



HIGH QUALITY EDUCATIONAL PROGRAMS' FORMS, STRATEGIES AND TECHNIQUES: LEAVES FROM CEC'S EXPERIENCE

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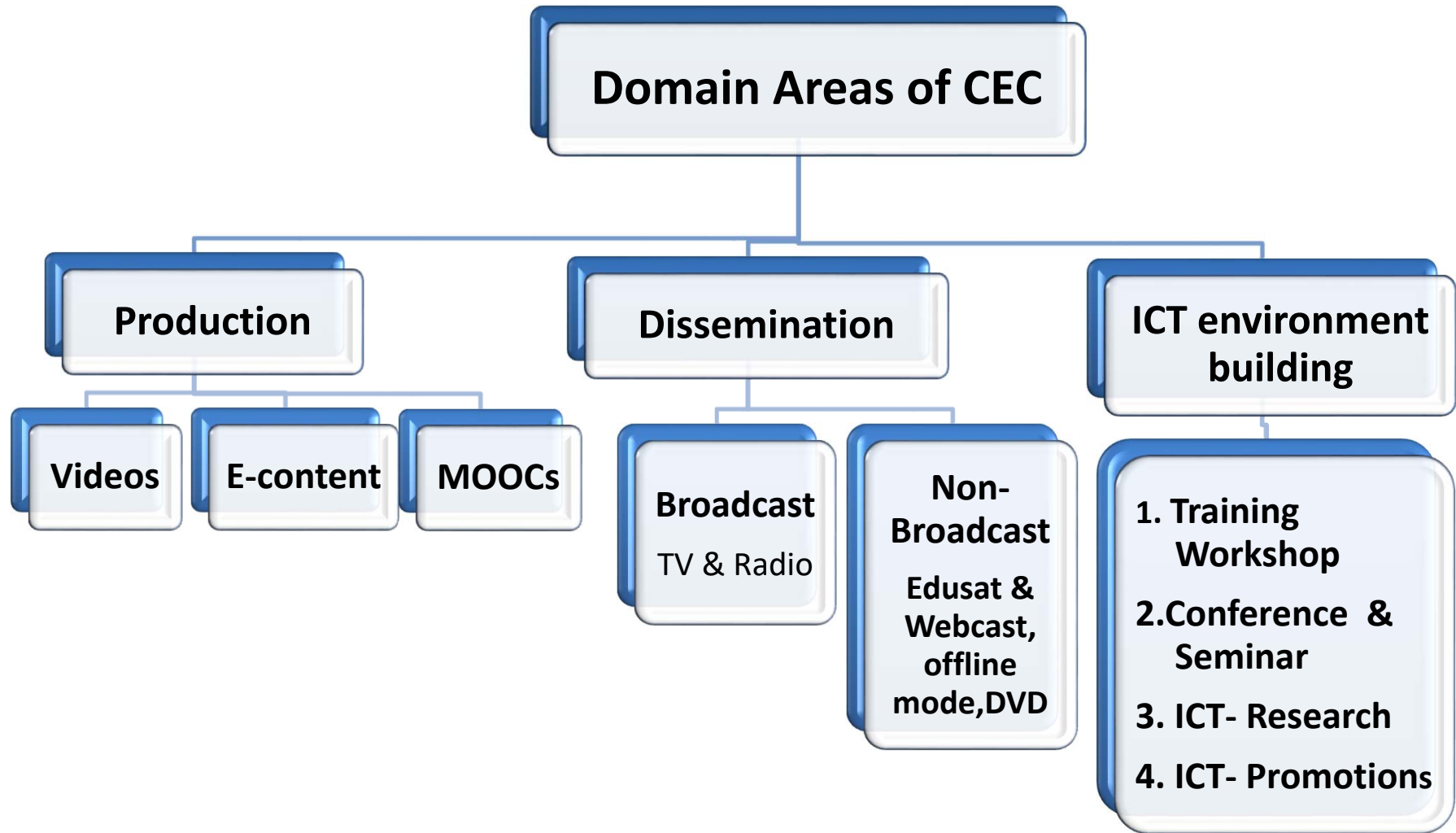
New Delhi, INDIA

About CEC

- ❑ Consortium for Educational Communication (CEC), an Inter-University Centre on Electronic Media, established in the year 1993 by **University Grants Commission (Ministry of Human Resource Development , Govt. of India)**.
- ❑ CEC has 21 Educational Multimedia Research Centers (EMRCs) as Consortium Members across India.
- ❑ CEC is mandated to address the Higher Education needs by way of **Developing Educational Multimedia Content** and its **Dissemination** through various modes such as **TV, EduSat** and **web portals** etc. The CEC content can also be procured on media like DVD on request through e-shop on our portal.

CEC Media Centers located across India





CEC is the Largest Digital Educational Content Repository in India with following educational programs:

- **Videos (Enrichment and Courseware based)- 45,000+**
- **Courseware e-content-25000+**
- **Learning Objects Repository ([SLOs](#))- 10,000+**
- **Massive Open Online Courses ([MOOCs](#))-100+**

CEC digital content covers more than 87 undergraduate subjects from different academic streams of Art/language & Literature, Social Sciences, Natural & Applied Sciences and Management & Other Professional Courses, except Engineering and Medical courses.

Dissemination Platforms

Broadcast

TV Channels

- i. Vyas Higher Education Channel
DTH and Web casting
- ii. 10 DTH channels (MHRD SWAYAM
PRABHA Project)

Radio

- Community Radio Stations
4 Stations-
EMRC Chennai- Anna University ,
EMMRC Indore-Devi Ahilya University ,
EMMRC Srinager-Kashmir University
MCRC Delhi -JMI University

Non-Broadcast

- CEC-EduSat
network(webstreaming)
- Webportals – CEC, Govt
of India, MHRD, and
INFLIBNET
- CEC YouTube Channel
- SWAYAM- *Study Webs of
Active-Learning for Young
Aspiring Minds* (MHRD
Platform for MOOCs)
- SWAYAM PRABHA (MHRD
webplatform for 32 DTH
channels)

Various program formats at CEC

- Documentary-this format addresses the theme from a broad, often narrativized perspective. These provide supplementary knowledge to the more specific and rigorous course based programs / content
- Generalized Video lectures- they may be more specifically and more intensely dealing with the intricacies of a theme or topic. The person delivering the lecture is usually an authority on the subject.
- CEC's E-content are internet based educational content with 4-quadrants which include educational videos . These are course based content
- MOOCs-These are curriculum based online courses of 6-12 week duration, having frequent online interaction with the teacher and among peers in the course. These courses are for knowledge sake and have an option for credit transfer
- Short learning Objects- these are short 2-5 minutes videos based on varied subject and enrichment topics. Some times they are based on the frequently asked question FAQs presented in a video format.
- EduSat live lectures – 4 lectures in different disciplines are delivered live every day by experts

CEC e-content Template

The screenshot displays the CEC e-content Template interface. At the top, the Consortium for Educational Communication, India logo is on the left, and the NME-ICT, MHRD logo with the motto 'सत्यमेव जयते' is on the right. Navigation links for HOME and CONTACT are also present. Below the header, a row of buttons includes OBJECTIVES, SUMMARY, VIDEO / AUDIO, TEXT, FAQ's, CASE STUDY, ASSIGNMENT, REFERENCE, DOWNLOAD, and BLOG. A search bar is located between the VIDEO / AUDIO and TEXT buttons. The main content area features a large image of various potted plants with the text 'BOTANY Ist Year' overlaid. To the right, a sidebar displays course information: Course Name: Botany, Paper No. & Title: Paper-II Cell Biology and Genetics, and Topic No. & Title: Unit-III DNA: The Genetic Material. The footer contains the tagline 'Empowering through e-Education' and the copyright notice '© CEC - UGC'.

Consortium for Educational Communication, India

NME-ICT, MHRD
National Mission on Education through ICT

HOME CONTACT

OBJECTIVES SUMMARY VIDEO / AUDIO

SEARCH

TEXT FAQ's CASE STUDY ASSIGNMENT REFERENCE DOWNLOAD BLOG

BOTANY
Ist Year

Empowering through e-Education

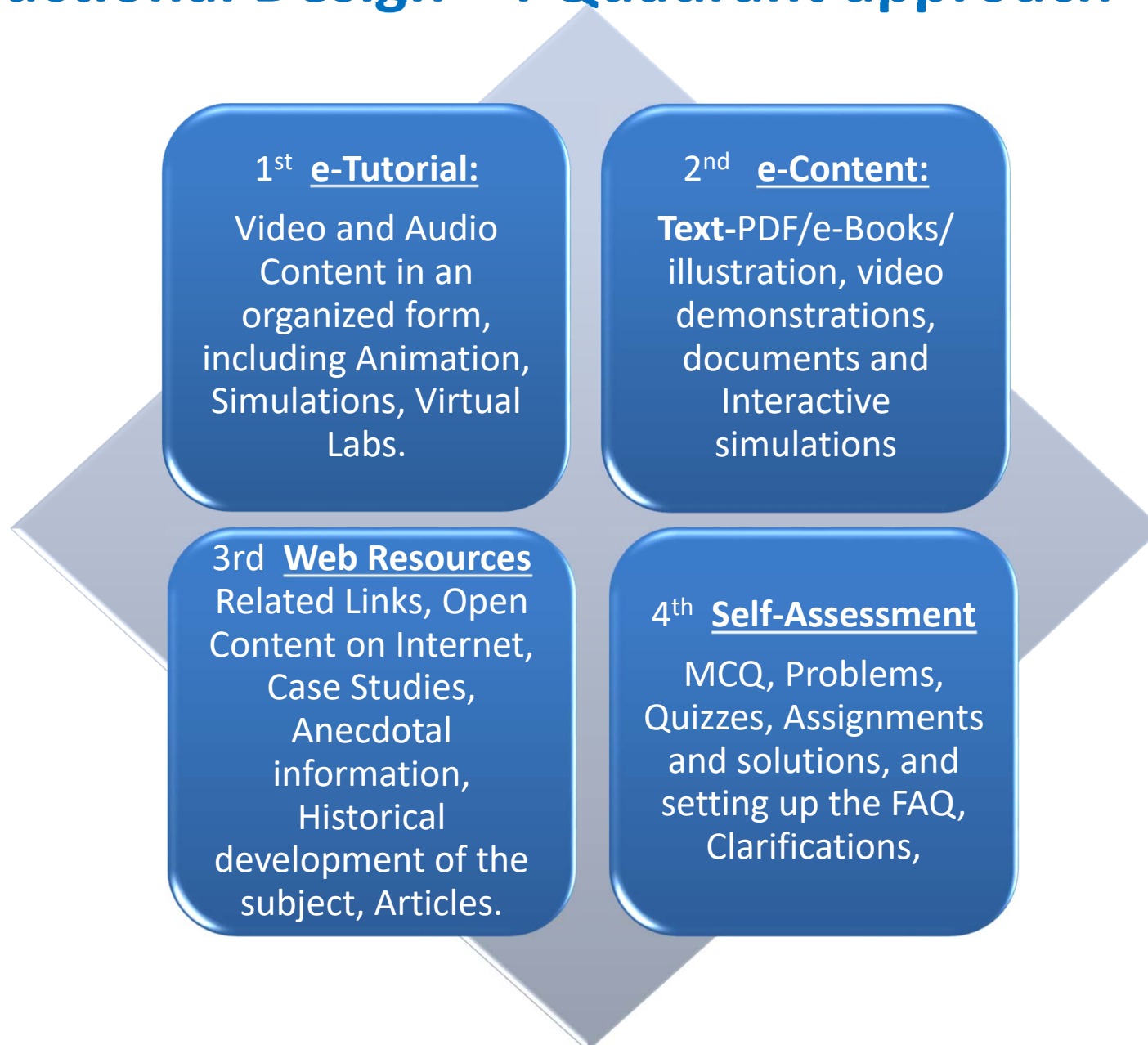
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Course Name :
Botany

Paper No. & Title:
Paper-II
Cell Biology and Genetics

Topic No. & Title:
Unit-III
DNA: The Genetic Material

Instructional Design - 4 Quadrant approach



Digital Educational courseware in 4-quadrants

| Sr. No. | Subjects | Sr. No. | Subjects |
|---------|---------------------------------------|---------|--|
| 1. | B. A. History | 15. | B.A. Psychology |
| 2. | B.A. Botany | 16. | B.Sc. Applied Physical Sciences (Computer Science) |
| 3. | B.A. / B.Sc. English Language | 17. | B.Ed. |
| 4. | B.A. / B.Sc. Environmental Science | 18. | B.A. Geography |
| 5. | B.A. Anthropology | 19. | B. Sc. Zoology |
| 6. | B.A. (Hons.) Mathematics | 20. | B.A. Business Management |
| 7. | B.A. / B. Sc. Hindi Language | 21. | B.Sc. Geology |
| 8. | B.A. Vocational Studies (Photography) | 22. | B.Sc. Applied Physical Sciences (Electronics) |
| 9. | B.A. Communication & Journalism | 23. | B.Sc. (Hons.) Microbiology |
| 10. | B. Sc. Computer Science | 24. | B. A. Human Rights |
| 11. | B.A. Performing Arts | 25. | B.Sc. (Hons.) Statistics |
| 12. | B.A. (Hons.) English Literature | 26. | B.Com Commerce |
| 13. | B.A. Hindi Literature | 27. | B.A. Economics |
| 14. | B.A. Sociology | 28. | B.Sc. Chemistry |
| | | 29. | B.Sc. Applied Life Science (Sericulture) |

Digital Educational courseware in 4-quadrants

| S. No. | Subjects | S.No. | Subjects |
|--------|---|-------|---|
| 30. | B.A. (Hons) Urdu | 44. | B. A. Human Resources Management |
| 31 | B.A. (Hons) Music (Ravindra Sangeet) | 45. | B. A. Marketing Management & Retail Business |
| 32. | B.A. (Hons) Political Science | 46. | B.A. Office Administration & Secretarial Practice |
| 33. | B.A. (Hons) Hindi Journalism | 47. | B.A. Public Administration |
| 34. | B.A. (Hons) Philosophy | 48. | B.A. LLB |
| 35. | B.A. (Hons) Business Economics | 49. | B. A. Population Studies |
| 36. | B.A. (Hons) Sanskrit | 50 | B. A. Education |
| 37. | B.A. (Hons) Music (Karnataki Sangeet) | 51. | B A. Criminology |
| 38. | B.A. (Hons) Music (Hindustani Classical) | 52. | B.A. Tourism |
| 39. | B.A. (Hons) Social Work | 53. | B. A. Vocational Studies (Advertising papers) |
| 40. | B.A. Management & Marketing of Insurance | 54. | B. A. Voc. Std. (Financial Accounting papers) |
| 41. | B.A. Fine Arts | 55. | B. A. Voc. Std.(Computer & Networking papers) |
| 42. | B.A. in Film Studies | 56. | B. A.Voc. Std.-Mass Comm. Video Production |
| 43. | Foreign Languages– German, Spanish, French & Russian (at the level of certificate course) | 57. | B. A. Voc. Std. i) Polymer Science ii) Nutrition & Healthcare Sc. iii) Hotel Management, iv) Interior Design, V)Industrial; management , VI) Plant propagation VII) Medical lab and Molecular Diagnostic technology, VIII)Paramedical and Health management |
| | | | |

Digital Educational courseware in 4-quadrants

| S. No. | Subjects | S. No. | Subjects |
|--------|--|--------|---|
| 58. | B.Sc. Life Sciences | 73. | B.Ed (English) (1 ½ year) |
| 59. | B.Sc. (Hons) Home Science | 74. | B.El.Ed. (Elementary Education) (1st, 2nd, 3rd & 4th) |
| 60. | B.Sc. (Hons.) Bio-Medical Sciences | 75. | B.Library and Information Science – 1 year |
| 61. | B.Sc. (Hons) Electronics | 76. | B.P.Ed. (1st & 2nd Year) |
| 62. | B.Sc. (Gen) Mathematical Science | 77. | B.P.Ed. (3rd & 4th Year) |
| 63. | B.Sc. Agriculture | 78. | B.P.Ed. (2nd Year) |
| 64. | B.Sc. (Hons) Polymer Science | 79. | B. Pharmacy |
| 65. | B.Sc. Physics (Hons.) | 80. | BFA Painting Applied Art Sculpture (core paper) |
| 66. | B.Sc. Agro-Chemical and Control | 81. | BFA Painting Applied Multimedia |
| 67. | B. Sc Bio-Informatics | 82. | Bachelor for Theatre Arts |
| 68. | B.Sc. Applied Phy.Sc. (Environmental Science) | 83. | Bachelor of Business Studies |
| 69. | B.Sc. Applied Phy. Sc.(Industrial Chemistry) | 84. | Manuscriptology (core papers) |
| 70. | B.Sc. (Hons) Bio-Chemistry | 85. | Cyber Security/Information Security |
| 71. | B. Arch. | 86. | B.A. Social Welfare Administration – 3 year |
| 72. | B.Ed. (Special Education for Visually Impaired) | 87. | Epigraphy |

Steps of Developing digital educational content (courseware based)

Pre Production

- **Identify Course**
- Adopting UGC model curriculum /CBCS
- Course Mapping
- **Vetting of Course Mapping by Subject Committee**
- Identification of Subject Experts & allotment of Modules
- Orientation workshops.
- Adopting Instructional design strategies

Production

- Quadrants 2-4
- **Vetting of Text in Quadrant 2, 3, 4. by Course Coordinator**
- Q1-On-camera presentation (Audio/Video recording)

Post Production

- **1st stage and Quality Preview at level of Media Center**
- Incorporating illustrations in the form of Animation, Graphics, text slides and charts etc.
- Mastering of programme alongwith video editor.
- **2nd stage Preview at CEC**

Integration

- Integration of Quadrants 1-4 on the e-template
- **Preview of Modules – Validation & certification**

Ensuring quality in Digital educational content

- Conducting research to map various subjects and identifying topics to be developed into digital educational content.
- Comprehensive and course specific subject mapping
- Identification & selection of Best resource and cultivating and orienting them through specialized Training & orientation programs in program delivery, Instructional design , on camera delivery, content creation
- Educational programs are shot on Broadcast quality cameras and equipment's
- Quality preview / audit (checked against parameters like factual accuracy of the content , relevance, copyright violations, and technical quality of the content) of the content produced
- Digital content is validated and certified for quality.

Technical production details

Production is done through High definition studio recording facility having following infrastructure

- High definition professional broadcast quality Camera
- High Definition studio recorder player
- Vision mixing panel for video switching
- Multichannel audio mixture for recording sound
- Microphones
- Post production facilities with Non Linear Editing machines and softwares.
- XD-CAM format of optical disk media for recording

Salient features of CEC E-content

Comprehensive subject coverage and follows UGC Model Curriculum based & Choice based Credit System (CBCS) compliant

Developed by the best possible resource persons drawn from pan India

Complete learning package with best learning practices (4 Quadrant Instructional Design)

Rich with multimedia components (graphics, animations, simulations) for enhanced learning

Certified and validated content – 2-Stage Peer review

Instant Assessment of learning outcome.

Scope of e-content

Helpful in scaling up of delivery of Education-Addresses the issue of shortage of Faculty

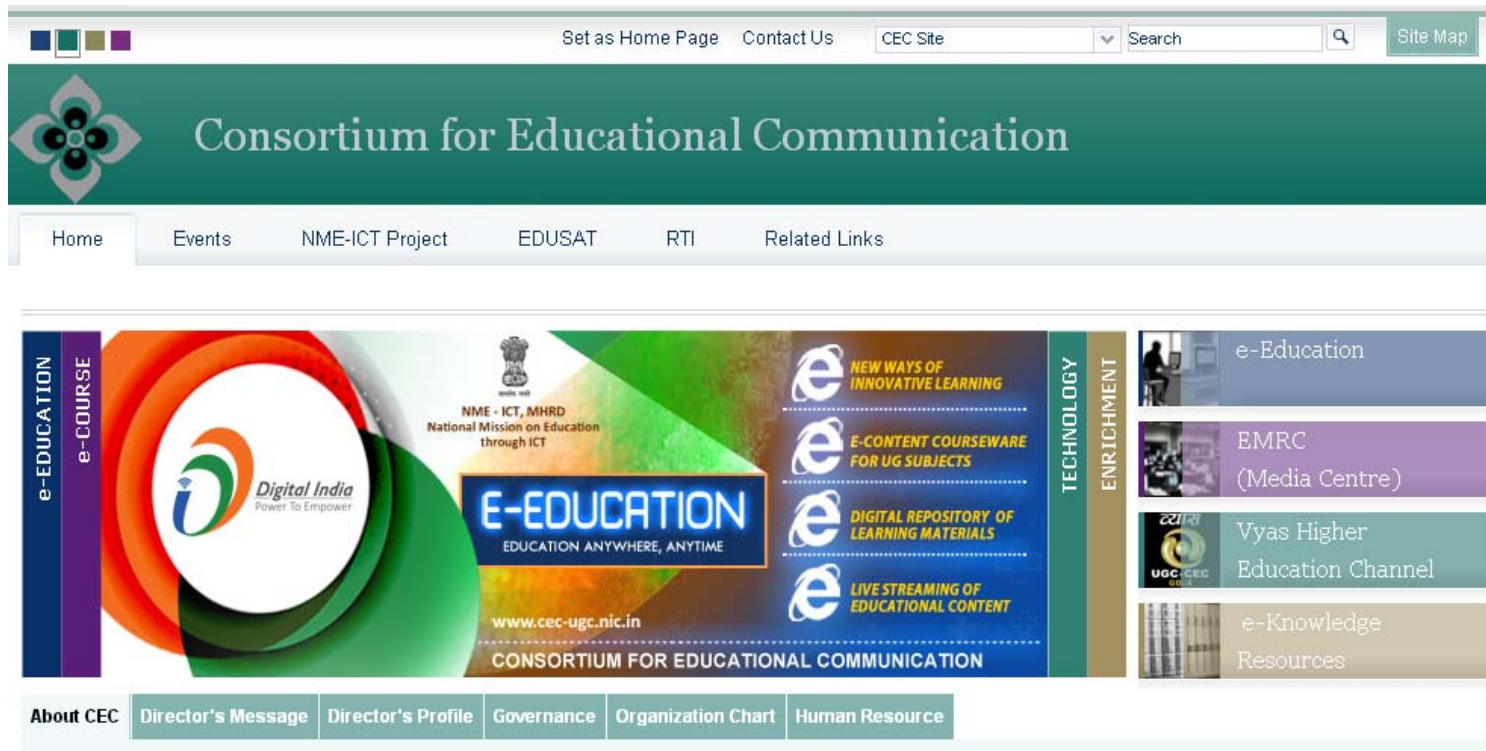
Addresses the issue of Quality in Higher Education

Addresses the issue of Equity, gender equality and Affordability of education

Provides opportunity for Blended Learning

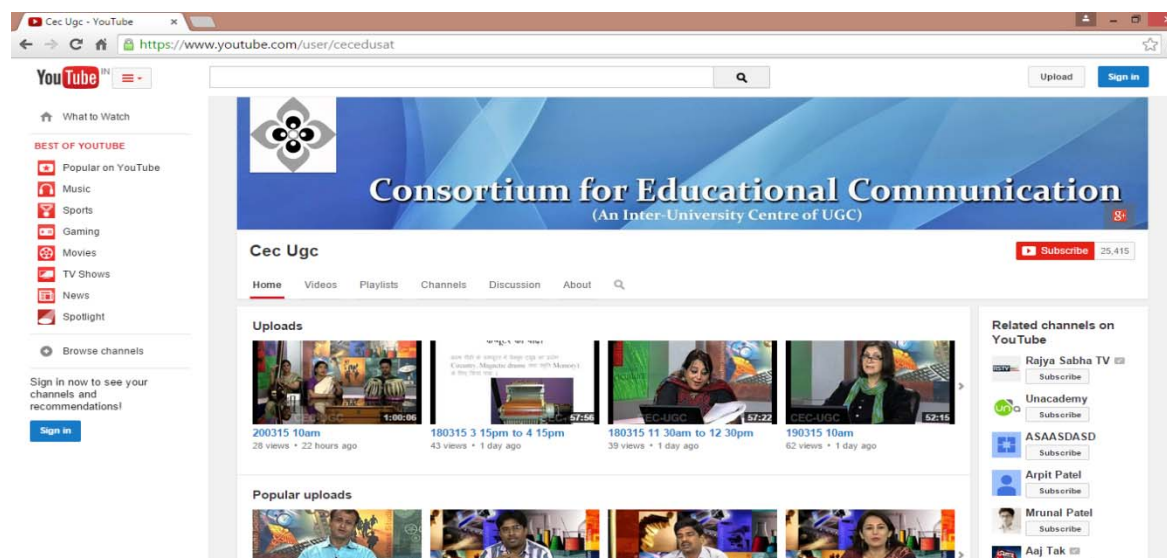
Self paced- Anywhere -Any time learning

CEC's Education Portal



- CEC web portal- www.cec.nic.in is a major platform for the dissemination of e- content and educational video programmes.
- The various formats of contents like e-content, LOR and videos may be accessed through CEC-LMS
- 24-hour Vyas Higher Education Channel-available on these portals through web streaming.
- Website visits till now–1 4.6 lakh

CEC-UGC Channel at YouTube.



YouTube Viewership

12th April 2012- 31th May, 2017

Total Video Views 79,48,431

Total 6,35,116.15 hrs or 72.45 yrs

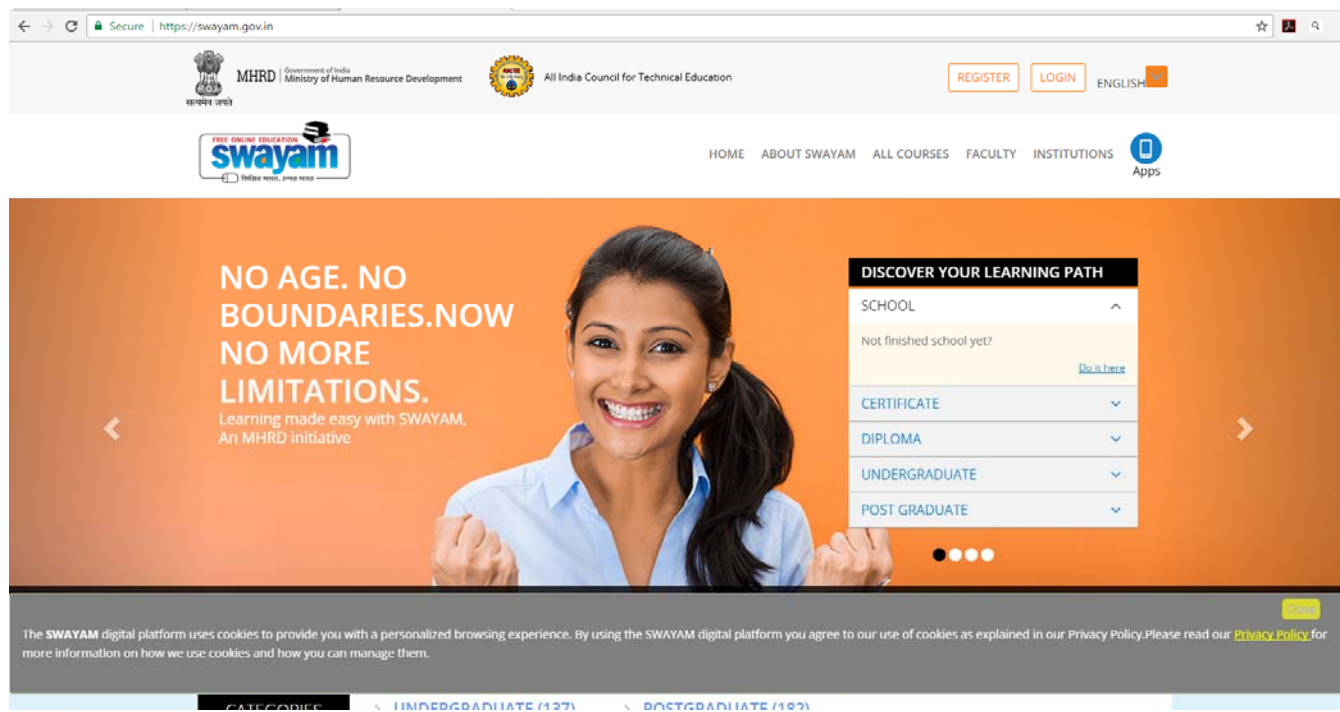
Subscribers 85,059

Viewership Globally

| | <u>no. of views</u> | <u>%</u> |
|----------------------|---------------------|----------|
| India | 66,30,459 | 83 |
| United States | 2,37,054 | 3.0 |
| Pakistan | 1,89,783 | 2.4 |
| United Kingdom | 79,610 | 1 |
| Nepal | 49,722 | 0.6 |
| United Arab Emirates | 45,817 | 0.6 |
| Bangladesh | 43,052 | 0.6 |
| Canada | 40,048 | 0.5 |
| Saudi Arabia | 36,552 | 0.5 |
| Australia | 22,968 | 0.3 |

SWAYAM-Study Webs of Active – Learning for Young Aspiring Minds

- One-stop portal or platform for hosting Massive Open Online Courses (MOOCs) – an initiative of Ministry of Human Resource Development by Government of India



MOOCs for SWAYAM

- CEC is the **National Coordinator** for development of MOOC for SWAYAM in the area of Non-Technical UG/PG subjects.

| | | |
|----------------|---|--|
| MOOCs Phase-I | <ul style="list-style-type: none">• <u>UG Courses: 31</u>• PG Courses: 72 | Developed by repurposing e-content and uploaded on SWAYAM |
| MOOCs Phase-II | <ul style="list-style-type: none">• <u>UG Courses: 125</u>• PG Courses: 75 | Undertaken to be developed by repurposing e-content by Dec, 2017 |
| Fresh MOOCs | <ul style="list-style-type: none">• <u>UG Courses:100</u>• <u>PG Courses:100</u> | Proposed to be developed by March, 2018. |

Upto March, 2018- a total **500** MOOCs courses shall be developed and offered through SWAYAM

Strategy for development of MOOCs

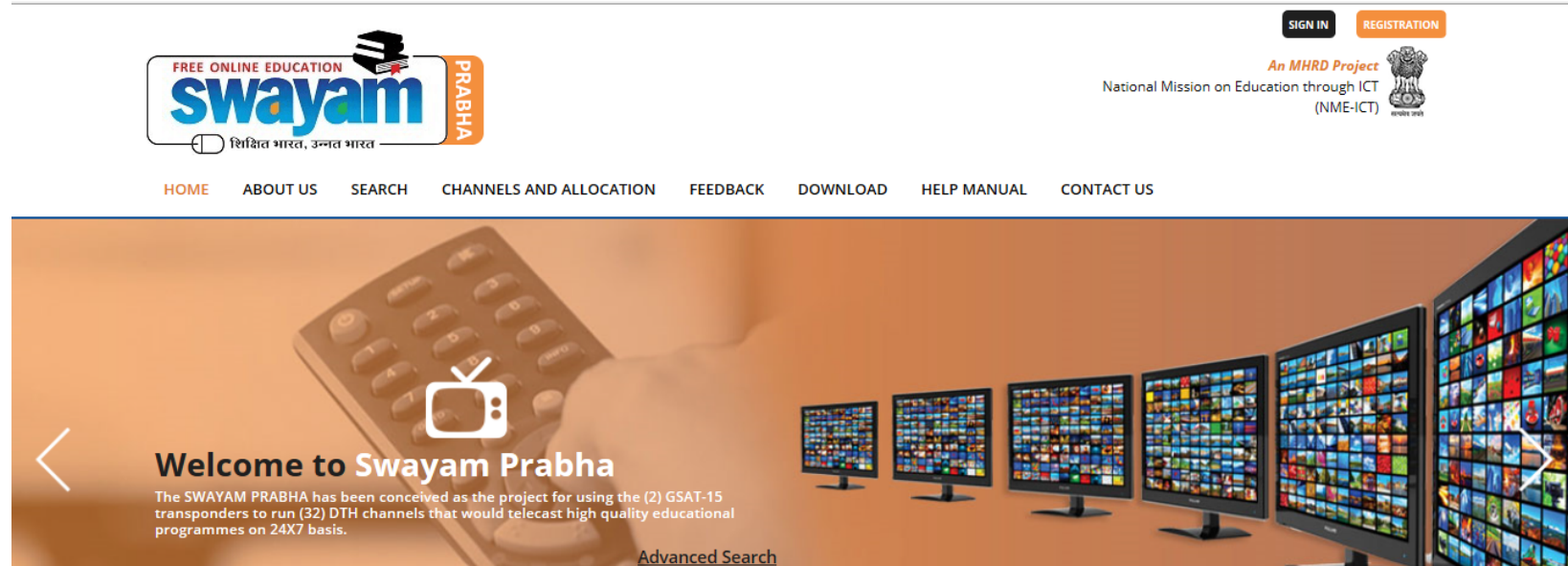
- **Developing MOOCs through**
 - Repurposing existing e-content modules
 - Developing new modules
- **Focus area for New MOOCS**
 - Subject fundamentals
 - Selected Core papers
 - Elective papers
 - Emerging knowledge areas
 - Awareness programmes, life long learning, Training programmes of specific skill sets

MOOCS will be developed on the basis of UGC Model Curriculum or CBCS including the latest knowledge areas of subjects as suggested by Subject experts.

Salient features of Indian MOOCs on SWAYAM

- UGC Model Curriculum based and CBCS compliant at UG level, incorporating the latest in the subject
- Learning for knowledge and Credit award and mobility
- Blended learning Flexibility and accessibility at student's own pace and place
- Best learning practices -4 Quadrant Instructional design
- Course is covered in short duration of 8-12 weeks
- Engagement of students through discussion, forums, e-mails & Video conferencing
- Engagement Activities for students in terms of weekly assignments and projects followed by regular assessment
- Mid term evaluation and final proctored exam for award of credit

New Initiative- CEC-UGC -11 DTH Channels



The SWAYAM PRABHA uses the (2) GSAT-15 transponders to run (32) DTH channels that would telecast high quality educational programmes on 24X7 basis.

CEC is the **National Coordinator** for Non-Technology UG and PG Programs and has been assigned 11 of the 32 DTH Channels.

- 4 hours fresh programming on each channel, repeated 5 times a day, allowing the student to choose the time of their convenience.
- The channels are Free-To-Air and can be viewed on DD Free dish.

Bouquet of CEC-UGC Channels on SWAYAM PRABHA

| Channel name | Key Subjects |
|--|---|
| Channel 01: CEC/UGC: Humanities- 1 Language and Literature | Hindi, English, Sanskrit, German, Spanish, French, Russian, Chinese and Japanese |
| Channel 02: CEC/UGC: Humanities- 2 Arts, History, Philosophy and related Subjects | History, Philosophy, Theatre, Performing & Fine Arts, Sculpture, Film Studies, Comparative Studies of religion, Buddhist studies, Music, Manuscriptology, Jyotish Ganit, Applied Multimedia, Visual arts, Indian culture, Photography |
| Channel 03: CEC/UGC: Social Science -1 Sociology, Political Science and related subjects | Sociology, Anthropology, Social Work/ Ed./Administration , Political Science, Public Administration, Population Studies, Psychology |
| Channel 04: CEC/UGC: Social Science- 2 Education, Psychology, Home Science and related subjects | Education, Special Education for Visually Impaired, Elementary Education, Environmental Science, Home Science, Adult Education, Physical Education, Sports and Health Education |
| Channel 05: CEC/UGC: Social Science- 3 Management, Library Science, Information Science and related subjects | Business Management/Studies, Human Resources Management, Management & Marketing of Insurance/Retail Business, Office Administration & Secretarial Practice, Tourism, Hindi Journalism ,Communication & Journalism, Mass Comm. Video Production, Multimedia Communication, Vocational Studies -Advertising papers, Library and Information Science |

Bouquet of CEC-UGC Channels on SWAYAM PRABHA

| Channel name | Key Subjects |
|--|--|
| Channel 06: CEC/UGC: Social Science - 4, Law, Legal Studies, Human Rights and related subjects | LLB/law, Criminology, Forensic Science, Human Rights, Human Rights and Duties, Environmental Science |
| Channel 07: CEC/UGC: Economics, Commerce and Finance | Economics, Business Economics, Commerce, Financial Accounting papers |
| Channel 08: CEC/UGC: Physical sciences, Mathematics, Physics, Chemistry and related Subjects | Mathematics, Statistics, Physics , Chemistry, Geology, Geography |
| Channel 09: CEC/UGC: Life Sciences, Botany, Zoology, Bio-Science and related subjects | Botany, Zoology, Microbiology, Bio-Medical Sciences, Bio-Chemistry, Bio-Informatics |
| Channel 10: CEC/UGC: Applied Sciences, Allied Physical and Chemical sciences and related subjects | Applied -Sericulture, Electronics, Industrial Chemistry, Pharmacy, Food Technology, Food And Nutrition, Agriculture, Architecture, Polymer Science, Computer Science, Cyber Security/Information security, Environmental Science, Biophysics, Analytical Chemistry/Instrumentation, Vocational Studies (Computer and Networking Papers |

Salient features of CEC-UGC DTH channels

- Curriculum based course contents covering diverse disciplines in the higher education domain of UG-PG
- Enrichment programs for information and knowledge
- Supplementary study material
- Curricula and courses that can meet the needs of lifelong learners in India and abroad
- Convenient accessibility through Set top box offers wide coverage
- Free and Student friendly engaging content with 5 repeat telecasts in a day
- Produced with high professional quality in terms of production, content and multimedia enrichment
- Qualified and experienced faculty as content resources
- Thoroughly reviewed by two stage peer review for relevance and accuracy
- All courses to be certification ready in their detailed offering

Benefits of DTH channels to students and teachers

- As a complete Learning resource
- Plethora of courses and relevant information
- Blended learning
- Learning continues beyond classroom
- Viewers free to surf channel and encounter different knowledge areas

An offline initiative for educational Content/programmes dissemination: CEC Digital lounge

- A digital content access lounge is a designated area facilitated with entire digital access Multimedia environment involving Computers, Display-Screens, Audio devices; which offer one stop solution for digital education/content
- CEC proposes to help visualize and establish a Digital Lounge in libraries or any other suitable place in universities across the country, to make available Digital Content to their students.

3D Model - Digital Lounge



Advantages-Digital Lounge

- One stop-solution for all UG & PG Courses – Digital Content on more than 80 subjects
- Free access to the content
- Learning Flexibility, self paced learning at dedicated space for learning activities
- Content downloadable on portable devices for any-where and any-time learning

CEC Digital lounge

- By using storage server and cloud storage technology to make various subjects courses available to the target group with the help of Host Universities which can be used anywhere and everywhere as per the requirement of the students.
- The proposed Digital Lounge in libraries located in Host Universities across the country will make available education courseware to students :
 - Entire courseware of a programme on Flashdrive/DVD.
 - Viewing facility for stored programmes
 - Facility for receiving the programmes on VOD and Internet streaming
 - Receiving Educational programmes through DTH Broadcast
 - Receiving Educational programmes through FM Radio

Reiterating CEC's commitment

- Expansion
 - Digitalization of Higher Education
 - To help in creation of broad base of educational content delivery and ultimately contributing in growth of GER
- Excellence
 - Pan India presence – access to experts in various fields
 - State of art equipment – Quality production
- Equity
 - Quality Education with Equity and Affordability
- ICT Environment and capacity building
 - Creating digital learning environment in the country
 - Empowering Teachers & learners with ICT

Future plans

- The Consortium looks forward to be a major partner in content development and dissemination of digital education to meet the overall objective of the Digital India.
- With more than 25 years experience in multimedia educational content development, certification and validation, CEC aspires to be a National centre for certification, validation and benchmarking of all the multimedia educational content being developed in the country.
- CEC would like to play a major role in digital learning environment building in the country in collaboration with Human Resource Development Centres (HRDC) of UGC.

Thank You for Your Kind Attention

