Information Booklet cum Syllabus

Of

Certified Multimedia Developer

NIELIT Kolkata

An Autonomous Scientific Society under
Ministry of Electronics and Information Technology, Government of India
NIELIT Bhawan,
Plot No. 3, PSP Pocket, Sector-8,
Dwarka, New Delhi-110077,
Helpline No. (Toll Free) - 1800116511

Introduction to NIELIT Kolkata

NIELIT Kolkata (formerly DOEACC Society Kolkata Centre since 14.12.2002 and prior to that Regional Computer Centre (RCC), Calcutta) is one of the oldest IT houses in eastern region imparting IT Education and Training for more than 40 years. The Centre was established in 1976 as a Registered Scientific Society (Autonomous Body) by the Central and West Bengal Governments.

In December 2002, RCC, Calcutta, was merged with DOEACC Society — An Autonomous Scientific Society of Department of Electronics &Information Technology under Ministry of Communications& Information Technology, Govt. of India. The Society has its Headquarters at CGO Complex, New Delhi and pan India presence of forty(40) offices .It is also well networked throughout India with the presence of about 700 + institutes.

NIELIT is making efforts to bridge the 'digital divide' through skill development leading to the employability of youth. We also provide betterment schemes for the marginalized sections of the society. Accreditation and Registration processes have been simplified by self-certification of documents, which has considerably reduced the processing time.

Model Career Centre (MCC) has been set up at NIELIT Kolkata under the National Career Service Scheme of the Directorate General of Employment. It is a historic step which would facilitate the youth from all sections of the society to take advantage of career guidance, counseling services and also conducting several job fairs.

The basic objective of NIELIT Kolkata is described below:
  i. To carry out human resource development related activities in the area of Information Electronics and Communication Technology (IECT) which would enable employment generation and IT-Led economic growth.
 ii. Capacity building in recent trends –such as Blockchain, Bigdata, Machine Learning, Data Analytics, AR-VR, Cyber Security, Solar Technology, Multimedia etc.
iii. Capacity building through e-governance to enable Citizen Centric Services, empowering through Digital Education by using the services of the Centre, accredited Institutes and CSC's.
 iv. Development of several software for National level projects-Agricultural Census, NPR, Livestock etc.
  v. Assist the aspiring youth for their career either by assisting job plan or grooming to be future entrepreneur

Location

NIELIT Kolkata has at present two operational units.
Unit 1: Jadavpur University Campus, Kolkata – 700032.
        +91-33-2414-6081/6054/6682, Fax: +91-33-2414-6549

Unit 1 of NIELIT Kolkata Centre is located in a lush green environment inside Jadavpur University Campus being connected with bus and train services from different corners of the city.

Unit 2: Salt Lake Campus, Block - BF 267, Sector-I, Salt Lake, Kolkata – 700064
        +91-33-4602-2246/0938

Unit 2 is a new building of NIELIT Kolkata at Sector-I, Salt Lake which has also started its operation. The Building has 20000 sq.ft. in the area (B+G+3) storied and is well equipped with modern technological facilities needed for training in selected domains.

Centre's Thrust Areas

➢ NIELIT IT('O', 'A' & 'B' Level) ,CHM ('O' Level) Hardware & Networking Courses and Multimedia and Animation Technology courses
➢ Emerging Technologies like Blockchain, Bigdata, Machine Learning, Data Analytics, AR-VR, Cyber Security, Solar Technology, Multimedia
➢ AICTE approved summer training Programmes.
➢ 'CCC' & 'BCC' Online examination
➢ Corporate Courses as per requirement
➢ Several Short Term Courses as per Market demand
➢ Directorate General of Employment (DGE) Training
➢ Directorate General of Defence (DGR) Training
➢ Execution of National Level Software Development Projects- Agricultural Census, NPR, Livestock, DoE etc.
➢ Model Career Centre (MCC) under National Career Service
➢ Implementing agency for the Govt. of India sponsored Training program in the area of Electronic System Design and Manufacturing (ESDM) in the state of West Bengal with the help of its Accredited Training Partners.
➢ Future Skills PRIME capacity building projects (Blockchain, Data Analytics, AR/VR, Robotic Process Automation, Cyber Securities, IoT, etc.) of Ministry of Electronics and Information Technology (MeitY), Government of India

1. Objective of Scheme

The Certificate Course in Interactive Multimedia development explores the art and science of interactive media development. In this course, students delve into concepts of interactive multimedia development through collaborative, hands-on projects and they explore interactive

computing, the fundamentals of website architecture and development, interactive multimedia design and development. Multimedia developers might work directly with other multimedia design professionals, including Web developers, graphic designers and Web designers. They might develop 2D Animation,3D Animation, websites or even touch-screen kiosks using graphics,audio,and video and animation aspects

2.   Duration of the Course

The duration of Certified Multimedia Developer course is 200 learning hours

3.   Entry requirements and/or recommendations and minimum age

Students who have passed 10+2 examination in any stream (Science/Commerce/Arts) from a recognized board are eligible to seek admission. Or 10th pass with pass in NSQF Level 3 IT/ITeS Course in IT/Multimedia discipline

4.   Syllabus

Module	Learning Hours (Theory)	Learning Hours (Practical)	Total
Multimedia Fundamentals	10		10
Image Editing & Graphic Designing	5	20	25
Audio Editing	5	15	20
2D Animation	10	20	30
Video Editing & Special Effects	5	20	25
3D Animation	10	20	30
Introduction to Web Page Development	5	15	20
Project Work		40	40
	50	150	200

5.   Progression from the qualification

1) In Academic After completion of this course, the students may take up specialised courses on Multimedia Technologies to further enhance their skills and job prospects

2) Professional Multimedia Developers may hold different titles and work in different specialties. They may pursue their career in industries including film, communications, graphic arts, marketing and computers. Job titles may include web developer, film editor, animation specialist and game designer

6.   Indicative list of training tools required to deliver this qualification

- CorelDraw
- Adobe Photoshop
- Adobe flash
- 3D Max
- Sound Forge
- Adobe Premier Pro
- Adobe Dreamweaver
- Adobe Illustrator

7. Credit Scheme for Certified Multimedia Developer

A. One theory paper will be conducted for duration of ninety (90) minutes and the total marks would be 100.Theory examination will be conducted in the ONLINE Mode.

B. One practical examination for two hours duration and sixty (60) marks would be conducted .The emphasis will be on the practical demonstration of skills and knowledge based on the performance criteria. Laboratory / Practical Work will be conducted at Institutions/Organizations which are running the course.

C. Project: The project is carried out by the student under the guidance and support of management of the respective organization.

Means of Assessment

Sl No	Examination Pattern	Modules Covered	Duration in Minutes	Maximum Marks
1	Theory	1,2,3,4,5,6,7	90	100
2	Practical	1,2,3,4,5,6,7	120	60
3	Internal Assessment			20
4	Project			20
			Total	200

Note: 1. Pass percentage would be 50% marks in each component, with aggregate pass percentage of 50% and above.

2. Grading will be as under:

Grade	S	A	B	C	D	Fail
Marks Range	>=85%	>=75% to <85%	>=65% to <75%	>=55% to <65%	>=50% to <55%	<50%

(in %)						

3. Theory examination would be conducted online and the paper comprises of MCQ and each question will carry 1 marks. 4. Practical examination, Internal Assessment and Project would be evaluated internally.

5. Candidate may apply for re-examination within the validity of registration.

6. The examinations would be conducted in English Language only.

NATIONAL INSTITUTE OF ELECTRONICS AND INFORMATION TECHNOLOGY

KOLKATA

Syllabus for Certified Multimedia Developer

Total Number of Hours: 200 Hrs.

1.	Multimedia Fundamentals	10 Hrs
2.	Image Editing Techniques	25 Hrs
3.	Audio Editing Techniques	20 Hrs
4.	2D Animation Techniques	30 Hrs
5.	Video Editing & Special Effects	25 Hrs
6.	3D Animation Techniques	30 Hrs
7.	Website Development Fundamentals	20 Hrs
8.	Development of Interactive Multimedia Project	40 Hrs

Detailed Syllabus for Certified Multimedia Developer

1. **Introduction to Mutimedia:** **10 Hrs**
   Basic Multimedia Concepts, Definitions of Multimedia, Multimedia objects: Text, Graphics, Animation, Audio, Images, video, definition of hypertext and hypermedia. Multimedia applications in education, entertainment, advertising world etc. Components of a Multimedia system, desirable features for a multimedia system, requirements of multimedia communication.

2. **Image Editing & Graphic Designing** **25 Hrs**
   Concepts on Image and Photo Editing, Graphic Designing, Masks and Channels, Retouching and Repairing, Painting and Editing, Basic Pen tool techniques, creating special effects. Digital Design, Page Layout Design, Interactive Design, 3D Modelling, Texturing, Digital Illustration, User Interface Design, Compositing and 3D Animation.

3. **Audio Editing** **20 Hrs**
   Sound editing, recording, sound effects, Audio compression, audio production, basic sound editing and navigation, advanced editing, recording, applying sound effects, applying sound process

4. **2D Animation** **30 Hrs**
   Introduction to 2D Animation, Computer based animation, sprite animation, rendered animation. Introduction to tweening, warping, morphing, walk cycle. Shapes and Objects.Transformation Tools.

5. **Video Editing & Special Effects** **25 Hrs**

   Multiple exposure, mattes and introduction to computer generated imagery. Basic to Advanced level video editing, Basic Overview, Transitions and Titles, Editing Techniques, Adding video effects and motion, adding audio, Alpha Channels and Mattes, Tools and Techniques for advanced editing, Media Management(Post-edit), colour correction, Titleing and composting, Packaging Timeline, Edit to tape(mastering) & exporting to different media Introduction to Mechanical Effects and optical effects. Scenery, scale models, animatronics, pyrotechnics and atmospheric effects.

6. **3D Animation** **30 Hrs**
   Introduction to 3D animation, Understanding of 3D Coordinate systems, concept of Viewport, navigation in space, modelling of objects in 3D space, Viewing Transformations: Camera models, Using Transformation Tools.

7. **Introduction to Web Page Development** **20 Hrs**
   Introduction to Web Page Development, Introduction to the Internet and World Wide Web, Designing and Building your website, using content types effectively, hypertext theory and node link diagrams. Planning a website. Design Guidelines.

8. **Development of Interactive Multimedia Project**   **40 Hrs**

Industry Level Project Work undertaken in a peer group setting, Learn problem solving and integration of different components of multimedia viz. image, graphics, audio, video & animation for development of multimedia applications using an appropriate authoring tool.