F.No. 8-1/2015-TEL
Government of India
Ministry of Human Resource Development
Department of Higher Education
(TEL Division)
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216-D Shastri Bhawan
New Delhi, dated 11.03.2016

Subject: Guidelines for Development and Implementation of Massive Open Online Courses (MOOCs) – reg.

The undersigned is directed to enclose herewith a copy of Guidelines for Development and Implementation of Massive Open Online Courses (MOOCs) for information & necessary action.

(K. D. Verma)
Under Secretary (TEL)
TEL No. 011-23073582

To,

1. Prof.Ved Prakash, Chairman, University Grants Commission (UGC)
2. Prof. Bhaskar Ramamurthi, Director, IIT Madras.
3. Prof. Rajbir Singh, Director, Consortium for Educational Communication (CEC)
4. Prof. Nageshwar Rao, Vice Chancellor (I/C) & PVC, IGNOU, New Delhi
5. Dr. Hrushikesh Senapaty, Director, NCERT
6. Prof. Chandra Bhushan Sharma, Chairman, National Institute of Open Schooling (NIOS)

Copy to:-

1. Sr. PPS to Secretary (HE), M/o HRD
2. Sr. PPS to Additional Secretary (TE), M/o HRD
3. PPS to JS & FA, M/o HRD
4. PS to Director (TE), M/o HRD
5. PS to DS (ICT), M/o HRD
6. Shri Pradeep Kaul, Sr. Consultant, NMEICT, M/o HRD

MOOCs
Massive Open Online Courses
An initiative under National Mission on Education through Information Communication Technology (NME-ICT) Programme

Guidelines
for
Development and Implementation of MOOCs

Ministry of Human Resource Development
Department of Higher Education

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Contents

BACKGROUND AND PERSPECTIVE

Whereas, with a view to providing access to the best quality learning resources across the country, the project 'Study Webs of Active Learning for Young Aspiring Minds' (SWAYAM) has been started. SWAYAM provides an integrated platform and portal for online courses, using information and communication technology (ICT) and covering High School till all higher education subjects and skill sector courses to ensure that every student benefits from learning material through ICT. SWAYAM is a:

1. One-stop web and mobile based interactive e-content for all courses from High School to University level.
2. High quality learning experience using multimedia on anytime, anywhere basis.
3. State of the art system that allows easy access, monitoring and certification.
4. Peer group interaction and discussion forum to clarify doubts
5. Hybrid model of delivery that adds to the quality of classroom teaching.

Whereas, SWAYAM involves development of Massive Open Online Courses (MOOCs) compliant e-content (video and text) and building a robust IT platform. These guidelines pertain to the quality of the e-content produced for the SWAYAM.

Whereas, Under NMEICT, NPTEL (a group of 7 IITs and IISc) developed e-content in 23 Disciplines numbering 933 Courses. CEC has so far completed the development of e-content in 29 Undergraduate subjects and shall further be completing e-content in 58 Subjects in four quadrants. UGC is in the process of completing e-content in 77 Post Graduate subjects. Similarly, many other institutions are engaged in development of e-content.

Now, with a view for systematic development of the MOOCs for the SWAYAM, the following guidelines which propose to lay down technical and production standards for the e-content have been issued:

1. DEFINITIONS:

1.1. In these guidelines, unless the context otherwise requires, the following words shall have the following definitions:
a) 'Course' shall mean a paper, which is taught for at least one semester as a part of a subject/programme.
b) 'Four quadrant approach': the four Quadrant approach means e-learning system that has the following components:

- Quadrant-I is e-Tutorial: which shall contain: Video and Audio Content in an organised form, Animation, Simulations, video demonstrations, Virtual Labs, etc.
- Quadrant-II is e-Content: which shall contain: PDF, Text, e-Books, illustrations, video demonstrations, documents and Interactive simulations wherever required.
- Quadrant-III is Web Resources: which shall contain: Related Links, Wikipedia Development of Course, Open source Content on Internet, Case Studies, books including e-books, research papers & journals, Anecdotal information, Historical development of the subject, Articles, etc.
- Quadrant-IV is Self-Assessment: which shall contain: Problems and Solutions, which could be in the form of Multiple Choice Questions, Fill in the blanks, Matching Questions, Short Answer Questions, Long Answer Questions, Quizzes, Assignments and solutions, Discussion forum topics and setting up the FAQs, Clarifications on general misconceptions.

c) 'MOOCs': Massive Open Online Courses (MOOCs) are such online courses which are developed as per the pedagogy stated herein and following the four quadrant approach.

d) 'National Coordinators (NCs)': National Coordinators are the Institutions that have been so designated by the Ministry and assigned with a specific sector to cater to MOOCs.

e) 'Principal Investigator (PI)': The PI shall be a Subject Matter Expert (SME) belonging to a reputed educational institution, identified and entrusted with the task of developing MOOCs in a given area by the NC.

f) 'Sector' shall mean a particular level of learning such as high school, engineering/non-engineering diploma/degree/post-graduation.

g) 'Subject' shall mean a discipline (Example: Physics) taught in an educational institution consisting of specific programme/courses, resulting in the award of a certificate/diploma/degree.

2. NATIONAL COORDINATORS

2.1. The following shall be National Coordinators for each of the Sectors for the purpose of development of the e-content for SWAYAM:

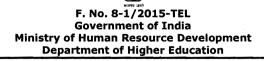| S. No	National MOOCs Co-ordinator	Sectors
1	University Grants Commission (UGC)	Non Technology Post Graduation Degree Programme
2	NPTEL	Technical / Engineering UG & PG degree programme.
3	Consortium for Educational	Non Technology Under Graduation

	Communication	degree programme.
4	IGNOU	Diploma and Certificates
5	NCERT	NCERT (classes 9th to 12th)
6	NIOS	Open Education (classes 9th to 12th)

3. SCOPE OF SWAYAM

3.1. The SWAYAM shall cover the following:
   a) Curriculum based course contents covering diverse disciplines such as arts, science, commerce, performing arts, social sciences and humanities subjects, engineering, technology, law, medicine, agriculture etc. in higher education domain (all courses would be certification-ready in their detailed offering).
   b) School education (9-12 levels) modules; for teacher training as well as teaching and learning aids to children of India to help them understand the subjects better and also help them in better preparedness for competitive examinations for admissions to professional degree programmes.
   c) Skill based courses, which cover both post-higher secondary school skills that are presently the domain of polytechnics as well as industrial skills certified by the sector skill councils of various Ministries.
   d) Advanced curriculum and professional certification under a unified scheme in higher education domain that can be tailored to meet the demands of choice based credit system (CBCS) currently being implemented in India at undergraduate level.
   e) Curricula and courses that can meet the needs of life-long learners of Indian citizens in India and abroad.

4. AWARDING THE COURSES:

4.1. The National Coordinators (NC) shall ensure that work of converting a course into a MOOC shall be done in a comprehensive manner, such that there is complete coverage of all the courses in a subject/programme.
4.2. Each course in a subject shall be awarded to a reputed institution (defined as Principal Investigator) in such a way that there shall be no duplication of work.
4.3. The institution chosen to convert a course into MOOC (Principal Investigator (PI), shall follow the model curriculum prescribed by the Regulator. However, the curricula should be updated to cover all recent developments in the field, if the model curriculum is more than 5 years old.
4.4. The NC shall ensure that the PI engages the best of subject experts in the country.

4.5 'MOOCs National Committees (MNC)' consisting of Technical Experts, Academicians, Administrators etc., shall be constituted by the MHRD. Mission Director, NMEICT, shall chair the MNC. The MNC shall be an arch Committee to oversee the SWAYAM & MOOCs activity under MHRD, it shall be the Monitoring and Implementations Committee, to recommend funding requirement of NCs, approve projects submitted by the National MOOCs Co-ordinators & other PIs for implementation & funding by MHRD, establish & supervise Examination Centres, recommend weightage of MOOCs Courses in the conventional Teaching Programme, including Credit mobility across educational Institutions.

5. PROCESS LEADING TO DEVELOPMENT OF e-CONTENT

5.1 The National Coordinator ensures that the best teacher in the Country is selected to work as the 'Principal Investigator' or 'Subject Matter Expert (SME)'.

5.2 Each PI/SME will identify his/ her team of teachers with proven abilities and allocate modules to them.

5.3 The selected teachers, if necessary, are trained in a Workshop on the modalities and the quality standards for recording, which include:
   a) Defining the Course design, pre-requisites and expected outcomes
   b) Splitting the course into weeks and short modules
   c) Preparing quizzes for each lecture for self-testing
   d) Weekly assessments and assignments
   e) Discussion forums to answer questions online.
   f) Practice offering of MOOC for training and course delivery.

5.4. The team prepares the content, based on the model curriculum prescribed by the Regulators; updated with the recent developments in the field. In the case of a new course, a team of experts will arrive at a suitable curriculum. This may involve repurposing the e-Content created elsewhere.

5.5.Studios are allocated for recording and for creating multimedia for the course. Each module normally takes a week to prepare.

5.6.The National Coordinator should put in place a system for pre-viewing the e-content created by experts and stakeholders.

6. TECHNICAL SPECIFICATIONS FOR CONTENT DEVELOPMENT

6.1. A SWAYAM Course shall be classified based on number of weeks of engagement and number of hours of video. A Course shall be about 40 Hours of duration that includes about 20 Hours Video and multimedia e-Content deliveries. The production process of content / e-Content development should meet highest industry standards, both in technical and academic terms. All

Implementing Agencies shall therefore ensure that the Technical Guidelines are strictly followed and should use professional equipment, with very good quality cameras and editing units. Following technical guidelines shall be followed:

a) The content like Assignments, Glossary, downloadable PDFs, and DOCs etc. should be saved in database directly in binary formats. This will add content utility transforming it from static to dynamic for future warehousing purposes. This will facilitate revisions dynamically via database to allow regular updation and help in using the advanced text search engine facilities present in all enterprise level databases.

b) Content should be developed in an open platform with a combination of HTML 5 + Angular JS based engine template. Animations already created in applications such as Flash need to be imported in the e-Content. Even though animations get created in applications such as Flash they need to be imported in the e-Content.

c) The Cameras and the Recorder used, shall follow at least the following standards: Three 1/3" type; Full HD CMOS sensors; PAL color, CCIR-B standards; HDTV 1080/50; Gross Pixels > 2 Million; camera to have a resolution of 750 TVL or better; Proxy Video: MPEG-4 AVC/H.264, 3.5 Mbps MP4; Aspect Ratio 16:9; Audio: AAC 2ch, 16bit, 48kHz, HD/Standard Definition DV Recording.

6.2. Editing processes & Standards.

- Video recording format: Full HD 1920x1080 pixels.
- Videos aspect ratio: 16:9 (widescreen).
- Module Delivery: 1920p following MPEG-4 AVC Compression.
- Audio Channel 1 to have Mixed Audio Track.
- Font size: Heading: 24-30; Sub-heading: 22-26; Body: 20-24;
- Full screen Video Frame.
- All graphs and diagrams must have clear font.
- The expert/teacher should speak extempore as delivery made in case of class-room set-up and avoid reading from written material or a Teleprompter.
- Video frame to maintain 6-8% headroom;
- Video quality and Audio levels should be constantly monitored while recording.
- PI should provide two video files, one in raw format and other in compressed format.
- Voice modulation be taken care of and the voice should remain same throughout the video as in a classroom situation. Two voices in the same video for lecture and slides may be avoided. However, video clips or audio clips from eminent experts can be used.

7. RESPONSIBILITIES OF SUBJECT MATTER EXPERT (SME)

7.1. The following shall be the responsibility of the SME:

- SME should provide PPTs of at least 25-35 slides before the recording. Provide relevant images, storyboard, animations, graphics etc., before recording.
- Text files in a Course shall be sufficient to bring in all material required by an average student and shall be around 3000 words for one hour content.
- Instructional designer may also be involved for incorporating multimedia inputs.
- It is not necessary that the teacher in camera be shown thought, however, the teacher in camera may appear upto 25% of the time, rest of the time, the timeline may carry teacher's voice on which graphics, animation, text etc may be inserted.
- Faculty presenting the video should come prepared for recording and speaks slowly on recording; speak extempore like deliveries in a classroom; use of Teleprompter may be avoided; the SME should review the modules before and after recordings.

8. RESPONSIBILITIES OF MULTIMEDIA LAB

8.1. The following activities are to be carried out by the multimedia labs:
- Transform the presentation slides to standard template provided by the MHRD and use standardized fonts, colours, text etc.
- Provide Instructional designing; add general images from stock, graphics, animations etc., (as per the need)
- Should record with high quality (1920X1080) video and excellent quality noise free audio. All the Video's must have 16:9 Aspect Ratio (widescreen).
- Video quality and Audio levels (in 0 db) should be constantly monitored while recording.
- Submission of content in raw as well as compressed file in hard disk is to be provided.

9. REPURPOSING THE E-CONTENT

9.1. All courses from School level to the Post-graduate level created under NMEICT, NIOS, NCERT, UGC etc., in the form of e-Courses with interactive e-Content shall be made available to e-Acharya for use in SWAYAM programme. Available content will need to be repurposed into MOOCs compliant format and hosted on the SWAYAM platform. This will comprise more than 2.5 lakh hours of course content. The repurposing consists of the following:
a) Adding four Quadrants, and sufficient numbers of auto-graded quizzes, assignment, case studies, field exercises to the e-content already developed under NMEICT.
b) Indicate the purpose of the course (each paper to be considered as a course) and the target audience.

c) Indicate the objectives for offering the course along with the pre-requisites for determining eligibility to enroll in the MOOCs course.

d) Sequencing the modules prepared for a specific paper (course) so that the course flows in a proper order.

e) Adding a five-minute video by the course coordinator (who may be identified for offering the MOOCs course) to give the course overview, while summarizing the course contents, objectives, pre-requisites and learning outcomes.

f) Specify broad learning outcomes of the course (paper).

g) Indicate assessment and evaluation procedure.

h) Translation of content into regional languages: Efforts shall be made to transcribe videos to enable translation of all text and then dub the voice; in as many Indian languages as possible. For this purpose, the services of Bharatvani, CIIL & other institutions can be used.

i) The PI may keep discussion forum activities ready to be released at the time of MOOCs launch.

10. FEATURES OF MOOCS COMPLIANT E-CONTENT

10.1. The MOOCs compliant e-Content shall follow a standardized template (which will be provided by the MHRD). Uniform look and feel is required to be followed by all PIs and shall also have instructions on logo etc.

Pre- Planning Requirements

10.2. Before MOOC content is created, the following pre-planning steps are critical and must be taken care of:

a) Identify the purpose of the course and the target audience.

b) Create a timelines with detailed tasks to be accomplished.

c) Identify the objectives for offering the course, along with pre requisits.

d) Determining the optimum time frame for the course, and conceptualizing a course design (such as open, structured, or non-linear) and release format (for examples releasing all the content at launch or releasing it on a week-by-week basis).

e) Specify broad learning outcomes.

f) Decide assessment strategy and the level of achievement to be considered acceptable for receiving a course completion certificate.

Core Elements of a MOOCs

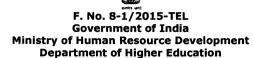10.3. Elements for the overall course should include:

a) Syllabus Template (including a course description with key learning outcomes, descriptions of faculty, a detailed course content outline, expectations for participation, certification, and faculty communication, netiquette guidelines, and academic integrity).
b) Pre- and post-course surveys
c) Course overview to orient students on: What is the course about? What does the course include? What will I learn in the course? How do I use the course features?
d) Course timeline for scheduling learning activities (week-wise detailed plans)
e) List of Announcements to deliver reminders for due dates and course transitions.
f) Instructions on synchronous and asynchronous engagement (prompts for students to post in the Discussion Forum, polling questions throughout the course, interaction with faculty/ TA (eTutor) as per instruction)

10.4. Elements for the course Landing Page must include the following:
a) Welcome text and video from lead faculty,
b) Faculty/ TA (eTutor) details (brief CV and contact details),
c) Links to course surveys,
d) Guidance on how to get started as a student in the course,
e) Handouts section including syllabus and learning checklist,
f) Course Timeline.

Section-level Course Structure

10.5. Each course may be divided into week wise sections as per the course plan. Each week of the course to comprise a lesson with a single topic or themed topics with specified learning outcomes. A 1 to 4 credit SWAYAM course is expected to be covered in 4- 12 weeks' duration including the assessment component in which (it should be 40 hours (for 3 credit course) to 90 hours (for a 6 credit course) for the full course) of learning from e-Content, reading reference material, discussion forum posting and assignment. Faculty will need to work out lesson plan for each week with the following components:
a) Introduction including learning outcomes.
b) Direct instruction delivered primarily through transcribed video content with learning objectives and faculty-provided notes. Uniquely-created handouts may also be used for direct instruction, supporting e-Content with graphics and animations, case-studies wherever essential
c) Provide list of core and supplementary reading list. Other course resources may be provided via Web links
d) Auto-graded quizzes, Self-assessment questions where students compare their answer against an instructor-written response and grade themselves
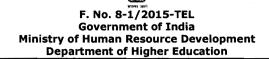
e) Discussion threads can be used to effectively engage students, who may communicate in discussion board threads each week on key course concepts. These discussion forums are best focused on a case study, problem, or question(s) pertinent to the lesson and should allow participants to share ideas and debate topics

f) For lessons in which students can appropriately practice skills or concepts, short interactive tools/ social media can effectively supplement other course material

g) Aligned formative assessment questions for each week's lesson comprising both objective questions (such as multiple choice, multiple mark, numerical input etc.) as well as subjective questions. Formative assessments may include ungraded reflection papers, quizzes that can be re-taken, discussion forum responses, concept-maps, as well as self- and peer evaluations that are meant to help student improve or identify gaps and weaknesses.

h) Conclusion and Forthcoming section to include week's summary and what to expect next week.

i) Feedback mechanism for faculty and/or TA to respond to the questions from students.

10.6. Week Plan Template:
The following is the suggested week plan template for a MOOCs:

Week 1:Introduction Learning Outcomes		
Content	**Activities**	**Assessment**
Video/s Multimedia e-content (inclusive of graphics/ animations/ scenarios/ case-study) Textual Handout Reading list (core and supplementary)	Assignments Discussion Practical assignment (as per requirement) Any other...	Quiz Peer Assessment Any other...
Week 2: Introduction, Learning Outcomes		
Content	**Activities**	**Assessment**
Video/s Multimedia e-content (inclusive of graphics/ animations/ scenarios/ case-study) Textual Handout Reading list (core and supplementary)	Assignments Discussion Practical assignment (as per requirement) Any other...	Quiz Peer Assessment Any other...

Hosting the e-Content

10.7. All content in the form of MOOCs & e-Content being developed under NMEICT/MHRD shall be hosted at 'National Integrated Portal (NIP)' (also called e-Acharya) a Data Centre hosted at INFLIBNET, Gandhinagar. The NIP shall be linked to NME-ICT Cloud called 'Baadal' hosted at NIC, which shall be upgraded to support 3 Crore users, with a 10 Lakh concurrent connections. The up gradation of 'Baadal' shall include establishing additional Data Centres and adding CDN system to deliver the video content, so that the system would be geared up to meet the massive demand for e-Content.

11. INSTRUCTIONAL SYSTEMS for DESIGN OF MOOCS

11.1. MOOC design and development needs to be carried out by the following instructional systems design principles. The systematic and logical steps of any instructional system design are:

A) Analysis:
- **Need analysis:** Need of offering the course via MOOC, possible target reach and significance of the courses is to be established so as to justify selection of courses for the MOOC.
- **Content analysis:** Preparing raw content with the use of reference books, articles, research papers, collection of illustrations, diagrams, etc.
- **Learner analysis:** Defining prospective learner profile, essential entry knowledge.

B) Design:
Course Outline: (Main and sub-topics). Structure of topics, sub-topics with appropriate sequence in hierarchical manner will be output of this exercise.

C) Objectives: Course Objectives, Module Objectives in terms of Performance Outcomes will be output of this task. Performance objectives may be many and each objective will express learner's achievement only in one small area.

D) Instructional Strategies: Specific learning activities for effective training (e.g. case-studies, scenarios, cartoon-strips, analogies, individual or group activities, concept-mapping, in-text learning quizzes, interactive exercises within learning modules, discussion forum topics, blog-postings, etc.) will be planned at this stage. Treatment of MOOC will mainly depend on the planning of this stage.

E) Instructional Material: Nature of Material in light of designed strategies will be planned at this stage. The material may comprise instructor's videos supported with slides, interactive multimedia consisting of graphics, animations, documentaries, recorded demonstrations, dramatized scenarios,

cartoon strips, 3D models and animations, info-graphics, diagrams, sketches, maps, screencast videos, slides with audio narration, etc.

F) **Summary:** Summary in innovative formats (e.g. Info-graphics such as concept-maps, flow-charts, sum-up videos, text-based summary, etc.)

G) **Evaluation Strategies:** Specific assessment and evaluation exercises, activities for formative assessments and module-end exercises, summative auto-graded tests, assignments for self-check and assignments for eTutor feedbacks will be planned at this stage.

H) **Detailed time-wise Course Session Plan** to define week-wise activities will be designed once all strategies and material is finalized. Here, mapping all content, activities, tests with time-line will be done. Final selection of activities, assignments, tests will be done only in the light of available time duration for each module. Available time duration will depend on the credits assigned to the course and its modules in the syllabus.

I) **Implementation:** Actual Implementation with the proper announcement of course, availability of detailed course documents will be done only after all of the above stages are systematically carried out.

J) **Duration of the course:** The duration of courses will vary depending on the level and credit points. Courses in any one of the following formats may be offered:

- 4-10 weeks for shorter courses for 2 to 3 credits at certificate level or for teacher training programme.
- 12-16 weeks for CBCS programmes with faculty/mentor support from participating institutions/affiliations of 4-to 6 credits at diploma, UG and PG level.

11.2. One credit will be equivalent to 13-15 hours learning covering going through the course content, participating in discussion forums and other interactions, working on assignments and activities designated for the course etc.

11.3. Each week learning activities will cover going through eContent, supplementary reading. The lectures/ topics are to be broken up into short modules. Each module will have the following components:

- A clear description of its contents and expected learning outcomes.
- Objective-type assessments (to be auto-graded or assisted by Teaching Assistants (TAs)/Mentors as the case may be)
- Activity/ assignment
- A discussion topic discussed extensively in the course discussion forums.

11.4. A team of Instructional Designers may assist SMEs (Subject Matter Experts) for designing systematic instruction based on raw content, activities and exercises provided by instructors. A team of graphics and multimedia designers

may assist in creation of graphics and multimedia. These teams can work in-house strengthening institute's eContent development skills.

12. FINANCING THE MOOCS

12.1. The MHRD would finance the creation of MOOCs Compliant fresh e-content as per the 4-quadrant approach as given below:

S/No	Activity	Repurposed Content	Fresh Content	Remarks
1	Cost of a course. Cost includes videos recording & editing totaling 20 hours, quizzes, answer keys, subject additional links, additional notes and transcript of the text of all videos in English.	Rs 6.0 lakh	Rs. 9.0 lakhs	An existing NPTEL /UGC or other 40-hour course can be usually offered as two MOOC courses connected back-to-back for credit transfer with institutions.
2	Coordinator honorarium for preparation.	Rs. 2.0 lakh.	Rs. 2.0 lakh.	One-time payment
3	Coordinator Honorarium for running the Course (1st time): for the content creator and the faculty offering the course.	Rs. 1.0 lakh.	Rs. 1.0 lakh.	
4	Coordinator Honorarium for subsequent running of the course (after the 1st time).	Rs. 1.5. lakh	Rs. 1.5. lakh	Teacher presence and monitoring of active learning needed until exams are conducted and certificates issues. Three-month participation.
5 (a) or (b)	TA / mentor honorarium (500 active registrants, one TA for two months), 5000-10,000 active registrants, 5 TAs. For a course having 10,000 to 20,000 registrants effective monitoring of website and discussion forums is the main job.	Rs. 0.3 lakh Rs. 1.5 lakh	Rs. 0.3 lakh Rs. 1.5 lakh	Assumption: less than 10 percent of active learners participate in discussion and raise questions, doubts, request additional learning material etc.
6	Course Examination fee. Tendering possible for identification of centres where simultaneously more than one exam can be conducted.	Rs. 1000 per candidate per course unless tenders are floated.	Rs. 1000 per candidate per course unless tenders are floated.	GATE model is the working model- tender for a limited period of time is used to award contract for online exam services and scanning and storing of answer sheets for evaluation by humans if

				necessary.
7	Course Reviewer Honorarium. Two reviewers, both of whom peers and academic faculty with reputation and with experience in the area	Rs. 15000 per course.	Rs. 15000 per course.	Reviewer panel will be nominated by the subject-specific committees constituted for MOOC.
8	Human Resource support for Course. Not more than 5 technical project staff for supporting the course management	Rs. 2.0 lakhs per institute offering 20 or more MOOC courses at a given time.	Rs. 2.0 lakhs per institute offering 20 or more MOOC courses at a given time.	It is an administrative expense and must be approved each time by the national committee recommending MOOC programmes.
9	Workshops About 5-10 workshops are immediately needed for updating faculty with tools and technologies for certification on-line. 60 to seventy five participants, restricted to those who travel from within 200 -300 km radius of the site for workshop	Rs. 5 lakhs per workshop, or pro rata	Rs. 5 lakhs per workshop, or pro rata	Three days, including travel, honoraria for organizing team (Faculty, mission staff and mission consultants who are involved in the organization) and contingent expenses.

13. QUALITY ASSURANCE

13.1 Quality, one of the key elements of MOOCs, shall be monitored throughout the design, development and delivery cycle of the MOOCs. Quality shall be managed at the offering institution / MOOCs offering team level while creating the content.

13.2. Quality assurance at the individual institution/ MOOCs team level shall have:-
• Content checks to be ensured while developing the course content for plagiarism and source of information.
• General course curriculum/standards to be followed for the credited courses while ensuring that updated knowledge is being imparted to the students.
• Suggested course plan for better management.
• Suggested language and formatting style and suggested image pools to be used.
• Suggested production parameters and video quality parameters.
• Suggested assessment types and style.

13.3. Overall quality assurance before scheduling the course for delivery shall have:
• Final typos and grammar checks.
• Video quality checks.
• Brand language/ message (i.e. in keeping with MOOCs guidelines).
• Pedagogy and learning experience.

- Formatting of text and images.
- Ensuring the presence of basic MOOCs elements like video/e-Content, discussion forums, Interactive elements, assignments, assessment methodology etc.

13.4. While building a MOOC on SWAYAM, course team shall take care of the following aspects:
- Accidental mistakes, integrity of content, outdated information, inaccuracies and inconsistencies in the videos and other course content.
- Double-check the veracity of the answers to questions with determined answers (e.g. multiple choice, dropdown etc.) with regards to assessments.
- Check that all author names, readings, etc. are accurately represented on course resource pages and other content.
- Check for any broken links, missing pages, images, multimedia component both at course as well as content level.

13.5. Quality assurance and testing of the completed course shall be put in place in the SWAYAM platform. This will include running through a trial version of the course to check for any misplacements of content, functionality of all interactions, and functionality of all links.

14. INTELLECTUAL PROPERTY RIGHTS /COPYRIGHT HANDLING

14.1. The course team will have to obtain copyright clearance for any readings, images, and video clips used as core and supplementary reading in case of licensed material if used. Until clearance has been obtained, direct references to specific materials should be avoided in video content or other course material.

14.2. All contents (text, audio, video, animation, quiz etc.) developed with the funding of NMEICT will be the property of SWAYAM. However, the content created prior to the issue of these guidelines shall continue to follow the provisions of the agreement under which such content has been created.

14.3. All courses and contents posted in SWAYAM will be copyrighted to SWAYAM. Ministry will, from time-to-time, announce policies for access and charges if any (for certification) and will also publish appropriate Open Educational Resources policy in consultation with other national and international bodies.

14.4. The terms of service should be clearly laid out so as to address the following key points by the PI:
- Any disclaimers should be clearly spelt out.
- User /student/ institutions should be informed about the usage rights of the course content available on SWAYAM.

15. ASSESSMENT AND CERTIFICATION

15.1. The decision to use different types of assessments should be based on the stated learning objectives and shall be taken by the PI offering the course. Ideally, courses will offer both formative assessment to promote deeper learning, critical thinking and reflection, in combination with summative assessments designed to gauge student achievement and/or performance. Summative assessments may include graded quizzes, reports or projects, peer assessments or proctored examination.

15.2. The assessment strategy should align with learning outcomes shall be clearly spelt out. It should include relevant assessments (exercises, in-lecture quizzes, post assessment quizzes, etc.) along with their respective weightage. It should also lay down methodology for holding a proctored examination in case of credit-based courses.

Assessment Options

15.3. Some Homework and Assessment Options are
* Multiple choice test if applicable (quiz tool)
* Homework assignment (quiz or programming assignment)
* Write a commentary, review, comparison, analysis, and observation within your community, reflection or other for homework (peer assessment).
* Response to a text, video or other media object for homework (peer assessment).
* Prepare a presentation on X and upload (text, photo, video, PPT).
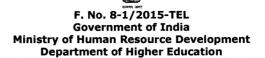
Peer Assessment

15.4. Peer Assessment can be an important element of student assessment. The courses which plan to use peer assessment should develop a rubric which aligns with learning outcome. Here we have an example which lists the dimensions of rubric for reflective writing piece.
Example dimensions for a reflective writing piece
* Depth of reflection
* Use of textual evidence and historical context
* Language use

15.5. Learners can get a certificate after they have attended the classes and submitted the assignments/quizzes. For credit-based courses, an accepted and approved evaluation format in alignment with CBCS or any other system that UGC, AICTE, etc. may implement from time to time, with a term/semester end proctored examination, ideally at the computer lab of the institution where the students is

enrolled or at an institute close to the one where the student is enrolled. The exam may be conducted nationwide through an exam partner. Learners can get a certificate after they have registered for, written the exam and successfully passed. The online assignments/quizzes may carry weightage in the final consolidated score.

15.6. The service providers of MOOCs will offer the courses free through open access mode but charge for the service of proctored examination. This practice will be followed in this until such a time new policy announcements are made. A certifying body for each discipline will be created by HRD with the help of participating institutions. It is recommended that the Institutions which offer the course will follow a general requirement and issue certificates with their names and the SMEs on each certificate with SWAYAM explicitly appearing on the logo of the certificate and the Ministry's support to the project and guidance being endorsed.

15.7. Efforts must be made to include industry or industry bodies as partners in the certification process. This creates important added value for the students. Wherever possible, education and R & D team members from the industry need to be included in the design of course contents and problem sets. However, problems may be of a generic nature and specific practices of participating industries should not be used as contents.

Conducting the Examination

15.8. SWAYAM organizing /implementing team will designate staff for the conduct of proctored exams and will take care of the logistics of conducting the certification exam. About 1000 Centre shall be established to conduct SWAYAM exams across the country. The faculty will have to create at least one question paper for the mock exam and one or more equivalent examination papers for the final certification exams.

15.9. A proctored exam by definition is an exam that is administered by an individual who supervises the student while they are taking the exam. The proctor's function is to ensure the integrity and security of the exam in a secure environment. To ensure the validity and acceptability of the CBCS credits offered by the Credit offering Digital online courses (MOOCs) a scheme of Final proctored exam, with assigned weightage as per assessment design, can be used in final assessment of the students.

15.10.The MOOCs platform will have the following facilities for the proctored exam:
- Student can be prompted to register for the proctored test via a registration link available on the course Assessment page on SWAYAM platform.

- The procedures for registration for the Proctored exam can be kept simple and self-explanatory with minimum required details from student end.
- The Exam proctoring/ conducting charges and fee structure should be explained to the student in advance via the course page and introductory video.
- Provision for offline mode(s) of payment should also be kept for the students who prefer offline payment and receipt.
- Provisions for Rescheduling and Canceling the Exam should be provided to the student and Course instructor both. Proper email communication channels can be employed to immediately inform of the exam schedule changes.

15.11. A set of institutions/ Universities/ Colleges who would be part of the MOOCs initiative can also offer to proctor the exams. This can provide an option for the pan India coverage, including remote areas. Student can select his/her center from the available institutions for exam. An agency or a set of central professional proctoring agencies can be given the contract to proctor the exam for all the MOOCs offered on the SWAYAM platform.

Certification and Credit Sharing

15.12. On successful completion of each course, the institution offering the MOOCs course would issue the certificate, along with the number of credits and grades, through which the student can get credits transferred into his marks certificate issued by his parent institution.

15.13. Guidelines for credit sharing will be issued by concerned Regulators such as UGC, AICTE, etc. for consideration by various Institutes. There may be standard norms for the host Institution to conduct the course that may include continuous evaluation through assignments, online quizzes, case studies, online writing exercises, term examinations, student feedback, online forum management, etc. Results should be declared within one month of the completion of the Course. Priority can be given to students taking the course for credit over those who participate for learning only.

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