

2.3.2 - Teachers use ICT enabled tools including online resources for effective teaching and learning processes during the year

This is the age of digital learning- while conventional blackboard teaching has still its merits, the techniques of teaching have evolved in digital format, with the availability of several types of ICT resources, offering several advantages. All the institutions of HBNI have implemented ICT based teaching. Classrooms are equipped with LCD projector facility and internet connectivity. The CIs/OCC have auditorium with state-of-the art facilities for projection and recording. The CIs are linked with HBNI central office by videoconferencing, through a dedicated network “Anunet”. At the Central Office, two videoconferencing facilities exist which have been extensively used in the past year to organise value added courses, webinars, doctoral committee meetings, credit seminars, etc. At HBNI, an Anunet website “Pathshala” (<http://pathshala.anunet.in>) has been set up, which hosts course content obtained on a variety of subjects from NPTEL, as well as lectures video graphed by HBNI. The students across the CIs benefit from this resource. Recently, HBNI has also started its YouTube channel, “HBNI Webinar” where all webinars conducted by HBNI stream live. The recordings of all the webinars are also available on the channel for the benefit of students/faculty across all educational institutions in India. Continuing its efforts to take education far beyond classrooms, particularly in aftermath of Covid-19 pandemic, a new video conferencing facility has been established by HBNI in addition to the existing facility at HBNI Council Hall. The facility is housed at Kanchenjunga building, Anushakti Nagar. The video conferencing facility can be used for conducting online classes, meetings, and dissertation and theses defenses.

Faculty members of HBNI use online resources for effective teaching and learning. There are a large number of scientific and engineering computer codes available in public domain as online resources which are used for this purpose. Some of the examples of such codes are finite element codes for structural, thermal, electro-magnetic and material modelling; codes for reactor physics calculations; radiation damage calculation (eg. SHRIMP code); simulation of material properties code (VASP, CASTEP); codes related to geo-physics and geo-technical calculations; codes for assessment of migration of radio-nuclides in atmosphere and water bodies; general ab initio quantum chemistry package for electronic structure calculations; ab-initio simulation package with pseudopotential; Carr-Parrinello molecular dynamics package, thermochemical modeling packages, etc. Students are exposed to use of such codes for modelling and simulation, as part of the curriculum and research.

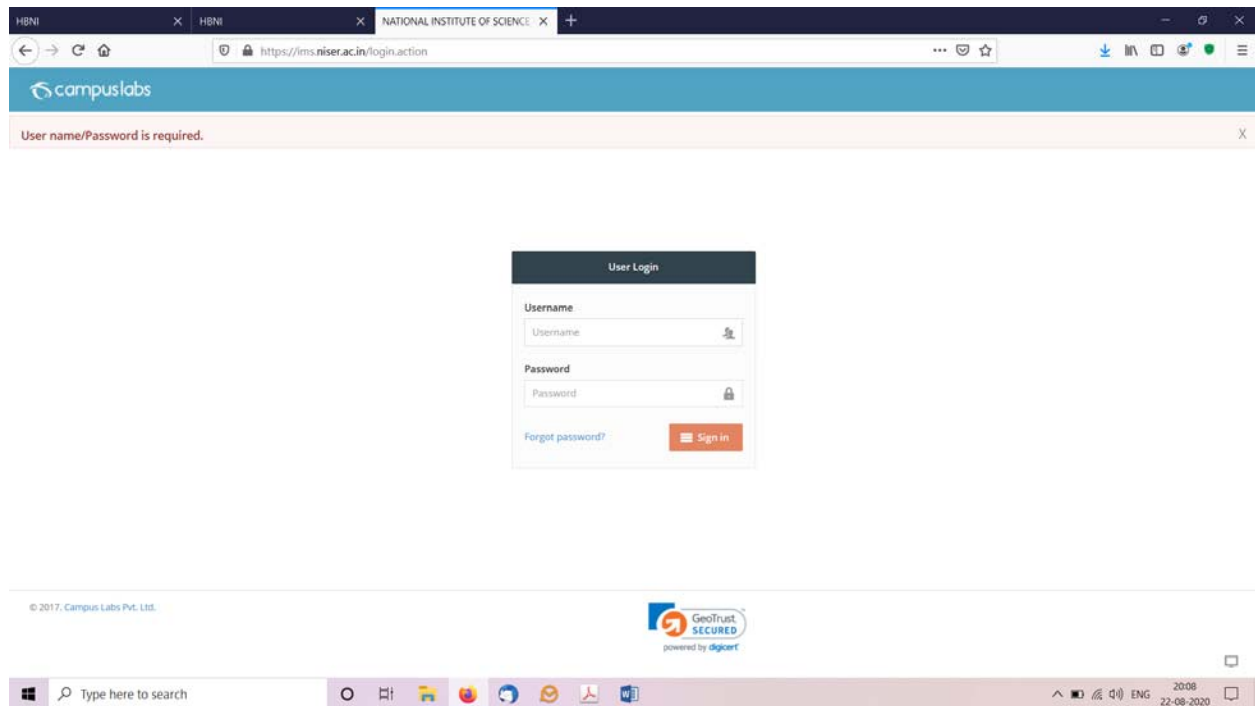
Some CIs and in particular, the Institute of Mathematical Sciences (IMSc), have established multi-functional facilities to handle video conferencing and web streaming, Video recordings and meetings. These have enhanced the impact of teaching in the sense that students from other CIs can also benefit from such lecture programs. Using this unique facility, IMSc has hosted a large number of video lectures and courses in mathematics, physics and computational biology, in its website <http://ekalavya.imsc.res.in>, and also hosted them in the YouTube channel “MATSCIENCE”. This channel is a highly sought-after e-resource for lectures on advanced mathematics, not only by the HBNI-IMSc faculty but also several visiting faculty including foreign faculty. At IGCAR, a similar “smart class” room with videoconferencing / video recording facilities has been established.

Learning Management System

NISER, Bhubaneswar

Different CIs / OCC of HBNI have evolved Learning Management Systems based on their requirements. This document illustrates the LMS used at NISER, Bhubaneswar.

A screenshot of the user interface of the LMS is given below (log in page: <http://ims.niser.ac.in/login.action>). The manual of the LMS, describing various features, processes and modalities is also appended in the next page.



Step Wise NISER Academic Process

Campus Labs ERP

10/24/2015

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USER: NISER

1. Offered Courses:

(Home / Academic Setup / Academic Course Struc. / Offered Courses)

If any course is to be unoffered or offered then to make them offered click checkbox and save it, to make it unoffered uncheck the check box and save it. If new course is added through course master then offer it from here if required.

2. Course Structure and Course Structure Details:

a) DEFINE A SYLLABUS:

(Home / Academic Setup / Academic Course Struc. / Course Structure / Syllabus)

If syllabus is to be revised then define it and add courses to syllabus and make it 'active'.

b) DEFINE SYLLABUS DETAILS:

(Home / Academic Setup / Academic Course Struc. / Course Structure / Syllabus Details)

For created syllabus define its properties like minimum no. of courses, maximum no. of courses, minimum credits and maximum credits that a student can register while doing course registration with this syllabus.

3. Academic Batch and Academic Batch Term:

a) DEFINE ACADEMIC BATCH FOR NEW BATCHES:

(Home / Academic Setup / Academic Masters / Academic Batch)

This process is yearly when new batches come then define new academic batch.

b) DEFINE ACADEMIC BATCH TERM:

(Home / Academic Setup / Academic Masters / Academic Batch Terms)

You need to perform this process when new term/semester is to be started. Define a semester, map already existing active syllabus or new one created in step 1.

Point to be noted: 'Auto Batch Creation', if this check is enabled then at the time of faculty course allocation an automatic common batch of that course allocating to a faculty will be created like '2015-16/Odd Term/B101'.

4. Faculty Course Allocation:

(Home / Faculty-Course Allocation)

Allocate courses to faculties. **Point to be noted:** Faculty course allocation must be done at last when all syllabuses are created and mapped to all academic batch term. After faculty allocation if any changes are made in syllabus (like new course is added) or academic batch term (like syllabus mapping is changed), then we just have go on faculty course allocation screen and if only few new courses are added in syllabus then we need select that faculty to which this course is already allocated and just click on save button (This is the when newly added course was in any active other syllabus and faculty course allocation was done otherwise map that course to faculty). If syllabus is changed then we need to go on faculty allocation screen and for all courses of that syllabus we need select faculty to which course was mapped and just click on save button (This is the when newly added course was in any active other syllabus and faculty course allocation was done) and courses for which faculty course allocation was not done we need to allocate faculty to them.

5. Pre Registration:

a) **DEFINE REGISTRATION START DATE AND END DATE:**

(Home / Academic Setup / Academic Masters / Academic Batch Terms)

Define registration start date and end date. Only within these dates students can register his/her courses. A mail and an alert student portal will go to students prior to a date when registrations are going to start and on the when registrations are going to start informing them 'Course/Pre Registration process for Semester 1 will open from tomorrow with due date of 28/11/2015' and 'Course/Pre Registration process for Semester 1 is open from today with due date of 28/11/2015' (for e.g.) correspondingly.

b) **MAKE SURE REGISTRATION VALIDATION CHECK:**

(Home / Academic Setup / Academic Masters / Academic Batch)

Make sure validation checks are enabled for each batch as per requirement.

semester wise credit validation	<input checked="" type="checkbox"/>
semester wise no of courses validation	<input type="checkbox"/>
course type wise credit validation in semester	<input type="checkbox"/>
course type wise no of courses validation in semester	<input type="checkbox"/>

c) **MAKE SURE COURSE STRUCTURE DETAILS:**

(Home / Academic Setup / Academic Course Struc. / Course Structure / Syllabus Details)

If anyone validation check is enabled then we should make sure details are also defined in syllabus (like minimum no. of courses, maximum no. of courses, minimum credits and maximum credits that a student can register while doing course registration with this syllabus).

d) **PRE REGISTRATION BY STUDENTS:**

(Home / Register for Courses)


There are only small differences between pre registration and main course registration:

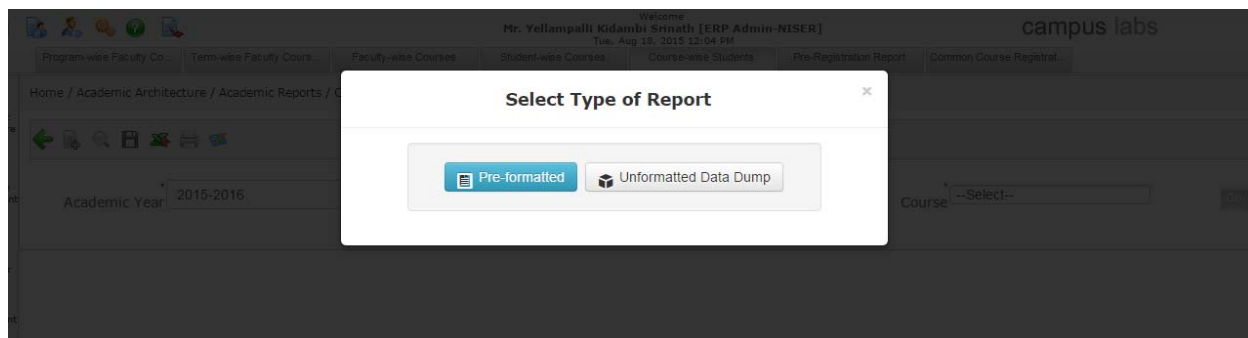
- Students are going register for a term higher than his/her current term. For e.g. if they are in 2nd semester and they registering for 3rd semester then it will pre-registration.
- Pre-registrations do go for any approval process. Faculty cannot see pre-registrations to approve them.

Students will register their courses from their portal. If a student was failed in courses of previous terms then those courses will appear at top of registration screen with label 'failed course details'. Students have to repeat their core courses by just one check that they have apply on check box before saving. They cannot replace their failed core courses with other courses. But they can replace their elective failed courses. A drop down named '**in lieu of**' against all courses of new term will appear, with all failed courses having credit equal to that course. And student can replace its failed elective course with new course with same credit by just selecting failed course against new course from '**in lieu of**' drop down.

e) **PRE REGISTRATION REPORT:**

(Home / MIS Reports / Academic Reports / Pre-registration Report)

On Pre-registration screen, once you click on excel download icon  two options for XLS report will appear, one to have data in formatted report with main columns and another is unformatted which is basically a data dump and having all possible columns. If course is not selected then system will generate report for all courses in selected academic year and term, and if course is selected then system will generate report only for that course.



6. Time Table Scheduling:

On the basis of pre-registrations you can do class scheduling.

a) DEFINE VENUE AVAILABILITY:

(Home / Slotting Based Scheduler / Slotting Based Scheduler / Venue Availability)

Make venues available which are by just clicking on checkbox and save it. Uncheck against those venues which are not available and save it.

b) DEFINE SLOTS:

(Home / Slotting Based Scheduler / Slotting Based Scheduler / Slot Master)

Create new slots or edit old ones. Define maximum and minimum credits, make them active, define type of can be mapped to this slot like practical, theory or others.


c) CREATING SLOTTING BASED TIME TABLE:

(Home / Slotting Based Scheduler / Slotting Based Scheduler / Slotting Time Table)

Only one time table is possible for an academic year and term in current system.

Select current academic year and term, select days for scheduling (Monday, Tuesday...), define max no. of sessions in a day and then click on show schedule.

A time table will be generated. System will set time for sessions automatically, you can edit that time if required. Map slots to each session on each day. If any session is not be conducted then just block it by clicking on delete button, however you undo it any time even after saving but before slot course mapping. When you click on delete button then a text will appear in which you can mention for which you are blocking this session for e.g. you can write 'Tea Break', 'Lunch' anything. Once mapping is done then just click on save button to same this mapping.

Once mapping are saved you can pull out that time table in PDF format by clicking on PDF button .

d) DO SLOT COURSE MAPPING:

(Home / Slotting Based Scheduler / Slotting Based Scheduler / Slot Courses)

Slot course mapping is to be done academic year and term wise. Select current academic year and term. Select semesters to be included, select slots to be used. Then click on go button. All slots with automatically mapped courses will appear on screen. Mappings which are in **Gray** color having no clashes, which are in **Red** color are having clashes and by hovering over them you can see with which course in this slot it is clashing. Clash check is done on the basis of registrations and its scope is within a slot. You can do manual mapping also and while adding it if there are any kind of error (clashes, slot capacity, venue capacity) then it will be shown in confirm dialogue box and if still want to add your mapping with errors then just click '**Ok**' button otherwise click on '**Cancel**' button. You can define slot capacity. There are two actions against each unconfirmed mapping one is a check box, while saving system will only those mapping against which check box is checked. Another is delete button, by clicking this you are cancelling this mapping and system will not consider this mapping in next shuffling. However you can undo it any time before saving. All confirmed mappings will appear in **Green** color.

Once it is done you can pull out a report by clicking on PDF button .

e) **GENERATE SCHEDULE:**

(Home / Slotting Based Scheduler / Slotting Based Scheduler / Slot Courses)

Once slot course mapping is done and confirmed then you can generate schedule by clicking on generate schedule button. Define start date and end date within which schedule is to be generated. System will create schedule by considering '**Slotting Time Table**' and '**Slot Courses Mapping**'.

7. Un-offer of Courses (if required):

(Home / Academic Setup / Academic Course Struc. / Offered Courses)

If you want to un-offer any course due to any reason then you have to do it before main registrations.

8. Main Course Registrations:

a) **PROMOTE STUDENTS TO NEXT TERM:**

(Home / Student Promotion)

To convert all pre-registration into main registrations you have to promote students to current term. So that their registrations can be open for approval process.

b) **STUDENT CREDIT REQUEST:**

- **Extra Credit Request By Student:**

(Home / Credit Request)

Student can make extra credit request from his/her portal. Module name for this is 'Credit Request'. They can make request from 25 to 28 credits only. They have select course/s for they are making extra credit request. Sum of all course's credit should exceed extra credits. For e.g. if student has made request for 28 credits then sum of selected course's credit should exceed 28-24(which is pre-defined) = 4 credits.

- **UGCS Extra Credit Approval (First Level Approval):**

(Home / Course Approval / Student Credit Request / Student Credit Request)

UGCS has to approve or reject extra credit requests by his/her students. On rejection UGCS has to give remark in remark field and a mail goes to student with that remark informing him/her for 'Declination'.

- **Dean Extra Credit Approval (Last Level Approval):**

(Home / Course Approval / Student Credit Request / Student Credit Request)

All extra requests approved by all UGCS will appear at his portal. Dean UGCS has to approve or reject extra credit requests approved by UGCS. On approval a mail will go to student informing him/her about final level approval. On rejection Dean has to give remark in remark field and a mail goes to student with that remark informing him/her for 'Declination'.

c) **STUDENTS WILL DO MAIN REGISTRATIONS:**

(Home / Register for Courses)

All pre-registrations will appear on their portal with all details like:

- **Unoffered Course:** If any course registered by them is unoffered now then a block of unoffered registered courses will appear at top of registrations saying to delete these registrations because these courses are unoffered now.
- **Time Table Clashes:** If their registrations are clashing with each other, then a block with time table clashes will appear at top of registration screen saying to delete any one of clashing registrations.

Students can do add/drop of courses if needed. Point to be noted: In case of course drop, students can do drop of courses if needed. If course is not having any level of approval then it can be deleted by student with going for any drop approval but if registrations are approved at any level then it will go for faculty approval to drop that course.

d) COURSE REGISTRATION APPROVAL:**▪ Faculty Approval (First Level Approval):**

(Home / Registrations / Registration Approval)

Since pre-registrations are converted into main registrations faculty can see students who have registered in his/her course. If any registrations have any error like course is unoffered or time table clash exists then it will show in different-different color. Faculty can approve/reject registrations which are not having any issue. On rejection faculty has to give remark in remark field and a mail goes to student with that remark informing him/her for 'Declination'.

▪ UGCS Approval (Second Level Approval):

(Home / Course Approval / Student Registration / Course Registration Approval)

All approved registrations by faculties of those students who are having major as UGCS's area will appear on UGCS portal to approve/reject them. On rejection UGCS has to give remark in remark field and a mail goes to student with that remark informing him/her for 'Declination'. On approval a mail will go to faculty informing him/her about 'approval by UGCS'.

▪ Dean Approval (Last Level Approval):

(Home / Course Approval / Student Registration / Course Registration Approval)

All approved registrations by all UGCS of all students will appear on Dean Portal to approve/reject them. On rejection Dean has to give remark in remark field and a mail goes to student with that remark informing him/her for 'Declination'. On approval a mail will go to faculty informing him/her about 'approval by Dean and a mail go to student informing him/her about final approval.

e) COURSE DROP APPROVAL:**▪ Faculty Approval (Single Level Approval):**

(Home / Registrations / Course Drop Approval)

Faculty has to approve or reject course drop request by student. On approval course will be deleted from student's account.

9. Course Outline:

(Home / Course Outline)

Create course outline for current running term and all course faculties. Max marks (Internal max marks and external marks should be defined in syllabus course.

Points to be noted:

- ✓ If a course is being taught by more one faculty members then one faculty can have outline for one batch. That means if it is required that all faculties can have their own outline then make more than one batches. And outlines will applicable on students of their batches.
- ✓ Course outline validation on internal and external marks entry screen: total weightage of outline and total weightage of applicable syllabus course should be same.
- ✓ On course outline creation page system gets total weightage on the basis of terms of students in selected batch if batch is common or on the basis of term if batch is regular.

10. Internal Marks Entry:

(Home / Examination / Exam Valuation / Componentwise Mark Entry)

Select current academic year, term, course and batch. All students of that batch will appear on screen and you can give marks for those components for which 'Exam Required' check on course outline was not enabled.

11. Exam Marks Entry:

a) EXAM SETUP:

(Home / Examination / Exam Masters / Exam Setup)

Create and exam for current academic year and term. Please read Exam Setup related document for detailed info.

c) EXAM TIME TABLE:

(Home / Examination / Exam Scheduling / Exam Timetable)

Please read exam time table related document.

d) EXAM ELIGIBILITY:

(Home / Examination / Exam Scheduling / Exam Eligibility)

If exam eligibility is required then make students eligible for exam. Here you can apply eligibility criteria for overall attendance or course wise attendance or fee wise.

e) HALL ALLOTMENT:

(Home / Examination / Exam Scheduling / Hall Allotment – Seating)

If hall allotment is required then allot halls to students for each course.

f) EXAM ATTENDANCE:

(Home / Examination / Exam Scheduling / Exam Attendance)

If exam attendance is required then enter exam attendance of students.

g) EXAM MARK ENTRY:

(Home / Examination / Exam Valuation / Scheduled Exam Mark Entry)

Now go to exam marks entry screen and give marks to students against component for which exam is created.

11. Forced Grade Entry:

(Home / Examination / Exam Valuation / Finalize Grade)

For current academic year and term do course wise grade entry for each students.

Once it is done then freeze all grades.

13. SGPA/CGPA Calculation And Result Declaration:

(Home / Examination / Exam Valuation / GPA)

(Home / Examination / Exam Valuation / GPA)

Calculate SGPA and CGPA for each batch and declare result.

14. Grade Card Generation:

(Home / Examination / Exam Reports / Grade Sheet Generation)

For each student you can generate transcript.

15. Course Feed Back:**a) DEFINE FEEDBACK:**

(Home / Course Feedback / Course Feedback / Feedback Master)

You need to define course back definition here. And make it active.

b) ADD QUESTIONS TO FEEDBACK BACK DEFINITION:

(Home / Course Feedback / Course Feedback / Add Questions)

Now create questions either objective type or descriptive for feedback definition.

c) SET FEEDBACK FORM:

(Home / Course Feedback / Course Feedback / Set Feedback Form)

- **Create Feedback Form:**

After adding questions, need to activate the feedback form for the students.

You can set form semester wise, in this case select admission year, program and semester and click on save button. It will create feedback form for all

course faculties and corresponding batches of that semester. Or you can set form course faculty wise, in this case select admission year, program, semester and course faculty and click on save button. It will create feedback form for all corresponding batches (Regular or Common) of that course faculty. Or you can create course feedback batch wise, in this case select admission year, program, semester, course faculty and batch and click on save button. It will create feedback selected batch only.

- **Activate Feedback Form:**

Once all forms are created, go to search screen and select admission year and feedback definition and click on go button. All forms will appear there. You can activate all forms or some selected form at once by clicking on '**Bulk Activate/Extend Date**' button. For already active forms you can extend date from the same button. Or you can do it one by one by using action buttons against each setting. De-activation of forms can be done in same manner. In bulk by '**Bulk De-activate**' button or one by one.

d) **STUDENT'S FEEDBACK:**

(Home / Course Feedback)

After feedback forms are activated, students can receive alert on daily basis for which course their feedback is pending. They can go to course feedback module on their portal and can give feedback for selected course faculty.

Point to be noted: Student cannot edit their feedback once it is saved. Students can give feedback only for courses of their current semester and should be allocated in batch for which feedback form is activated.

e) **COURSE FEEDBACK REPORT:**

(Home / Course Feedback / Course Feedback / Course Feedback Report)

To view course feedback report admission year wise as well as academic year wise. Also report of all those students who haven't filled the feedback form.