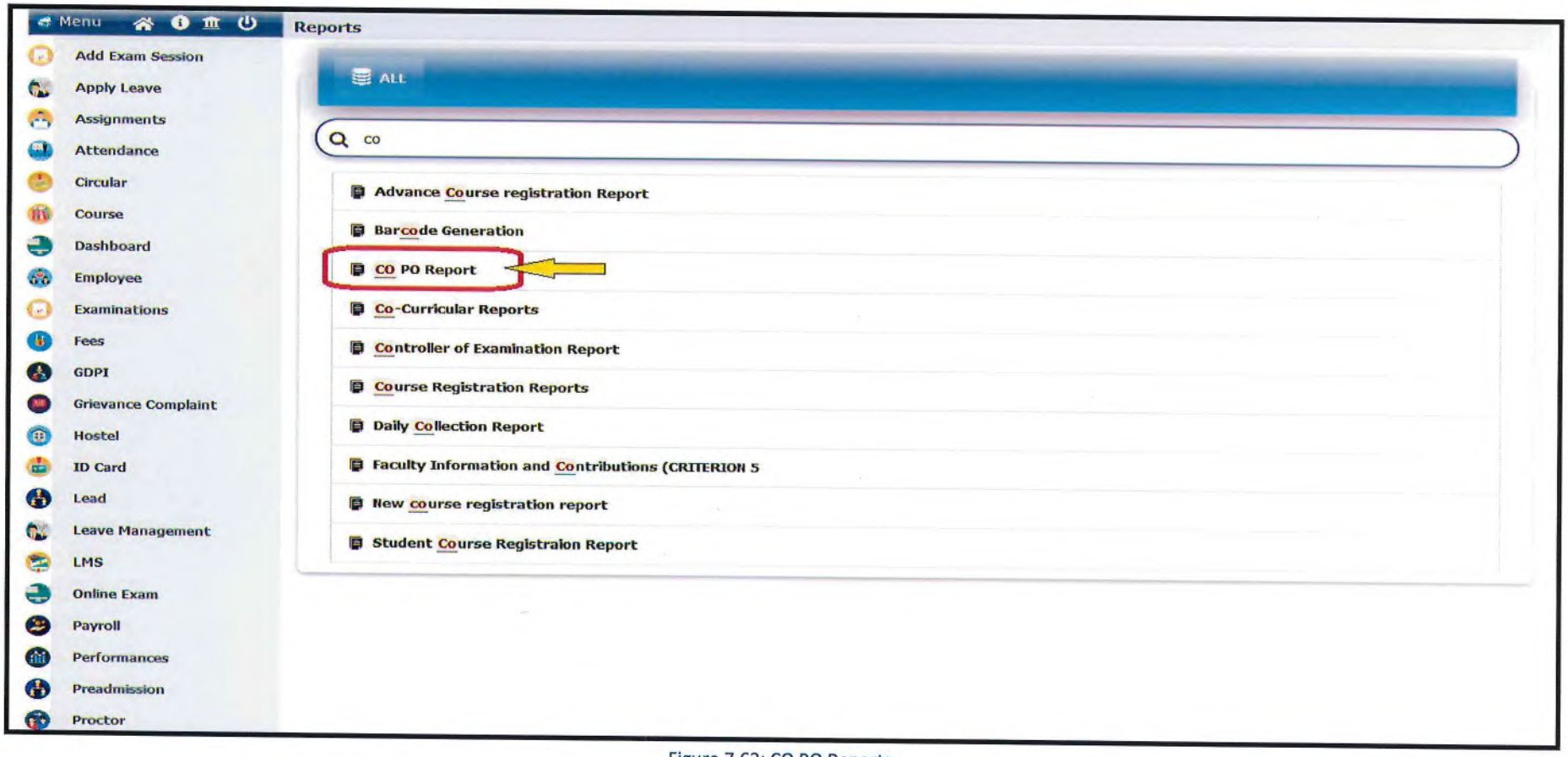

Figure 7.62: CO PO Reports

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A. COs Attainment report (Direct & Indirect attainment)

- For the COs attainment report, Open the CO wise student attainment report from the CO PO reports

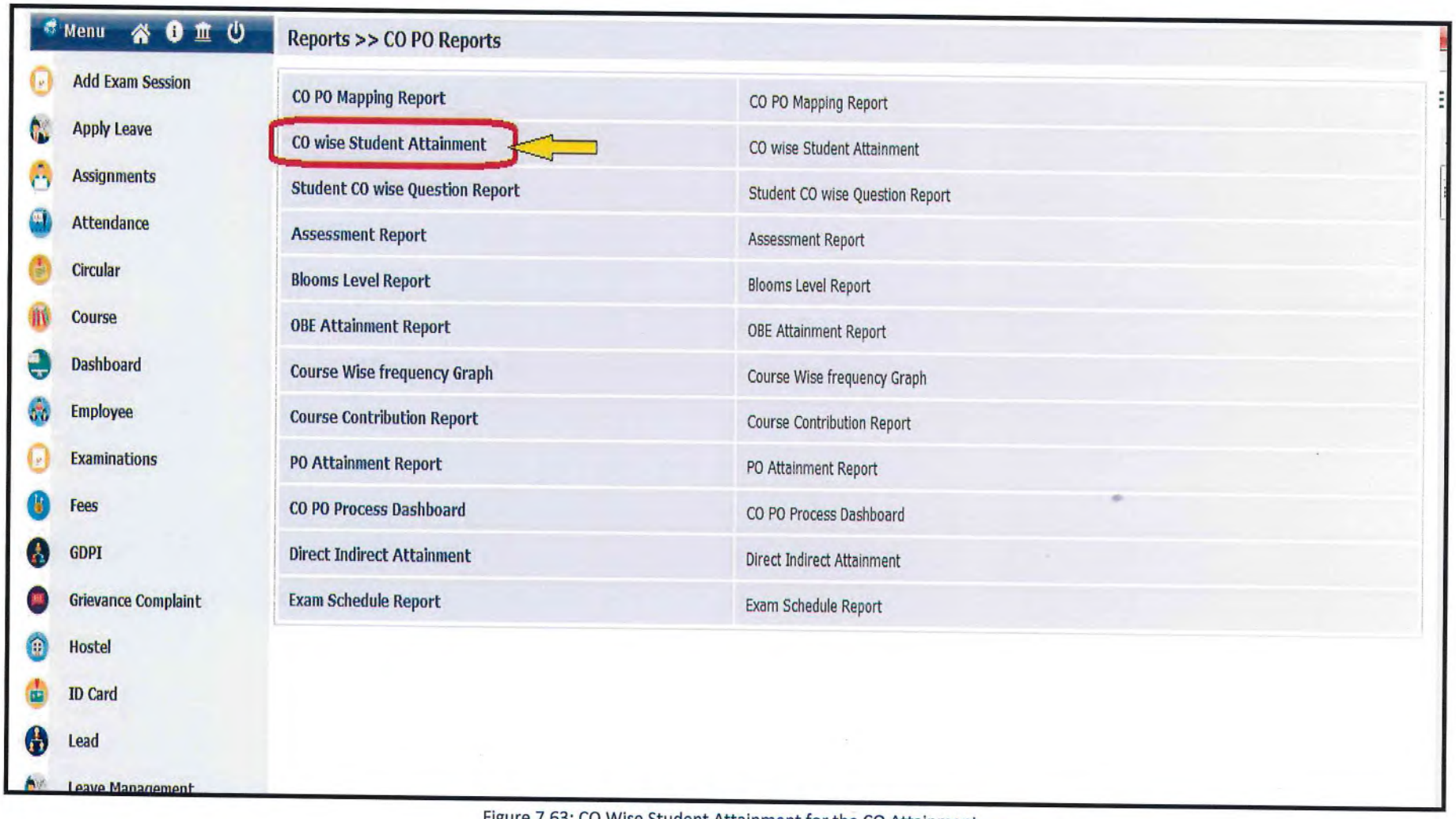


Figure 7.63: CO Wise Student Attainment for the CO Attainment

- Course Coordinators will fill all the parameters for fetching the CO attainment report for their courses as shown in the figure.

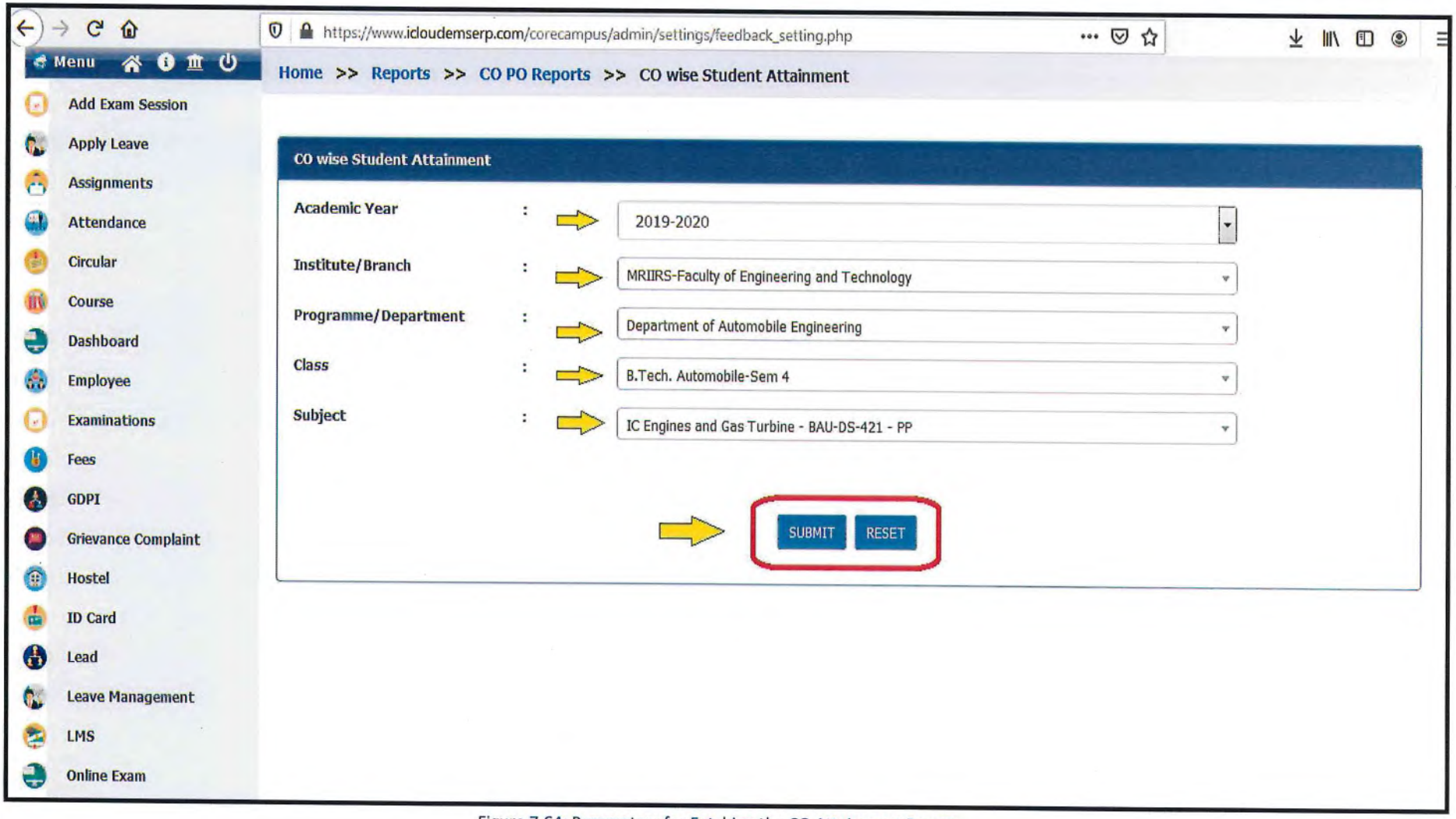
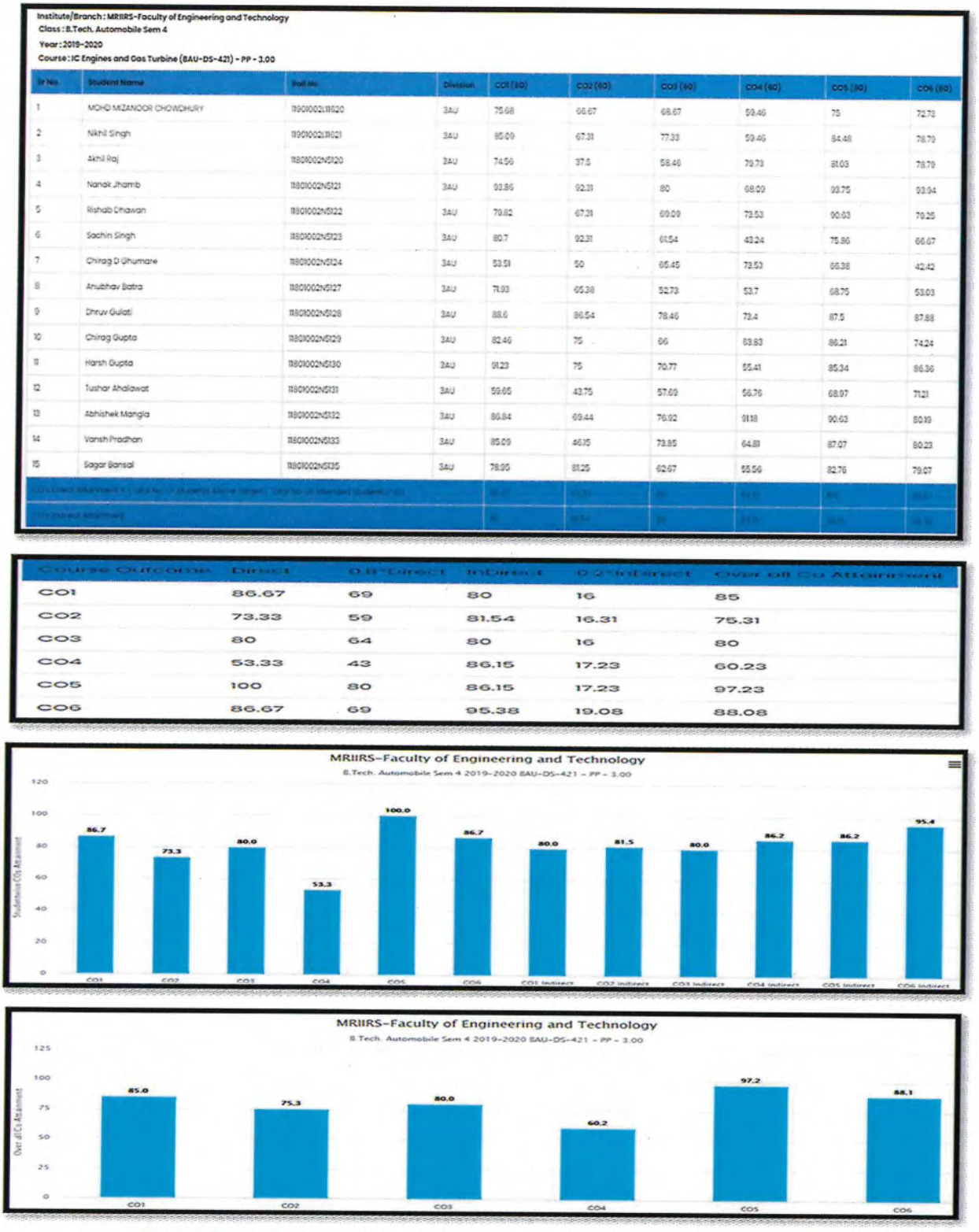


Figure 7.64: Parameters for Fetching the CO Attainment Report

- The weighted sum of direct and indirect attainment (0.8*Direct CO attainment +0.2*Indirect CO attainment) provides the overall CO attainment.
- Graphs are also available in the same report for direct and indirect COs attainment. Graph for Overall COs attainment is also available for downloading.



Institute/Branch : MRIIRS-Faculty of Engineering and Technology
Class : B.Tech. Automobile Sem 4
Year : 2019-2020
Course : IC Engines and Gas Turbine (BAU-DS-421) - PP - 3.00

Sr No	Student Name	Roll No	Division	CO1 (60)	CO2 (60)	CO3 (60)	CO4 (60)	CO5 (60)	CO6 (60)
1	MOHD MIZANOOR CHOWDHURY	11901002119020	3AU	75.68	66.67	68.67	59.46	75	72.73
2	Nikhil Singh	11901002119021	3AU	85.09	67.31	77.33	59.46	84.46	78.79
3	Akhil Raj	11801002N5120	3AU	74.59	37.5	58.46	79.73	81.03	78.79
4	Nanak Jhamb	11801002N5121	3AU	93.86	92.31	80	68.09	93.75	93.94
5	Rishab Dhawan	11801002N5122	3AU	79.82	67.31	69.09	73.53	90.63	79.25
6	Sachin Singh	11801002N5123	3AU	80.7	92.31	61.54	43.24	75.86	66.67
7	Chirag D Ghumare	11801002N5124	3AU	53.51	50	65.45	79.53	66.38	42.42
8	Anubhav Babra	11801002N5127	3AU	71.93	65.38	52.73	53.7	68.75	53.03
9	Dhruv Gulati	11801002N5128	3AU	88.6	86.54	78.46	72.4	87.5	87.88
10	Chirag Gupta	11801002N5129	3AU	82.46	75	66	63.83	86.21	74.24
11	Harsh Gupta	11801002N5130	3AU	91.23	75	70.77	55.41	85.34	86.36
12	Tushar Ahalawat	11801002N5131	3AU	59.65	43.75	57.69	56.76	68.97	71.21
13	Abhishek Mangla	11801002N5132	3AU	80.84	69.44	76.92	91.18	90.63	80.19
14	Vansh Pradhan	11801002N5133	3AU	85.09	46.15	73.85	64.81	87.07	80.23
15	Sagar Bansal	11801002N5135	3AU	78.95	81.25	62.67	55.56	82.76	79.07

Course Outcome	Direct	0.8*Direct	InDirect	0.2*InDirect	Over all Co Attainment
CO1	86.67	69	80	16	85
CO2	73.33	59	81.54	16.31	75.31
CO3	80	64	80	16	80
CO4	53.33	43	86.15	17.23	60.23
CO5	100	80	86.15	17.23	97.23
CO6	86.67	69	95.38	19.08	88.08

Figure 7.65: COs Attainment Report (Direct, Indirect and Overall COs Attainment of Course)

B. POs/PSOs Attainment Report (Direct Attainment)

- Open PO attainment report for the direct PO/PSO attainment report.

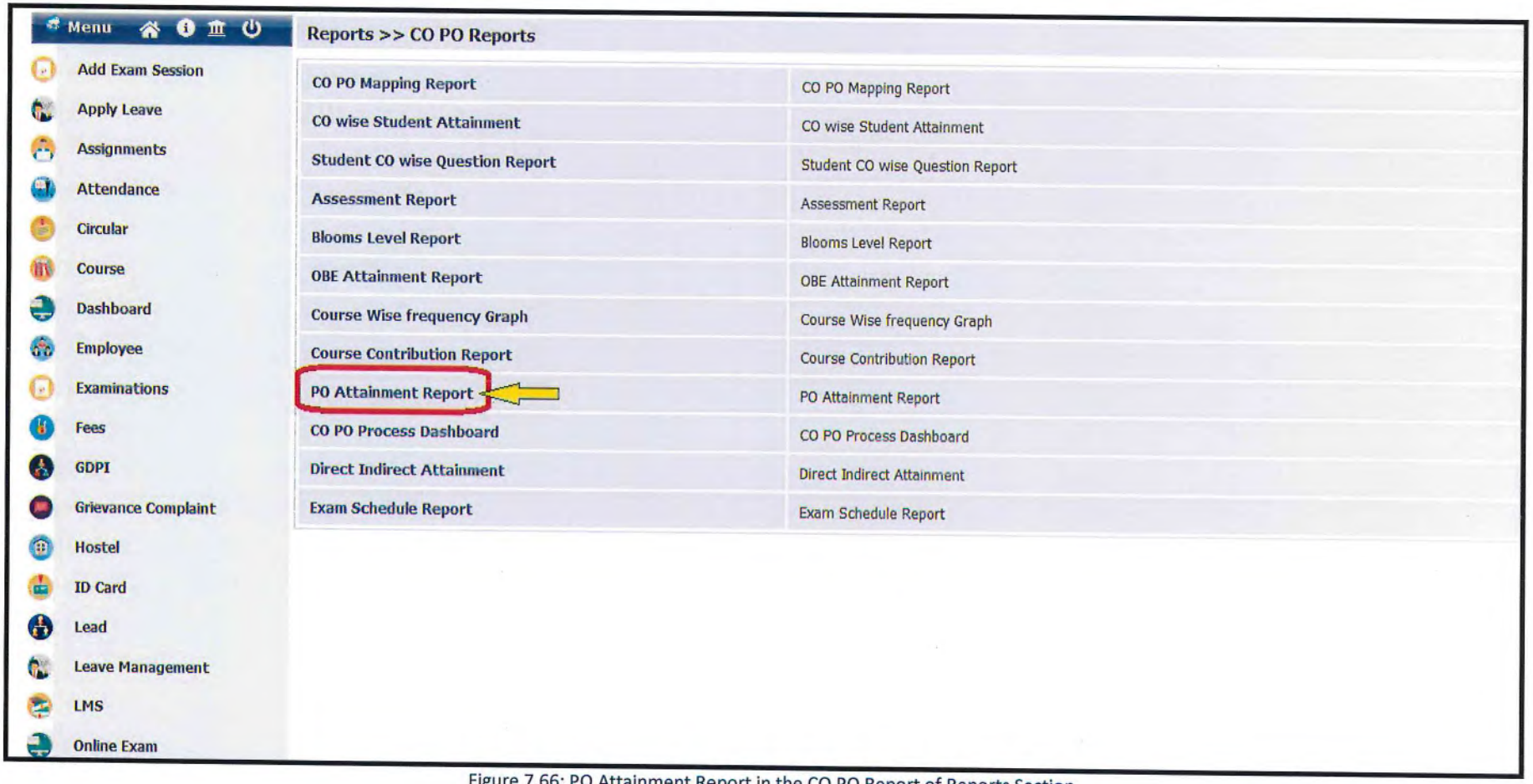


Figure 7.66: PO Attainment Report in the CO PO Report of Reports Section

- Fill all the parameters for fetching the direct attainment of POs/PSOs.

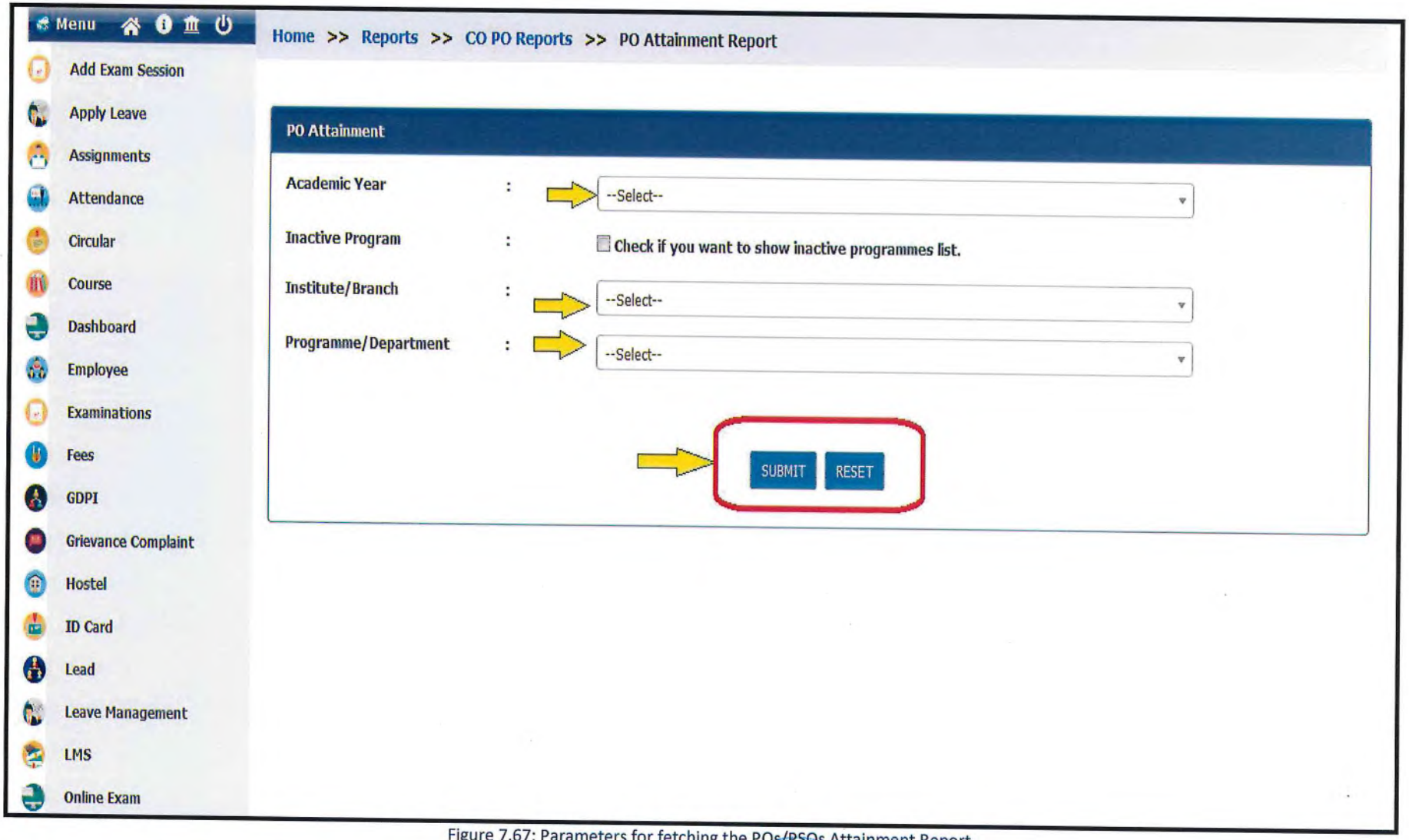
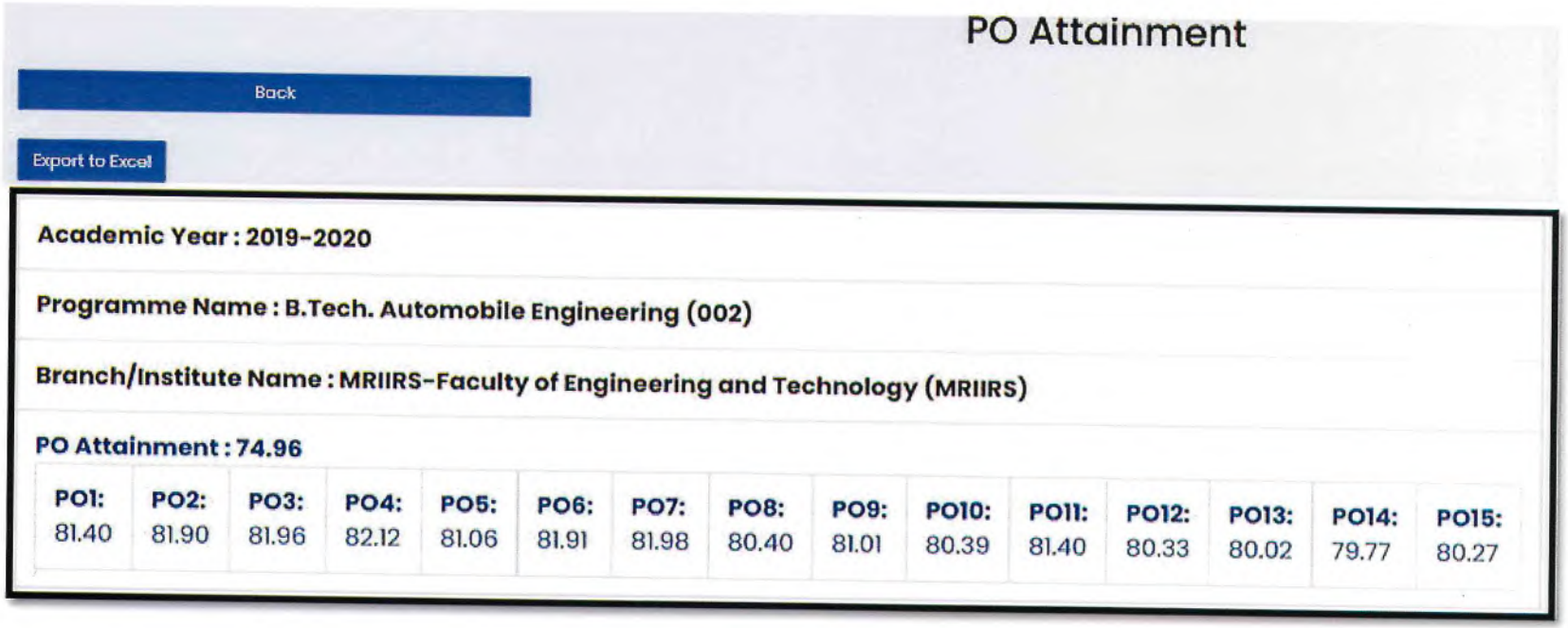


Figure 7.67: Parameters for fetching the POs/PSOs Attainment Report

- Direct POs/PSOs attainment reports with the calculation of each PO/PSO as per the program



PO Attainment

Back

Export to Excel

Academic Year : 2019-2020

Programme Name : B.Tech. Automobile Engineering (002)

Branch/Institute Name : MRIIRS-Faculty of Engineering and Technology (MRIIRS)

PO Attainment : 74.96

PO1:	PO2:	PO3:	PO4:	PO5:	PO6:	PO7:	PO8:	PO9:	PO10:	PO11:	PO12:	PO13:	PO14:	PO15:
81.40	81.90	81.96	82.12	81.06	81.91	81.98	80.40	81.01	80.39	81.40	80.33	80.02	79.77	80.27

Figure 7.68: PO/PSO Direct Attainment Report

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- PO1 is calculated first with respect to the mapping of PO1 in the all courses taught during the academic year below. Similarly, all POs/PSOs shall be available in the report.

PO1:Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems

PO Number	Sr. No.	Contributing Courses	Course Outcomes	CO Target	Attainment of Course Outcomes		
					H	M	L
PO1	1	introduction to electromagnetic theory BPH-101	CO1	50	62.5	0	0
PO1	2	introduction to electromagnetic theory BPH-101	CO2	50	0	12.5	0
PO1	3	introduction to electromagnetic theory BPH-101	CO3	50	50	0	0
PO1	4	introduction to electromagnetic theory BPH-101	CO4	50	50	0	0
PO1	5	introduction to electromagnetic theory BPH-101	CO5	50	50	0	0
PO1	6	introduction to electromagnetic theory BPH-101	CO6	50	0	37.5	0
PO1	7	physics lab BPH-151	CO1	60	75	0	0
PO1	8	physics lab BPH-151	CO2	60	0	75	0
PO1	9	physics lab BPH-151	CO3	60	0	50	0
PO1	10	physics lab BPH-151	CO4	60	62.5	0	0
PO1	11	physics lab BPH-151	CO5	60	75	0	0
PO1	12	physics lab BPH-151	CO6	60	0	75	0

Figure 7.69: Attainment of PO1: Sample

- At the end of report, graph is available which shows the direct attainment of POs/PSOs of the program as shown in the figure 7.10.

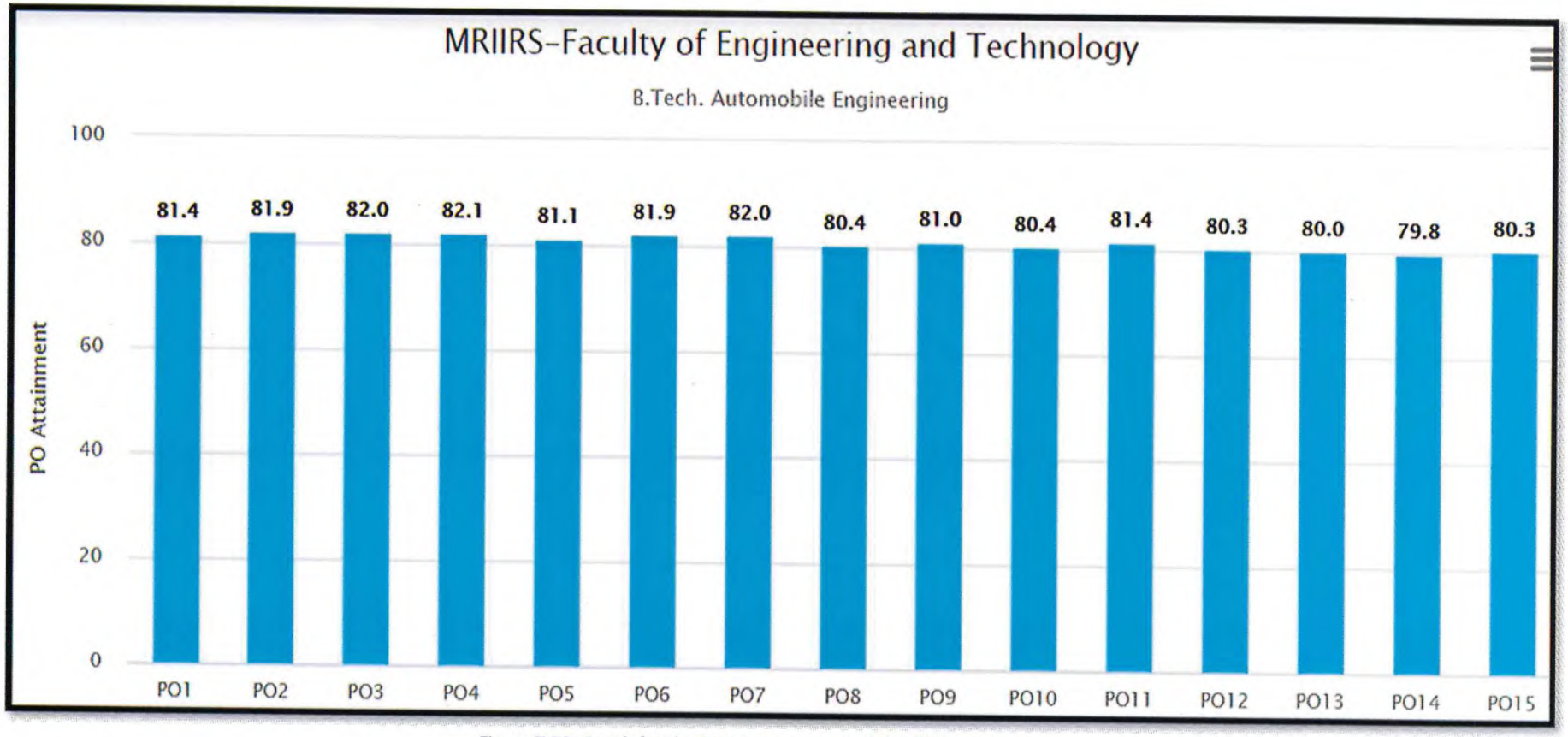

Figure 7.70: Graph for the Direct Attainment of POs/PSOs of the Program.

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C. POs/PSOs Attainment Report (Direct- Indirect Attainment Report):

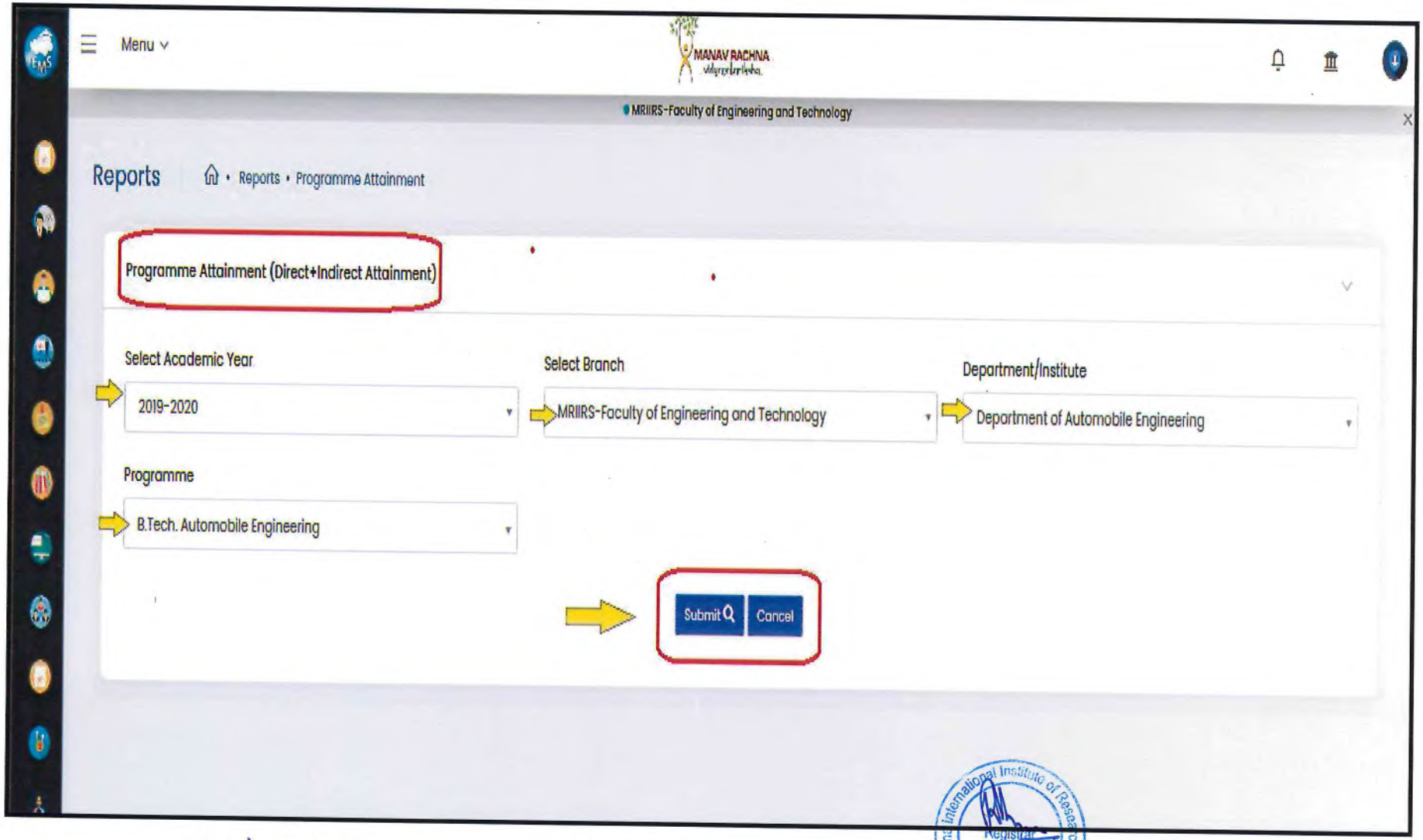

Figure 7.71: Direct Indirect PO/PSO Attainment

Menu

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Academic Year : 2019-2020
Programme Name : B.Tech. Automobile Engineering 002
Institute/Branch Name : MRIIRS-Faculty of Engineering and Technology

Sr No.	Question	Mapped To PO/PSO	Completely Satisfied	Percentage	Very Satisfied	Percentage	Moderately Satisfied	Percentage	Slightly Satisfied	Percentage	Not at all satisfied	Percentage	Weightage Avg%	WA
1	Comprehend the basic knowledge to identify & analyse the real-world problems, interpret data and design the possible solutions/processes.	PO1,PO2,PO3,PO13,PO14,	11	68.75	4	25	1	6.25	0	0	0	0	72.5	11.6
2	Able to apply research-based approach and techniques in various fields to provide valid conclusions.	PO4,PO13,PO14,	3	18.75	12	75	1	6.25	0	0	0	0	62.5	10
3	Skills gained to apply innovative tools for prediction and modelling of complex problems in various fields.	PO5,PO13,PO14,	10	62.5	5	31.25	1	6.25	0	0	0	0	71.25	11.4
4	Responsibility level acquired to develop solutions for sustainable developments (in societal, environmental, cultural and economic contexts).	PO7,PO8,PO15,	7	43.75	7	43.75	2	12.5	0	0	0	0	68.25	10.6
5	Leadership qualities and team-spirit inculcated through various student development programmes.	PO8,PO15,PO9,	8	50	5	31.25	3	18.75	0	0	0	0	68.25	10.6
6	Able to communicate effectively in both verbal and written form and develop intrapersonal & interpersonal skills.	PO9,PO15,PO8,PO10,	9	56.25	7	43.75	0	0	0	0	0	0	71.25	11.4
7	Able to acquire and apply new knowledge as needed, using appropriate learning strategies.	PO12,PO13,PO14,	6	37.5	9	56.25	1	6.25	0	0	0	0	68.25	10.6
8	Able to secure employment or be an entrepreneur with ability to apply professional knowledge in multidisciplinary environment with ethical responsibility.	PO13,PO15,PO11,PO8,	9	56.25	6	37.5	1	6.25	0	0	0	0	70	11.2

Figure 7.72: Program Exit Survey- Indirect Report with POs/PSOs Mapping

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No.	Question	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PO13	PO14	PO15
1	Comprehend the basic knowledge to identify & analyse the real-world problems, interpret data and design the possible solutions/processes.	72.5	72.5	72.5										72.5	72.5	
2	Able to apply research-based approach and techniques in various fields to provide valid conclusions.				62.5									62.5	62.5	
3	Skills gained to apply innovative tools for prediction and modelling of complex problems in various fields.					71.25								71.25	71.25	
4	Responsibility level acquired to develop solutions for sustainable developments (in societal, environmental, cultural and economic contexts).						66.25	66.25								66.25
5	Leadership qualities and team-spirit inculcated through various student development programmes.								66.25	66.25						66.25
6	Able to communicate effectively in both verbal and written form and develop intrapersonal & interpersonal skills.								71.25	71.25	71.25					71.25
7	Able to acquire and apply new knowledge as needed, using appropriate learning strategies.												66.25	66.25	66.25	
8	Able to secure employment or be an entrepreneur with ability to apply professional knowledge in multidisciplinary environment with ethical responsibility.								70			70		70		70
	Average PO/PSO Attainment using Program Exit Survey (PI)	72.5	72.5	72.5	62.5	71.25	66.25	66.25	69.1666666666667	68.75	71.25	70	66.25	68.5	68.125	68.4375

Figure 7.73: Program Exit Survey- Indirect POs/PSOs Attainment Report

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Sr No.	Question	Mapped To PO/PSO	Completely Satisfied	Percentage	Very Satisfied	Percentage	Moderately Satisfied	Percentage	Slightly Satisfied	Percentage	Not at all satisfied	Percentage	Weightage Avg%	WA
1	Ability to exhibit, communicate knowledge and design processes/take decisions to meet desired specifications and needs.	PO1,PO3,PO15,	17	44.74	10	26.32	11	28.95	0	0	0	0	63.16	24
2	Excel in analytical and problem-solving skills in multidisciplinary environment.	PO2,PO4,PO11,PO13,PO15,	5	13.16	29	76.32	4	10.53	0	0	0	0	60.53	23
3	Benefit from elective courses, Project/research work, value added certifications, workshops and training programmes conducted during your course.	PO1,PO2,PO3,PO13,PO14,PO15,	17	44.74	19	50	2	5.26	0	0	0	0	67.89	25.8
4	Ability to learn new technology, innovative tools to resolve contemporary issues.	PO5,PO7,PO13,PO14,	17	44.74	14	36.84	7	18.42	0	0	0	0	65.26	24.8
5	Willingness in life-long learning for professional development.	PO12,PO13,PO6,	16	42.11	17	44.74	5	13.16	0	0	0	0	65.79	25
6	Extent of ethical, social and environmental values inculcated, helping you to relate knowledge and skills gained with societal needs.	PO6,PO9,PO8,PO14,	17	44.74	19	50	2	5.26	0	0	0	0	67.89	25.8
7	Professional competency developed to work as per the requirements of any organization including interpersonal and intrapersonal communication skills.	PO8,PO12,PO15,PO9,PO10,	15	39.47	20	52.63	3	7.89	0	0	0	0	66.32	25.2
8	Exhibit good leadership skills to be an entrepreneur with ability to apply professional knowledge and ethical responsibility.	PO7,PO8,PO11,PO15,PO9,	19	50	14	36.84	5	13.16	0	0	0	0	67.37	25.6

Figure 7.74: Alumni Survey -Indirect Report with POs/PSOs Mapping

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Sr No.	Question	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PO13	PO14	PO15
1	Ability to exhibit, communicate knowledge and design processes/take decisions to meet desired specifications and needs.	63.16		63.16												63.16
2	Excel in analytical and problem-solving skills in multidisciplinary environment.		60.53		60.53							60.53		60.53		60.53
3	Benefit from elective courses, Project/research work, value added certifications, workshops and training programmes conducted during your course.	67.89	67.89	67.89										67.89	67.89	67.89
4	Ability to learn new technology, innovative tools to resolve contemporary issues.					65.26		65.26						65.26	65.26	
5	Willingness in life-long learning for professional development.						65.79						65.79	65.79		
6	Extent of ethical, social and environmental values inculcated, helping you to relate knowledge and skills gained with societal needs.						67.89		67.89	67.8					67.89	
7	Professional competency developed to work as per the requirements of any organization including interpersonal and intrapersonal communication skills.								66.32	66.32	66.32		66.32			66.32
8	Exhibit good leadership skills to be an entrepreneur with ability to apply professional knowledge and ethical responsibility.							67.37	67.37	67.37		67.37				67.37
Average PO/PSO Attainment using Alumni Survey (AI)		65.525	64.21	65.525	60.53	65.26	66.84	66.315	67.193333333333	67.193333333333	66.32	63.95	66.055	64.8675	67.013333333333	65.054

Figure 7.75: Alumni Survey -Indirect POs/PSOs Attainment Report

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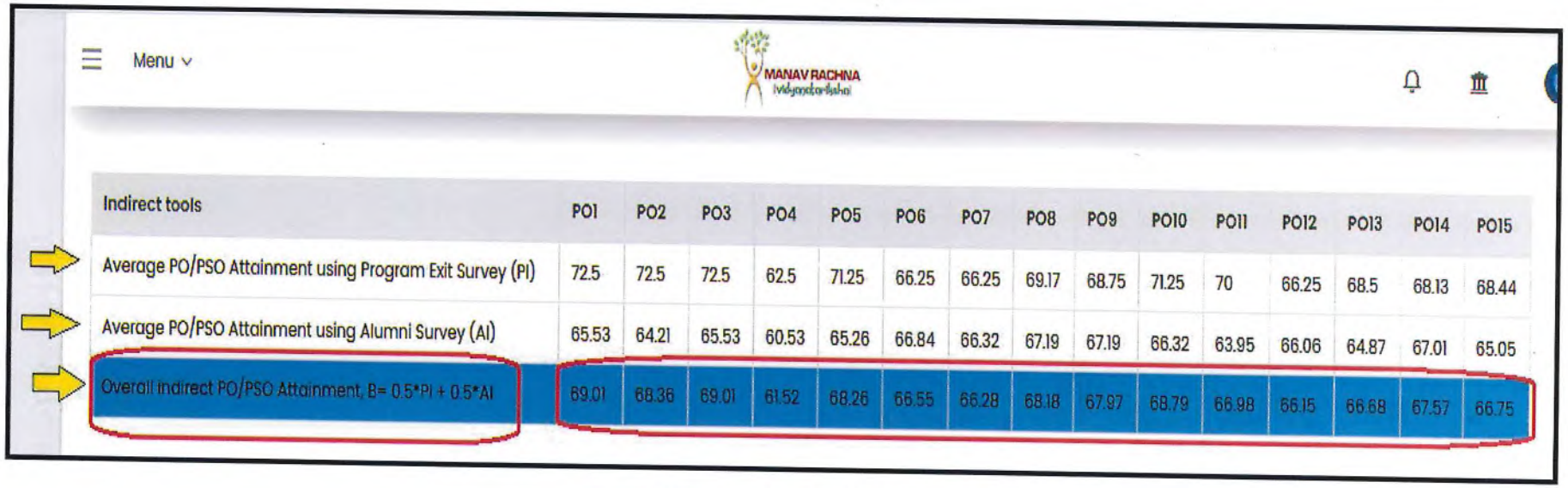

Indirect tools	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PO13	PO14	PO15
Average PO/PSO Attainment using Program Exit Survey (PI)	72.5	72.5	72.5	62.5	71.25	66.25	66.25	69.17	68.75	71.25	70	66.25	68.5	68.13	68.44
Average PO/PSO Attainment using Alumni Survey (AI)	65.53	64.21	65.53	60.53	65.26	66.84	66.32	67.19	67.19	66.32	63.95	66.06	64.87	67.01	65.05
Overall Indirect PO/PSO Attainment, B= 0.5*PI + 0.5*AI	69.01	68.36	69.01	61.52	68.26	66.55	66.28	68.18	67.97	68.79	66.98	66.15	66.68	67.57	66.75

Figure 7.76: Overall Indirect POs/PSOs Attainment

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MRIIRS–Faculty of Engineering and Technology

B.Tech. Automobile Engineering 002

Direct + Indirect Attainment	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PO13	PO14	PO15
Average Direct PO/PSO Attainment (A)	81.40	81.88	81.93	82.12	81.06	81.91	81.98	80.40	81.01	80.39	81.40	80.33	80.02	79.77	80.27
Average indirect PO/PSO Attainment (B)	69.01	68.18	69.01	61.52	68.26	66.55	66.28	68.18	67.97	68.79	66.98	66.15	66.68	67.57	66.75
Overall PO/PSO Attainment= A*0.8 + B*0.2	78.92	79.14	79.35	78	78.5	78.84	78.84	77.96	78.4	78.07	78.52	77.49	77.35	77.33	77.57

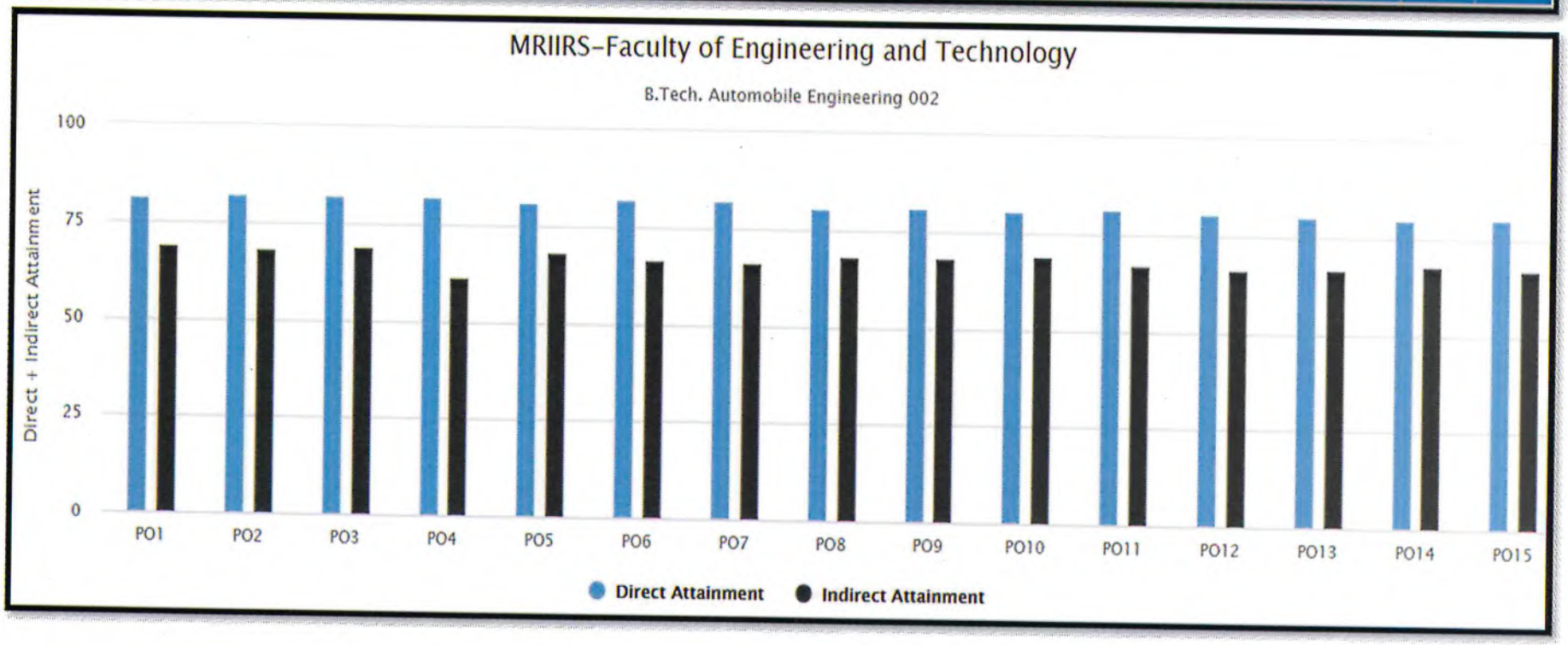

Figure 7.77: Overall POs/PSOs Attainment & Graph of Direct and Indirect Attainment

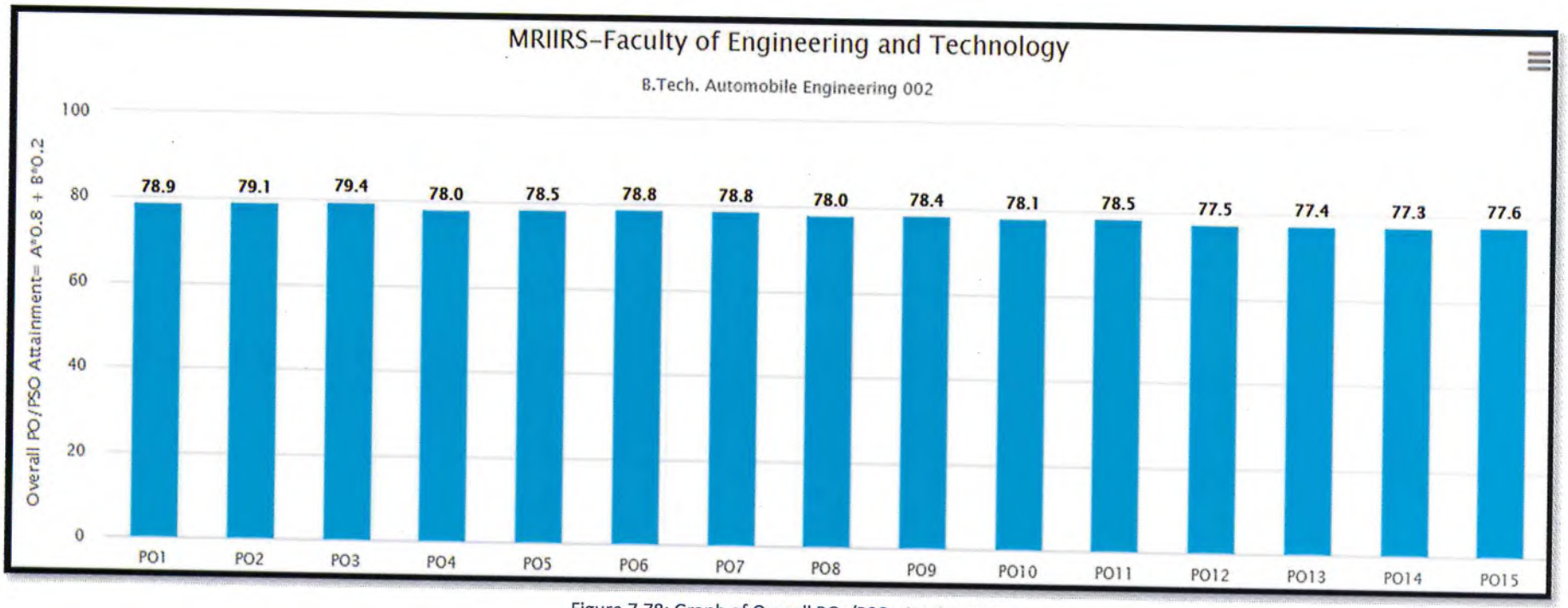

Figure 7.78: Graph of Overall POs/PSOs Attainment