



Development and Delivery of MOOCs

**Consortium for Educational Communication
IUAC Campus, Aruna Asaf Ali Marg
New Delhi – 110067**

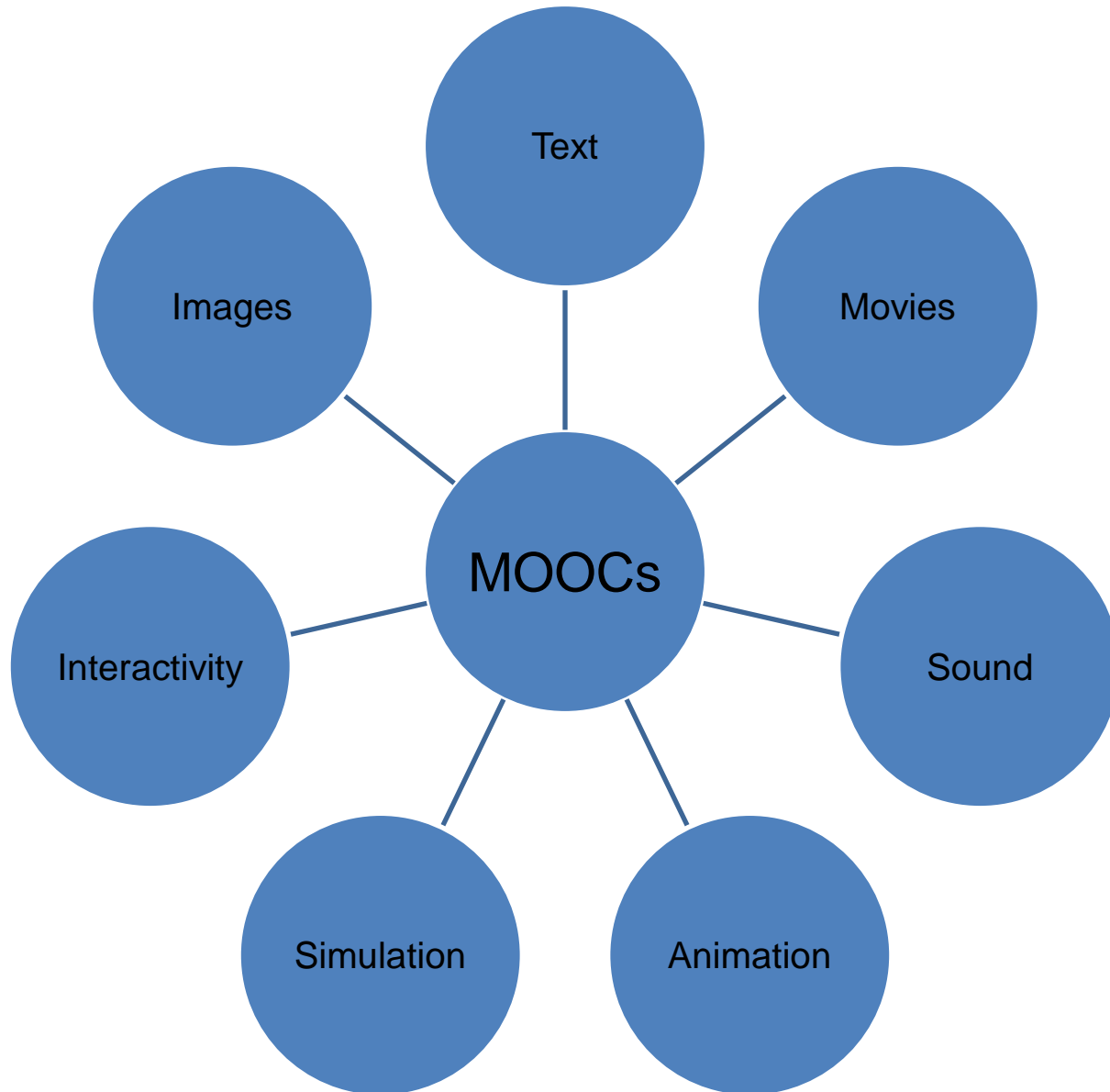
**Nageshwar Nath
Joint Director (HW)
Email- nagesh.cec@gmail.com**

*Part-2 Development/Production
of MOOCs*

Key Points

- Forms of E learning
- Role of People involved in Development of a MOOC
- Difference between Traditional and New Technology
- Four Quadrant Approach
- Approach for MOOC Development- Instructional Design
- Guidelines to Course Coordinator
 - Regarding Video Production (Q1)
 - Regarding e-Text Development (Q2)
- Course Review and Approval
- Preparations to be done for Offering the Course

Forms of Content Elements



Traditional Learning Environments

- Teacher centered instruction
- Single sense stimulation
- Single path progression
- Single media

- Isolated work
- Information delivery
- Passive learning
- Factual, knowledge-based
- Reactive response
- Isolated, artificial context

New Learning Environments

- Student centered instruction
- Multisensory stimulation
- Multipath progression
- Multimedia

- Collaborative work
- Information Exchange
- Active/exploratory/inquiry based learning
- Critical thinking and informed decisions
- Proactive / planned action
- Authentic, real-world context

Abilities that can help but not essential

- **Creating and Editing Text**
- **Creating Diagrams, Graphs, Charts, etc.**
- **Drawing pictures**
- **Recording sound**
- **Shooting Video Clips**
- **Creating special effects**

Role of Course Coordinator

‘Course Coordinator (CC)’: The CC shall be a Subject Matter Expert (SME) belonging to a reputed educational institution/Industry or a specialist in the field identified and entrusted with the task of developing online course in a given area by the NC.

Key responsibility of Development and Delivery of MOOCs

- Ensuring compliance to guidelines in Coordination with EMRC
- Getting Consent from Host University
- Adopting CBCS/UGC model curriculum for course to be developed under UG program.
- Course Mapping - Overview on Topics/Modules (average 20 hrs of Video content in each 4 Credit Course)
- Identification of Subject Experts and allotment of topics/Modules . Coordination with Subject Expert for the completion of assigned modules.
- Vetting of Academic Script provided by Subject Expert.
- All administrative and funding and certification related
- CC may engage Co-faculty as per requirement and inform NC accordingly for authorization.

Continued...

- Getting Consent from Host University
- Publicity
- Creating and coordinating with Subject Expert for the completion of assigned modules.
- In course Assignment Evaluation
- Timely Interaction with Students on available interactive mode.
- Assistance in End term Evaluation and Credit Transfer
- Funding related

Role of Subject Matter Experts

- Subject Matter Expert Groups (SMEGs) shall mean a group of reputed academicians in a particular subject identified by the National Coordinator in each subject.
 - Attending orientation workshops.
 - Finalizing Topics/Modules in consultation with Course coordinator.
 - Adopting Instructional design and strategies for e-content production.
 - Providing module wise Academic Script along with other elements of the e-template like Module Mapping, Objectives, Summary, Downloadable Text, Case studies, FAQ's, Assignments, Quiz, Tutorial, References, Glossary, Web References etc.
 - On camera presentation (Audio/Video recording)
 - Team member for Preview of Modules

Role of Teaching Assistant (if enrollment increased above 500)

- Assistance to Faculty and Co Faculty
- Moderation of discussion forum.
- Maintaining decorum
- Replying and Solving students queries technical as well as academic.
- Ensuring timely submission of assignments
- Assignment evaluation

Four Quadrant Structure of MOOCs

1st e-Tutorial:

Video and Audio Content in an organized form, including Animation, Simulations, Virtual Labs.

2nd e-Content:

Text-PDF/e-Books/ illustration, video demonstrations, documents and Interactive simulations . **For reference Related Links, Open Content on Internet, Case Studies, Anecdotal information.**

3rd Discussion Forum

Discussion forum for raising of doubts and clarifying them on a real time basis by the Course Coordinator or his team

4th Assessment

MCQ, Problems, Quizzes, Assignments and solutions, and setting up the FAQ, Clarifications,



Deliverables of a Course

The MOOCs being offered on SWAYAM follow the four quadrant instructional design, as per the MHRD Revised Guidelines. The structure of each MOOC will have following components:

Quadrants	Description
Quadrant-I (e-Tutorial)	Video and Audio Content in an organized form, Animation, Simulations, video demonstrations, Virtual Labs, etc, along with the transcription of the video.
Quadrant-II (e-Content)	Self instructional material, e-Books, illustrations, case studies, presentations, Web Resources such as further references, Related Links, Open source Content on Internet, Video, Case Studies, books including e-books, research papers & journals, Anecdotal information, Historical development of the subject, Articles, etc

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Quadrants	Description
Quadrant-III (Discussion Forum)	Discussion forum for raising of doubts and clarifying them on a near real time basis by the Course Coordinator or his team
Quadrant-IV (Assessment)	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.

Instructional Design for MOOCs

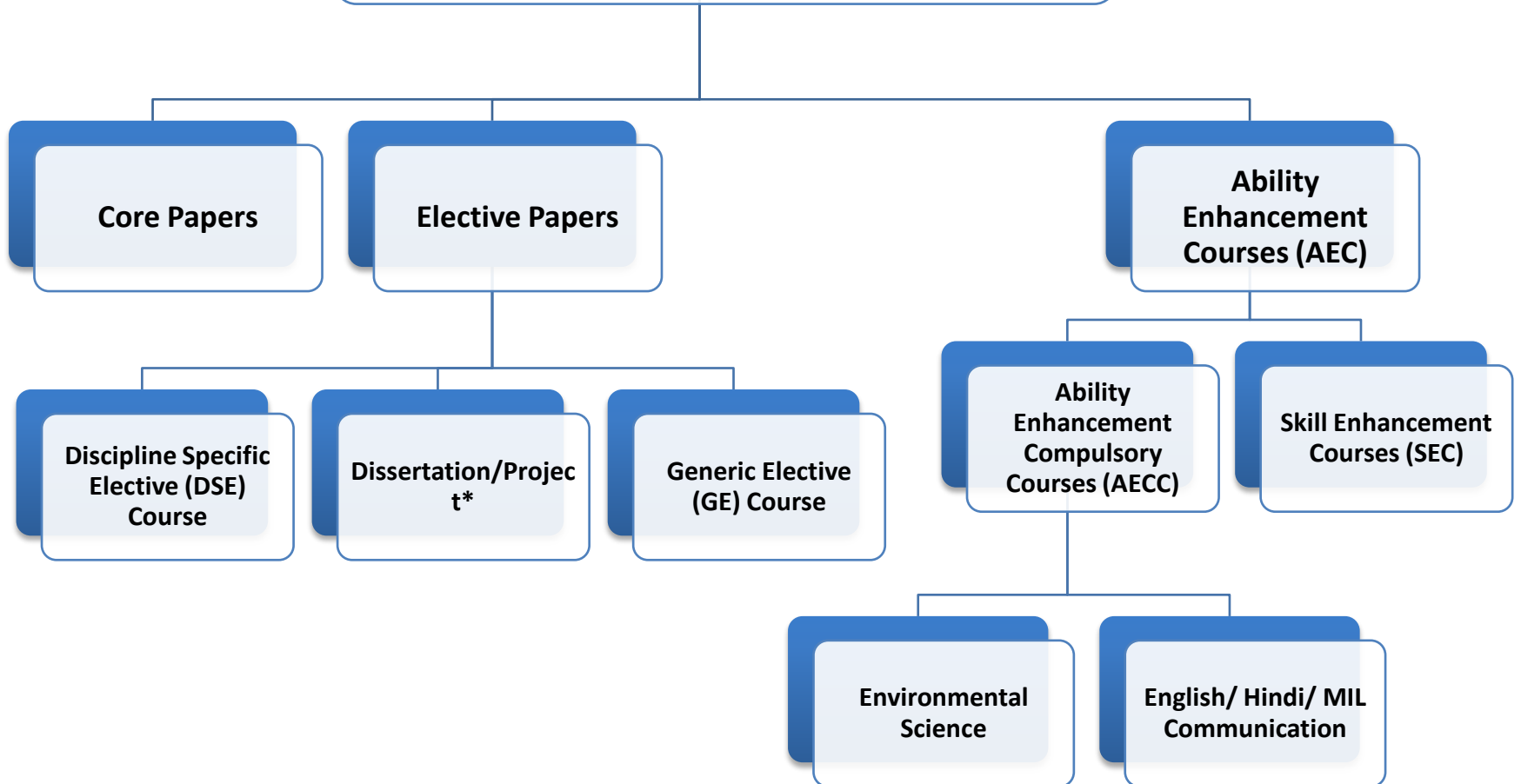


- **As a concept** – MOOCs make way for flipped learning and feedback to the teacher; hence the instructional designer and Teachers must incorporate possibilities of relevant discussion among students as a way of inquiry and understanding the concept in the forums and chats.
- **Research & Analysis** – the course titles, broad areas and specific information that shall be part of content needs to be researched before development. Also while the course is delivered the learners progress and response must also be analyzed time to time to help shape the future content design and development
- **Design-** The MOOC for SWAYAM are compliant per CBCS norms for credits and coverage of lessons. The duration of the course while delivery should be aligned to the semester in the University for Students to benefit from these courses and seek credits. The Instructional Strategies should be incorporated in developing the Instructional.
- **Learning Material-** as per students need, their comprehension abilities should be take care of while developing the material. Learning Material (A/V and Text) shall incorporate enough multimedia (illustrative images, graphs, video clips etc.) to increase students engagement and easy understanding of the topic.

Course Delivery in Compliance with Semester

- Duration of the course: The duration of courses will vary depending on the level and credit points. Courses in anyone 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.

Structure of CBCS UG Degree





Learners are Diverse

Challenges

- Goal of Learning
- Age Factor
- Different Experience Level
- Language Barrier
- Regional Difference
- Intelligence Level/Comprehension Level

Solutions

- providing a lot of resources, or additional reading materials, or application scenarios *
- providing learners with a wide variety of learning resources immediately followed by an assimilation activity.

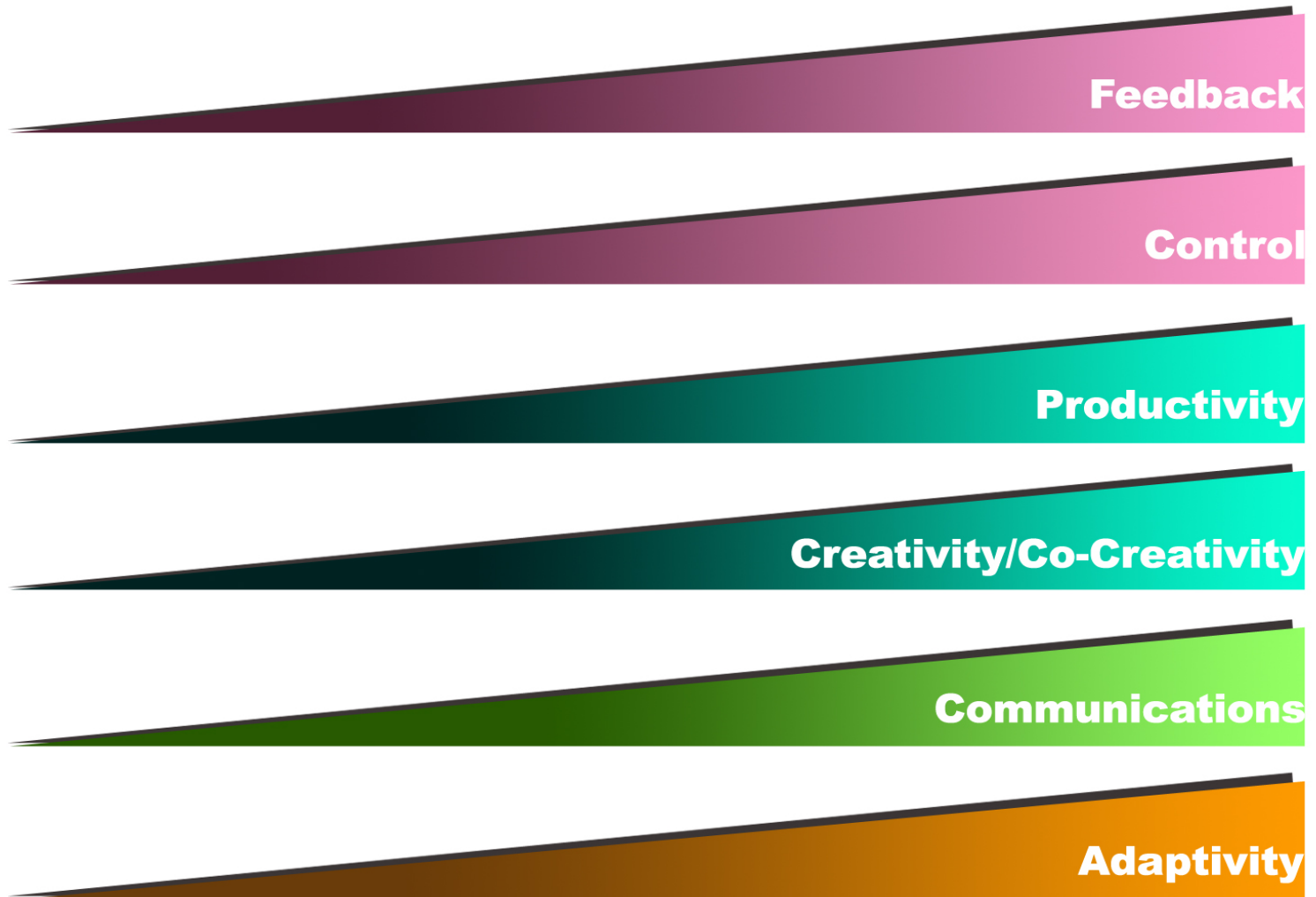
Incorporating instructional Design- Robert M. Gagné

- **Gain attention**
- **Describe the goal**
- **Stimulate recall of prior knowledge (Background)**
- **Present the material to be learned**
- **Provide guidance for learning (Structured e-learning)**
- **Elicit performance "practice" (Case study-tutorial)**
- **Provide informative feedback (Blog/response)**
- **Assess performance test, if the lesson has been learned. Also give sometimes general progress information**
- **Enhance retention and transfer(Animation/graphics etc.)**

Adding Components of Interactivity

Passive

Interactive



Creating a Storyboard

- **The main purpose of creating a storyboard is to make a blueprint of the course with each and every detail along with the notes to the developer.**
- **Storyboarding is known as the scripting phase, where the instructional designer scripts the entire course.**
- **Developing a storyboard in the form of a PowerPoint presentation will be more visual as compared to MS-Word.**

Introducing course design and objectives

- Many of us view SMEs as demigods who are the experts in their field and will have little to do with actual learners.
- Now SME are experts and they have vast knowledge in their area of expertise. Without the necessary facilitation on what the learning objectives are and what the learners want to know – the SME will always lack direction as to how to present the information.
- If the course design and objectives are shared in advance, the SME can align his or her thoughts accordingly.

Guidelines for CCs : Development of MOOCs



Guidelines for Recording of videos – Q1

- No reading from teleprompter. Speak extempore. Body language should not be stiff.
- The Video must not be like a Spoken Tutorial (audio narration / voice-over of text mentioned in presentation slides).
- A clear description of visuals as well as text is required.
- Training demonstration, illustration of examples, case study, documentary, etc should be added wherever applicable.
- The expert/teacher whose video is being recorded should look straight into the camera lens.
- The audio has to be clear and of superior quality. Make it sure that there is no distracting background noise.
- Video must include:- Multimedia, Animation, Documentary, Simulation, Graphics and Virtual Lab appropriately.

Technical Aspects for Q1

- Video recording format: Full HD 1920x1080 pixels.
- Videos aspect ratio: 16:9 (widescreen).
- Module Delivery: 1920p following MPEG-4 AVC Compression.
- Audio Channel 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.
- Video frame to maintain 6-8% headroom
- Video quality and audio levels should be constantly monitored while recording.
- 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.

Continued... Q1



- **Duration** - The Audio/Video lectures traditionally were longer. In view of the decreased span of attention of students, the duration of video should be shortened to 7-10 mins and discuss on specific concept only at one go.
- **Learn by example**- The content should include real life applications / case studies to make content more familiar to the learners.
- **Reflection points** – Content Developer should create reflection spots within the content to engage the viewer
- **Learner Dialogues** to be created During Content Design, as these would give learner to ponder and think about the content.

Guidelines for Course Coordinator (CCs)

Development of MOOCs



Development of E-text – Q 2

- Consult/Study the syllabi of several universities (UGC, CBCS) before finalizing the Syllabus/Mapping of the concerned Course
- Try to Identify Content writers from Universities other than the CCs own university (pan-India approach)
- Textual document should consist of about 3000 words of detailed write-up on the topic of each module.
- The textual description should also be enriched with multimedia supplements (images, hand drawings, maps, graphs etc) wherever applicable



Q2

- **Context** – Topic of the MOOC to be in compliance CBCS and The articulation of Content should be exactly in context of the topic
- **Mapping** – The process of learning has to be mapped to a Detailed time-wise Course Session Plan so that the learning outcomes of the course are adhered to and within the span of semester the student has gained the necessary knowledge and can apply for credit transfer if required
- **Review of the Course**
 - **Pre Development-** evaluation will be done to ensure that learning fulfils the goals of the course. The student's attention should be harnessed by setting up assignments and activities that engage them in learning process by way of doing, interacting, and demonstrating the applications. CBCS Compliance and Course Coverage.
 - **Post Development-** Post development review will be done in the light of accuracy, plagiarism, biasness, compliance of learning objectives and compliance with MHRD Guidelines. Also to ensure technical quartile and students engagement to the course.

Technical Aspects for Q 2

WORD FILE / PDF

- Total text material to be 15- 20 pages long per module
- 12 font Arial, single space
- Text files including all the 2nd quadrant elements shall be around 3000 words per module

Assessment to include:

- Quizzes- self graded 10 questions per module
- Assignments- 3 short (up to 200 words) and 2 long answer (up to 500 words) depending on the course requirements

Additional Resources or References

- The additional resources can be used for
 - to support the learner
 - to ensure prerequisites
 - to advance their learning,
 - to support in the direction of their inherent motivation,
 - to support the needs of learners with varying experiences along with taking care of their language or regional context needs.
- An additional resource could be
 - videos
 - it could be links to various web pages
 - documents that are already available
 - it could also be even research papers that have been written about the topic being discussed.

Additional Resources or References

- The learners can access these resources of their choice based on their needs and interest. Following that learners are required to answer the assimilation quiz activity which ensures that they have gone through the content in the provided resources.
- list of resources or references to be provided, this will enable the learner
 - to increase the depth or increase the breadth of their existing knowledge or understanding,
 - but in addition they cater to diverse type of learners and diverse levels of learning and is followed by a short activity to ensure that learners assimilate the key concept or knowledge intended from the resource

Guidelines for CCs : Development of MOOCs



Avoiding Plagiarism

- Course Coordinator need to obtain copyright clearance from Content writers for any readings, images, and video clips used as core and supplementary reading in case of licensed material if used.
- Direct references to specific materials should be avoided in video content or other course material till clearance has been obtained.
- Course Coordinator need to ensure that content is not plagiarized and the similarity of the e-text should not exceed 15%.
- UGC/INFLIBNET has provided universities with URKUND software to check plagiarism.
- Online freely available software –plagiarism-detect.com

Intellectual Property Rights /Copyright Handling

- The CC shall follow copyright laws for any readings, images, and video clips used as core and supplementary reading in case of licensed material if used and submit an undertaking to that effect to the NC.
- All contents (text, audio, video, animation, quiz etc.) developed with the funding of NMEICT will be the property of SWAYAM.
- 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.
- The terms of service should be clearly laid out so as to address the following key points by the CC:
 - Any disclaimers should be clearly spelt out.
 - User /student/ institutions should be informed about the usage rights of the course content available on SWAYAM.

Intellectual Property Rights /Copyright Handling

But... Exclusive rights given by law to the original creator/author with the explicit undertaking that contents published in SWAYAM shall remain there-

- To get credit
- To copy
- To distribute
- To license
- To sell/make economic transaction
- To perform

Inputs from Creative Commons...

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- Creative Commons has given much easier access to use licenses to the open content community.

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Copyright	Attribution Non-commercial No derivatives	Attribution Non-commercial Share Alike	Attribution Non-commercial	Attribution No Derivatives	Attribution Share Alike	Attribution	Public domain
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<i>BY = Attribution</i>		<i>NC = Non-commercial</i>		<i>ND = No derivatives</i>		<i>SA = Share Alike</i>	



Open Licenses

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Concepts

- Attribution
- Share Alike
- Non-Commercial
- Non-Derivative

Creative Commons conditions

Condition	Explanation
Attribution (BY)	All CC licences require that others who use your work in any way must attribute it – i.e. must reference the work, giving you credit for it – the way you request, but not in a way that suggests you endorse them or their use of the work.
Non-Commercial (NC)	You let others copy, distribute, display, perform and (unless you have chosen No Derivatives) modify and use your work for any purpose other than commercially.
No Derivative works (ND)	You let others copy, distribute, display and perform only original copies of your work.
Share Alike (SA)	You let others copy, distribute, display, perform and modify your work, as long as they distribute any modified work on the same terms.

Course Proposal

- The title of the course.
- Course description, pedagogy.
- Course objectives.
- Learning outcomes.
- Rationale for offering the course.
- Target learners for the courseware.
- Credits/ certificate.
- Course duration.
- Faculty involved at the stage of content creation and during MOOC delivery, in case both are not same. However, preferably the content developer shall be engaged for MOOC delivery as well. The detailed information of the Subject Matter Experts is to be communicated to the CEC in the format described at 6.1 and 6.2 of the MOOC development and Deliverable Checklist given in the Annexure - II.
- Technical team – involved in production and multimedia, broadcasting and ICT during development and delivery.
- Weekly lecture plan and in course assessment plan.
- End term assessment and Evaluation strategy.
- The information regarding costing, production and technical teams and agencies should also be provided.

Review of the Course and approvals

- On completion of the programmes, the CC shall intimate the NC about the readiness for review of the Course.
- Immediately thereupon, the NC shall get the course Previewed/reviewed from academic and technical experts and thereafter convene the SMEGs meeting for viewing the course in detail along with the video and reading resources.
- The SMEGs, after viewing the course shall verifying the following and based on these recommendations, the NC will place the course before the AAB, which will approve the Course for uploading on the SWAYAM portal:
 - Final typos and grammar checks.
 - Brand language/message (i.e. in keeping with Online Course guidelines)
 - Pedagogy and learning experience.
 - Formatting of text and images.
 - Ensuring the presence of basic Online Course elements like video/e-Content, discussion forums, Interactive elements, assignments, assessment methodology etc.
 - Video quality checks.
- The NC in consultation with the CC, will also recommend the ‘Start date’ and the ‘End date’ for the course.
- Based on these recommendations, the NC will place the course before the AAB, which will approve the Course for uploading on the SWAYAM portal.



Preparation for Offering the Course

- **Introductory/Promo Video:** Defining Course design, qualifications for taking the course, introductory video, assessment system, credits to be awarded, starting date/ending date, and expected outcomes.
- **Scheduling of course:** lectures / reading material / assignments / quizzes/ test into weeks and short modules.
- Details of reading material such as lecture notes / additional readings to be with Certificate to NC
- 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.



THANKS
FOR ATTENTION