



Kot Bhalwal, Jammu



Model Institute of Engineering  
& Technology (Autonomous)  
Course Handout

## COURSE HANDOUT

### MULTIMEDIA AND VIRTUAL REALITY

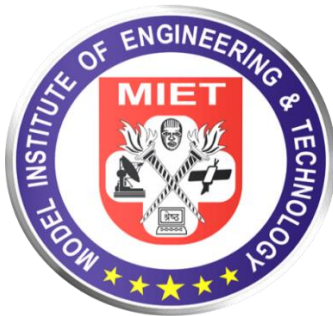
(MCSE32B ) M.Tech(CSE) 3rd Semester

ACADEMIC YEAR (2023-24)

**Dr. Rajneet Kaur Bijral**

Assistant Professor

Computer Science and Engineering



Department of Computer Science and Engineering

Model Institute of Engineering & Technology (Autonomous)

Kot Bhalwal, Jammu - 181122

[www.mietjmu.in](http://www.mietjmu.in)



Dr. Arun K. Gupta Teaching-Learning Centre

Version 1.1



Please Do Not Print Unless Necessary



Course Code	Course Name	Course Type	Cd	L	T	P	Marks		
							Internal	Theory (External)	Total
MCSE32B	Multimedia and Virtual Reality		3	3	-	-	25	75	100

**COURSE OUTCOMES**

At the end of the course the student will be able to:	
CO32B.1	Demonstrate an ability to do research by designing and conducting experiments, analyze and interpret multimedia data individually as well as part of multidisciplinary teams.
CO32B.2	Demonstrate an ability to design a system, component or process as per needs and specifications of the customers and society needs.
CO32B.3	Acquire an ability to prepare short films and documentaries to showcase their knowledge of multimedia tools.

**Detailed Syllabus**

**UNIT 1 :** Multimedia preliminaries and applications : Development and use of multimedia packages; Introduction to virtual reality and modelling languages; CD-ROM and the Multimedia Highway, Introduction to making multimedia :The Stages of project, the requirements to make good multimedia, Multimedia skills and training, Training opportunities in Multimedia. Motivation for multimedia usage; Frequency domain analysis, Application Domain & ODA ; Multimedia Hardware and Software: Multimedia Hardware – Macintosh and Window production Platforms, Hardware peripherals – Connections, Memory and storage devices, Media software – Basic tools, making instant multimedia, Multimedia software and Authoring tools, Production Standards. (08 hrs)

**UNIT 2 :** Multimedia building blocks Multimedia : Text, Sound, Images, Animation and Video, Digitization of Audio and Video objects; Data Compression: Different algorithms related to text, audio, video and images ; Working Exposure on Tools like Dream Weaver, 3D Effects, Flash . (06 hrs)

**UNIT 3 :** Multimedia and the Internet : History, Internet working, Connections, Internet Services, The World Wide Web, Tools for the WWW : Web Servers, Web Browsers, Web page makers and editors, Plug-Ins and Delivery Vehicles, HTML; Designing for the WWW – Working on the web; Multimedia Applications: Media Communication, Media Consumption, Media Entertainment, Media games. (07 hrs)

**UNIT 4 :** Multimedia looking towards Future: Digital Communication and New Media, Interactive Television, Digital Broadcasting, Digital Radio, Multimedia Conferencing, Assembling and delivering a project-planning and costing, Designing and Producing content and talent, Delivering; CD-ROM technology. (07 hrs)

**UNIT 5 :** Virtual Reality : Introduction to Virtual reality & Virtual reality Systems, Related Technologies: Tele-operation & augmented reality system, VRML Programming, Domain Dependent Applications like Medical, Visualisation Visibility computation ,Time Critical rendering.. (07 hrs)

**Textbooks**

S. No.	Name of the Books	Author	Publisher	Edition (Pub. Yr.)
1	Multimedia and Communication Systems	Steve Heat	Focal Press,UK	January 2007
2	Multimedia: Making it Work	Tay Vaughan	McGraw Hill Education	June 2014





COURSE PLAN		
Unit-I		
S.No	Topics	Recommended Books
1	Multimedia preliminaries and applications,	Book 2, Ch.1
2	Development and use of multimedia packages	Book 2, Ch.1
3	Introduction to virtual reality and modelling languages	Book 2, Ch 1
4	CD-ROM and the Multimedia Highway	Book 2, Ch.1
5	Introduction to making multimedia	Book 2, Ch.1
6	The Stages of project	Book 2, Ch.7
7	The requirements to make good multimedia	Book 2, Ch.7
8	Multimedia skills and training	Book 2, Ch.8
9	Training opportunities in Multimedia	Book 2, Ch.8
10	Motivation for multimedia usage	Book 2, Ch.2
11	Frequency domain analysis	Book 1, Ch.10
12	Application Domain & ODA	Book 1, Ch.10
13	Multimedia Hardware and Software	Book 2, Ch.7
14	Multimedia Hardware – Macintosh and Window production Platforms	Book 2, Ch.7
15	Hardware peripherals – Connections	Book 2, Ch.7
16	Memory and storage devices	Book 2, Ch.1
17	Making instant multimedia	Book 2, Ch.7
18	Multimedia software and Authoring tools	Book 2, Ch.7
19	Production Standards.	Book 2, Ch.7
Unit-II		
20	Multimedia building blocks Multimedia : Text, Sound, Images, Animation and Video	Book 2, Ch.7
21	Digitization of Audio and Video objects	Book 2, Ch.9
22	Data Compression: Different algorithms related to text, audio, video and images	Book 2, Ch.13
23	Working Exposure on Tools like Dream Weaver, 3D Effects, Flash .	Book 1, Ch.12
Unit-III		
24	Multimedia and the Internet : History	Book 2, Ch.12
25	Internet working, Connections, Internet Services	Book 2, Ch.12
26	The World Wide Web	Book 2, Ch.13
27	Tools for the WWW : Web Servers, Web Browsers, Web page makers and editors, Plug-Ins and Delivery Vehicles,	Book 2, Ch.13
28	HTML	Book 2, Ch.13
29	Designing for the WWW – Working on the web	Book 2, Ch.13
30	Multimedia Applications	Book 2, Ch.1
31	Media Communication	Book 1, Ch.11



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32	Media Consumption	Book 1, Ch.11
33	Media Entertainment, Media games.	Book 2, Ch.1, Ch.2,Ch.7
<b>UNIT-IV</b>		
34	Multimedia looking towards Future	Book 2, Ch 1
35	Digital Communication and New Media	Book 2, Ch 1
36	Interactive Television	Book 2, Ch 1
37	Digital Broadcasting	Book 1, Ch 13
38	Digital Radio	Book 1, Ch 13
39	Multimedia Conferencing	Book 2, Ch 1
40	Assembling and delivering a project-planning and costing	Book 2, Ch 9
41	Designing and Producing content and talent	Book 2, Ch 9
42	Delivering	Book 2, Ch 9
43	CD-ROM technology	Book 2, Ch 1
<b>Unit-V</b>		
44	Virtual Reality : Introduction to Virtual reality & Virtual reality Systems	Book 2, Ch 1
45	Related Technologies: Tele-operation & augmented reality system	Book 2, Ch 9
46	VRML Programming, Time	Book 2, Ch 1
47	Domain Dependent Applications like Medical	Book 2, Ch 14
48	Visualisation Visibility computation	Book 2, Ch 14
49	Critical rendering	Book 2, Ch 9

#### ADDITIONAL WEB RESOURCES

1.	<b>My Mooc - Digital Media Course List</b> <a href="https://www.my-mooc.com/en/categorie/digital-media">https://www.my-mooc.com/en/categorie/digital-media</a>
2.	<b>NPTEL Multimedia Processing course offered by IIT Kharagpur:</b> <a href="https://archive.nptel.ac.in/courses/117/105/117105083/(NPTEL).">https://archive.nptel.ac.in/courses/117/105/117105083/(NPTEL).</a>

#### GRADING AND ASSESSMENT

- **Sessional Test:** 10 marks
- **Assignment:** 10 marks
- **Attendance:** 5 marks
- **Final Examination:** 75 marks

#### COURSE POLICIES

- **Attendance:** Minimum 75% attendance is mandatory to appear in the final examination of the course.
- **Academic Integrity:** MIET's academic integrity policies apply. Plagiarism will not be tolerated.
- **Late Submissions:** Assignments and projects must be submitted by the specified timelines.

#### FACULTY INFORMATION

- **Office Hours**  
Wednesday (12:55 PM - 1:45 PM)  
Friday (12:55 PM - 1:45 PM)
- **Contact Information**  
[rajneet.cse@mietjammu.in](mailto:rajneet.cse@mietjammu.in)

