

A NOTE ON

E-READINESS FOR LAUNCHING INSTITUTE OPEN COURSES_

1. TEAMS IN E-COURSE DEVELOPMENT AND MANAGEMENT

IIITM-K is now in an advanced state of readiness to launch web-assisted open courses for a variety of target learner-groups. Unlike classroom teaching that has rich informal processes, the open supported, web-assisted pedagogy is supported, delivered and managed by collaborative teams. Hence, a clear understanding of the roles and responsibilities of the different teams are essential. This document is proposed to all IIITM-K faculty members, staff and external members associated with different courses as a reference. It defines the roles of the different teams and provides the guidelines for the different teams involved in the systems and processes for launching open web-assisted courses. The target learner-groups include those studying in the institute, those employed in industry, teachers in the colleges and open supported learners.

There are the following three categories of teams involved in supporting and conducting open learning courses at different levels ranging from systems to instructional process management..

- (i) **PSG:** Professional Supports Group associated with technology support.
- (ii) **SME-CDT:** Subject Matter Experts and Content Development Team; and
- (iii) **ICM:** Instruction and Course Management team.

The three teams are respectively associated with the following services and tasks.

- i. **PSG:** PSG has two categories of professionals. The first – PSG-S (Systems) are the systems persons who have to ensure that all necessary systems are up 24X7. They also ensure that necessary applications are mounted and tested to be in their respective state of readiness for servicing the courses related processes. Thirdly, they ensure all content and systems configurations are properly archived in a form that allows swift recovery from crashes. The second are the PSG-C (Content) group. They shall look after live technical services associated with content mounting, keeping the different systems like Courses wiki, Moodle, databases of content developers and subject matter experts and registered participants, and alert systems for the different groups that received content are properly mounted, necessary alerts for the ACDT and ICM teams.
- ii. **SME-CDT:** Each course will have one ACDT team. The academicians in the ACDT are subject matter experts and proficient or well renowned in the field. The support persons associated with the courses are typically postgraduate scholars in the field in the field. Their role is to prepare the different components of content as per the pedagogic templates evolved under the Education Grid. They will use the support of the PSG-C to mount the content and announce the course readiness following the checklist of items and tasks to be completed.
- iii. **ICM:** The Instruction and Course Management team is the one that actually conducts the course. It is possible that some members may be common between the ACDT and the ICM teams. They have to be familiar with the instructional management processes in the open supported learning environment associated with their respective courses.

All the three groups referred above have to be in place at different stages from the preparation and launch of e-Courseware and to the instructional management and evaluation phases. We next summarize the different systems related to e-learning that have to be in place.

2. SYSTEMS FOR E-LEARNING

There are several systems involved in the delivery of e-course content, interaction and instructional management. The key systems are given below.

- i. **Education Grid Portal:** This is the anchoring and master portal through which all the e-learning programs announced, interfaces for content creators, publishers and organizers are provided, open introductory pages of every course are hosted, course wikis are maintained and contextual links to diverse e-resources are provided. The portal is already there. We need to bring a greater discipline in its imaginative and user friendly presentation, organization and management. All courses under preparation and those announced and running will be catalogued and indexed with necessary links in the education grid course pages. Its backend groupware and related facilities will be used to assist in the courses management.
- ii. **Course Wikis:** Each course under development or those released and used under different programs will have their areas in a master Education Grid wiki. The evolution of these wikis will have to be professionally steered. We have to ensure a team of Course Expert Group, or, Subject Matter Experts are solicited and assigned to maintain the quality of the wiki postings. While the wiki will provide the open freedom for anyone to edit, we need to maintain a non-erasable area for such content as approved by the CEG or SME. Each wiki will also host a thread of (non-erasable) suggested course events and schedule of learning and evaluation activities. Sample homeworks for practice and worked out problems may all be posted over the wiki. We may have to build metadata of useful hyperlinks for the postings in the wiki and maintain the same as another thread in the wiki itself.
- iii. **Recording of Video Lectures (RVL):** For all open supported lectures it is best that we record a full suite of video lectures, compress them in agreed format and make them available to registered users. A single DVD should be able to host 30 to 40 hours of compressed content. Each recorded lecture may also be posted as file download from a BSNL content delivery network or a portal with good web-server and bandwidth.
- iv. **Content upload, indexing, keywords preparation and abstracting services:** The Education Grid portal will have a content upload facility (we need to discuss its design) to receive complex content, getting it refereed, develop appropriate indexing/metadata posting, keywords generation and finally mounting the content properly linked to areas in wiki or relevant course pages. The OLIS team of our Library will be suitably augmented to undertake this task.
- v. **LMS Services:** While open course wiki is available for anyone to use, we will need an LMS for managing a course. We propose to run one instance of Moodle for every course that is password controlled access for the ICM team and the registered learners. The internal discussion forums, quizzes and other exams, class communications and other relevant course activities will use Moodle. At the end of a course, the Moodle contents will be parsed and relevant ones brought out into the open wiki.

IITM-K has all the above facilities. We now have to get the different groups working, developing and managing the different component systems to come together and learn to work in a manner that each is ensured the support of allied groups of professionals. This is a necessity to launch the open courses.

Next we outline the check list for launching and a managing our open courses.

3. CHECKLIST OF E-READINESS FOR LAUNCHING OPEN SUPPORTED COURSES

We recommend the following components to be ready before we declare a course to be ready for announcement. Some of these are applicable for in house classroom education also.

- i. **Subject Matter Experts Team and Course Proposal:** Each course will have a formally appointed SME Group. For the initial set of courses, let us have at least one SME from within the institute. The others may be co-opted from experts in industry, academic institutions or R&D organizations. Retired Professors or Scientists may also be made SMEs. The first step is that the SMEs prepare a comprehensive course curriculum, outline of course modules, suggested text and other reading

material, pre-requisites for taking the course, target learner groups and the weight the course carries. The document (in electronic form) detailing these will be presented before the faculty as the proposal for any course to be offered. Even those already established and run in the institute by our faculty will undergo this scrutiny.

- ii. **Development of Modular structure of the Course Curriculum:** At this stage, the SME should augment itself with a support staff of postgraduates in the subject. Once the course is given the go-ahead by the faculty, we need to prepare content for a course home page and a list of modules to be taught in the course. The course home page will have all details for candidates who will be potentially interested in taking the course. It has to provide course objectives, pre-requisites, target learner group, course fee (as applicable), important dates, and a facility for the candidates to register online. Further, each module in the course will also have details of instructional objectives, pre-requisites (or recall of what they need to know), pointers to learning and evaluation activities associated with the course. A template with a user manual for these is available in the Education Grid portal. The same may be used as a standard framework for preparing the modular outline of the course. The contents prepared under 3.1. and 3.2 will be handed by the SME-CDT group to the PSG, who in turn will have all the requisite e-learning system components ready for the course.
- iii. **Recording of Video Lectures (RVL):** Based upon the modular outline submitted, the subject matter experts will deliver lectures in our studio-cum-classroom. As and when these lectures are ready, they will be taken by the Media Services facility. The media services group will provide the different formats needed for content distribution. One copy of the same will be given to the OLIS (Online Library Services) group to prepare the necessary indexing, key words and abstract of the lecture and mount the same in the OLIS. This will be verified by the SME-CDT. The link for the same (or a line referring to play the lecture from a DVD distribution) will be given in the courses module pages.
- iv. **Creation of Course Wiki:** Once the items under 3.2 are received by the PSG and the OLIS details of the RVLs are received, we may launch the open course wiki. This gain will be moderated by the SMEs. We need to maintain the wiki as per the pedagogic structure outlined in 3.2. This will ensure better faceted navigation in the wiki and will help the study needs of the learners.
- v. **Development of Learning Activities and Evaluation Guidelines:** The real success of any course taught is to ensure that the learner has had the benefit of understanding at least some of the concepts in the contexts of the subject world and its real world understanding or applications. This is possible if we ensure that students do term papers, participate in group discussions, do some field survey or work as relevant, and actually see how a real world or subject world scenario is articulated in the light of what is taught. Such relevant exercises help the student to retain and appreciate what is taught. We expect the SMEs and experts in the field develop such content as case studies, references for term papers, modeling, simulation and practice as applicable. As and when these are developed, they may be mounted in a Moodle LMS, or in the open wiki as desired or suitable by the SMEs. We also link such activities to the corresponding learning modules.
- vi. **Course Announcement and Promotion:** Once the above stated parameters are met (i.e. 3.1. to 3.5) for at least 70 to 80% of the proposed curriculum, we may announce the course launch. Necessary promotional activities like brochures, web-ads, etc. may be undertaken.
- vii. **Course Management:** Since much of the steps related to course organization, processes and evaluation are already put down in the various components, the instruction team (that may be different from the SME and trained by them) will find the course management reasonably straightforward. Since the course is managed in real time, we need to effective learners feedback system and responsive instructional management team in place. We recommend that **Tutored Video Instruction (TVI)** is adopted for all outreach courses.

We outline the TVI method in the next section.

4. TUTORED VIDEO INSTRUCTION

TVI assumes that a full suite of recorded lectures is available for each of the learning modules. The NPTEL model for these lectures may be followed. Besides we also need to have the items in section 3 ready for each of the module. We also assume that an instructional team headed by a subject expert with a few course assistants, or, tutors are assigned to the course. The guidelines to conduct TVI are as follows.

- i. The course wiki will have a thread describing the schedule of learning modules and the learning activities to be practiced in each of them.
- ii. Learners will be assigned to different groups with 4 to 6 persons in each group. The groups will be kept as a unit throughout the course. Each group will be assigned a single PC for video lecture listening. A time table of group listening classes will be announced in advance. Attendance in these group-learning sessions will be made mandatory.
- iii. During the group lecture listening sessions, the lectures may be paused by anyone in the group, discussions encouraged and doubts. The notes of these should be taken by the listeners and posted in the LMS message boards.
- iv. On an average, once every week, the message board contents of the learners are collated and a tutorial-interaction session conducted in response to the doubts or comments expressed.
- v. The students will do relevant term papers, practice sessions and such recommended learning activities as recommended in the course wiki.
- vi. In parallel the learners carry out the recommended in the course wiki and participate in group-learning sessions moderated by a local tutor or facilitator.
- vii. We also need to design monthly (or periodic) evaluation tests and interactive sessions with the registered learners.
- viii. A final examination may be conducted and grades given on the basis of assessment of learning activities, quizzes and examinations.

TVI essentially removes the redundant part of the lecturing process. It also provides authenticity to the course process as it is prepared by the SMEs. Hence it directs the energy of the instructor for attention to students' feedback, their performance and evaluation. It also allows students to review lectures whenever they have time. For this, we may provide facility of copying the lectures in thumb drives or iPods and play them on a notebook or a suitable system at home or place of convenience. Peer learning is made possible by disciplined group interactions. The e-course content in wiki and well-maintained course schedule therein support the TVI related learning-teaching processes.

We have access to a large number of NPTEL RVLs in courses for engineering. A few of our courses – DSA, Chemistry, POP, GIS, and Web-Tech are readily offered in this open supported mode. Faculty members are requested to come forward with course proposals for institute's outreach and finishing school programs.

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