DR. BABASAHEB AMBEDKAR MARATHWADA UNIVERSITY

CIRCULAR NO. SU/ Sci./1/2016

It is hereby inform to all concerned that, on the recommendation of the Ad-hoc Board, the Academic Council at its meeting held on 01 & 02 June, 2016 has accepted the syllabi of **1) B.VOC. (Jewellery Design & Gemology) Semester-I,II,III & IV with minor changes and syllabus of V & VI Semester and 2) B.VOC. (Multimedia & Animation) Semester-I,II,III & IV with minor changes and syllabus of V & VI Semester.**

This is effective from the **Academic Year 2016-2017** and onwards.

These Syllabi are also available **on the University Website www.bamu.ac.in**

All concerned are requested to note the contents of this circular and bring notice to the students, teachers and staff for their information and necessary action.

University Campus,
Aurangabad-431 004.
REF.NO.SU/2016/3100-106
A.C.S.A.I.No.449[38]

Date:- 16-06-2016.

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Director,
Board of College and
University Development.

Copy forwarded with compliments to :-

1] The Principal, Deogiri College, Aurangabad.

Copy to :-

1] The Controller of Examinations,
2] The Section Officer, [BCS Unit],
3] The Programmer [Computer Unit-1] Examinations,
4] The Programmer [Computer Unit-2] Examinations,
5] The In-Charge, E-Suvidha Kendra, [Professional Unit], Rajarshi Shahu Maharaj Pariksha Bhavan, Dr. Babasaheb Ambedkar Marathwada University,
6] The Record Keeper,
Dr. Babasaheb Ambedkar Marathwada University.

KJ/-160616/.*

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B.Voc.

(Multimedia and Animation)

(Effective from June 2016-17)

Dr. Babasaheb Ambedkar Marathwada University, Aurangabad

Curriculum for B.Voc.(Multimedia and Animation)

UNIVERSITY GRANTS COMMISSION (UGC) PROGRAM UNDER THE NATIONAL SKILLS QUALIFCATIONS FRAMEWORK (NSQF)

1. Introduction

It has been a long felt necessity to align higher education with the emerging needs of the economy so as to ensure that the graduates of higher education system have adequate knowledge and skills for employment and entrepreneurship. The higher education system has to incorporate the requirements of various industries in its curriculum, in an innovative and flexible manner while developing a holistic and well groomed graduate.

Ministry of HRD, Government of India has issued a notification for National Skills Qualifications Framework (NSQF). Under the National Skills Development Corporation, many Sector Skill Councils representing respective industries have/are being established. One of the mandates of Sector Skill Councils is to develop National Occupational Standards (NOSs) for various job roles in their respective industries. It is important to embed the competencies required for specific job roles in the higher education system for creating employable graduates.

The University Grants Commission (UGC) has launched a scheme on skills development based higher education as part of college/university education, leading to Bachelor of

Vocation (B.Voc.) Degree with multiple exits such as Certificate/Diploma/Advanced Diploma/ Degree under the NSQF. The B.Voc. programme is focused on universities and colleges providing undergraduate studies which would also incorporate specific job roles and their NOSs alongwith broad based general education. This would enable the graduates completing B.Voc. to make a meaningful participation in accelerating India's economy by gaining appropriate employment, becoming entrepreneurs and creating appropriate knowledge.

2. Objectives

2.1 To provide judicious mix of skills relating to a profession and appropriate content of General Education.

2.2 To ensure that the students have adequate knowledge and skills, so that they are work ready at each exit point of the programme.

2.3 To provide flexibility to the students by means of pre-defined entry and multiple exit points.

2.4 To integrate NSQF within the undergraduate level of higher education in order to enhance employability of the graduates and meet industry requirements. Such graduates apart from meeting the needs of local and national industry are also expected to be equipped to become part of the global workforce.

2.5 To provide vertical mobility to students coming out of 10+2 with vocational subjects.

3. Curriculum

3.1 The curriculum in each of the years of the programme would be a suitable mix of general education and skill development components.

3.2 The curriculum is based on credit based system. The credits for general education and skill development component are as shown with NSQF levels

Exit Point	Duration	No. of credits for General	No. of credits for Skill	Exit point Award	Corresponding NSQF level

		Education component	development component		
First Exit	After Six Months	12	18	Certificate in Multimedia & Animation	Level 4
Second Exit	After One Year	24	36	Diploma in Multimedia and Animation	Level 5
Third Exit	After Two Years	24	36	Advance diploma in Multimedia and Animation	Level 6
Fourth Exit	After Three Years	24	36	B.Voc.(Multimedia and Animation)	Level 7
	Total (I+II+III yr)	**72**	**108**		

4. Eligibility

A Candidate shall be admitted to the I year of the B.Voc.(Multimedia and Animation) degree course only if he/she satisfies the following condition:

1. He/ She must have passed the higher secondary (multipurpose) examination conducted by H.S.C. board Government of Maharashtra with science / technical subjects Or an Examination of any statutory University and Board recognized as equivalent thereto.

OR

He/She must have passed examination prescribed at the end of second year of the junior college conducted by the H.S.C. board, Government of Maharashtra with English as compulsory language, or an examination recognized as equivalent thereto.

OR

Candidate having offered prescribed vocational course (MCVC

OR

Three years Diploma Course in engineering conducted by the board of technical Education, Maharashtra State.

OR

Any graduate from recognized University

5. Award of Degree/Diploma

As this course is multi-exit course, the award levels are

1. The **Degree of Bachelor of Vocation B.Voc (Multimedia and Animation)** shall be conferred on candidate who has pursued a regular course of study consisting of SIX semesters in the relevant subject as prescribed and has appeared at the end examination and passed under the credit based system in all the examination prescribed for the Degree course in the faculty.

2. The **Advance Diploma in Multimedia and Animation** shall be conferred on candidate who has pursued a regular course of study consisting of FOUR semesters in the relevant subject as prescribed and has appeared at the end examination and passed under the credit based system in all the examination prescribed for the Advance Diploma course in the faculty.

3. The **Diploma in Multimedia and Animation** shall be conferred on candidate who has pursued a regular course of study consisting of TWO semesters in the relevant subject as prescribed and has appeared at the end examination and passed under the credit based system in all the examination prescribed for the Diploma course in the faculty.

4. The **Certificate in Multimedia and Animation** shall be conferred on candidate who has pursued a regular course of study consisting of ONE semesters in the relevant subject as prescribed and has appeared at the end examination and passed under the credit based system in all the examination prescribed for the certificate course in the faculty.

6. The class structure and pattern of the examination

- The Number of students in a theory class shall not exceed 50.

- Maximum number of students in a batch for practical in first four semesters shall consist of 20 students and for fifth & sixth semester the batch shall consist of 15 students.
- The rules for admission to the subsequent (next) semesters will be the same as per the University guidelines.
- For theory course, there will be 50 % marks for internal (tests, tutorials, assignments) and 50 % marks for Semester End Examination (SEE).
- The Theory (SEE) and Practical Examinations will be conducted by the University at the end of each semester.
- The marks of internal and practical exam should be submitted to University in the prescribed format .
- Assessment of skill component should be done by sector skill council or industry partner.

7. The infra-structure and Teaching Staff to run the course will be as follow:-

The graduation is very important phase in the life of our young students. The college responsibly is not only to deliver a quality syllabus based education, but also to motivate them to be a good healthy citizen. In this direction, the college must have sufficient facilities to run the course. A guideline is listed below. The College must have following minimum facilities:

Infrastructure:

1. One Class room to accommodate 50 students. (approximately 250 sq.ft.)
2. A well equipped computer laboratory having a LAN system of minimum 30 nodes and having internet connectivity with broad band. All legal software, antivirus software, firewall be available for smooth functioning of the laboratory.
3. Staff room of 100 sq.ft. with one table and one Almeria for each faculty member.
4. One office space of 100 sq.ft. with appropriate furniture. .
5. One ladies room of 100 sq.ft. with attached toilet.
6. One reading room of 200 sq.ft. with seating arrangements for at least 30 people. The library may be accommodated in the library.
7. One copy of every text book among five students for each subject be available along with one copy of reference book as per the syllabus.
8. Library must subscribe for computer and scientific magazines. Appropriate general reading materials must be available for overall development of students.
9. An open space for sports activities. The college must be encouraged to have sport equipments.

Staff:

1. One Assistant Professor as per UGC-B.Voc guidelines.
2. The minimum number of teachers/visiting faculties must be appointed as per the UGC-B.Voc norms. The work load may be computed on the basis of theory classes and practicals per batch.

3. There must be one clerk in the office to look after administrative work. The record of all staffs must be maintained properly.
4. An appropriate number of class IV employees

8. Admission / Promotion process

In response to the advertisement for registration, interested students will have to register for this course. Admissions will be done on the basis of qualifying exam percentage, performance of students at Common Entrance Test (CET) and personal interview. The CET will be conducted in the month of June every year.

The student will be promoted to next semester of a year with full carry on. For admission to second year (Level 6) , he/she has to pass minimum 75% papers of first year (first semester + second semester) . For admission to third year (Level 7), he/she has to pass first year and minimum 75% papers of second year (third sem + fourth sem) .

9. Earning credits and Grade system

At the end of every semester, a letter Grade will be awarded. The performance of student will be measured by the number of credits that he/she earned by weighted Grade Point Average (GPA). The semester Grade Point Average (SGPA) will be awarded after completion of respective semester and Cumulative Grade Point Average (CGPA) will be awarded at exit point.

The grade reflects student's performance in the course. A ten point rating scale shall be used for the evaluation of the performance of the student to provide letter grade for each course and overall grade for B.Voc.(Multimedia and Animation) Program. The grade points and equivalent range of marks are shown in table.

SN	Marks Obtained (in %)	Grade points	Grade	Description
1	90 -100	9.00 – 10	O	Outstanding
2	80 – 89	8.00 – 8.90	A++	Excellent
3	70 – 79	7.00 – 7.90	A+	Exceptional
4	60 – 69	6.00 6.90	A	Very Good
5	55 – 59	5.50 – 5.90	B+	Good
6	50 – 54	5.00 – 5.40	B	Fair
7	45 – 49	4.50 – 4.90	C+	Average
8	41 – 44	4.10 – 4.40	C	Below Average
9	40	4.00	P	Pass
10	< 40	0.0	F	Fail (Unsatisfactory)

Non-appearance for exam / assessment of any paper shall be treated as fail in that paper.

Computation of SGPA and CGPA

The Semester Grade Point Average (SGPA) is calculated as

$$\text{SGPA} = \frac{\Sigma(\textit{Credits of paper} \times \textit{No. of grade points obtained})}{\Sigma(\textit{all paper credits})}$$

The Cumulative Grade Point Average will be used to describe the overall performance of all semesters and will be computed as follows.

$$\text{CGPA} = \frac{\Sigma(\text{SGPA of all semesters})}{\text{Total No. of Semesters}}$$

Grade Card :

The results will be declared by the university and the grade card will be issued after completion of every semester. The cumulative grade card with CGPA will be issued by the University at each exit point.

10. Statement showing the details of Fees Per Year for B.Voc. (Multimedia & Animation course

S.N	Particulars	Fees (Rs)
1	Prospectus	25
2	Registration	25
3	e-suvidha	50
4	Medical exam	15
5	I-card	10
6	Admission fee	25
7	Magazine	50
8	Gathering fee	50
9	Student Association Fund	10
10	Student Aid Fund	10
11	College Exam fee	75
12	College Development fee	100
13	Cultural activity/Youth festival	50
14	Disaster Management fee	20
15	Tuition fee	800

16	Gymkhana fee	50
17	Library fee	50
18	Student welfare	20
19	NSS	10
20	Ashwamedha	04
21	Avishkar	04
22	Indradhanushy	04
23	Aavahan	04
24	Abhiyan	04
25	University/college fund	10
26	Computer fee	100
27	Environmental fee	100
28	Vasantrao Kale Earn & Learn	10
29	Laboratory fee	2000
30	Library deposit	100
31	Tutorial/Journal fee	180
	Total	**3965**
32	University Eligibility fee Marathwada region	50
	For Maharashtra state	100
	Out of Maharashtra	500
	Out of country	12500

11. Statement showing details of commencement of examination and examination fees.

Examination	How many times in a year	Submission of exam forms		Commencement of exam		Exam Fees per term
		I Term	II Term	I Term	II Term	
B.Voc. (Multimedia and Animation) I,II & II year	Twice in a year	September	April	October / November	March / April	Rs. 750/- (Theory + Pract.)

12. Curriculum Structure and Scheme of Evaluation: B.Voc.(Multimedia and Animation)

First Year

S.N.	Paper No	Paper Title	No. of Credits	Scheme of Teaching	Scheme of Evaluation				
		GT= General Component **Theory** GP = General Component **Practical** VT= Vocational Component **Theory** VP = Vocational Component **Practical**		Theory / Practical **per week** (in hours)	Theory / Practical Marks			Univ. Exam duration (in hrs)	Total Marks
Semester – I					**Th**		**Pr**		
					CA	**UA**			
General Education Component (12 credits)									
1	GT101	Communication Skills Part-A	2	2	25	25		2	50
2	GT102	Environmental Science	2	2	25	25		2	50
3	GT103	Computer Fundamentals -I	2	2	25	25		2	50
4	GP101	Practical based on Communication Skills Part-A	2	4			50	2	50
5	GP102	Assignments based on Environmental Science	2	4			50	2	50
6	GP103	Practical based on Computer Fundamentals -I	2	4			50	2	50
Vocational Education Component (18 Credits)									
7	VT104	Colour Key Artist -I	2	2	25	25		2	50
8	VT105	Graphic Designer	2	2	25	25		2	50
9	VT106	Basics Of Animation	2	2	25	25		2	50
10	VP104	Practical based on Colour Key Artist -I	4	8			100	3	100
11	VP105	Practical based on Graphic Designer	4	8			100	3	100
12	VP106	Practical based on Basics Of Animation	4	8			100	3	100
		Total	**18**	**48**					**450**
Semester –II									
General Education Component (12 credits)									

1	GT201	Communication Skills Part-B	2	2	25	25		2	50
2	GT202	Web Designing	2	2	25	25		2	50
3	GT203	Computer Fundamentals -II	2	2	25	25		2	50
4	GP201	Practical based on Communication Skills Part-B	2	4			50	2	50
5	GP202	Prj.based on web designing	2	4			50	2	50
6	GP203	Practical based on Computer Fundamentals -II	2	4			50	2	50
Vocational Education Component (18 Credits)									
7	VT204	Colour Key Artist -II	2	2	25	25		2	50
8	VT205	Paper Modeling	2	2	25	25		2	50
9	VT206	Working with Adobe Audition	2	2	25	25		2	50
10	VP204	Practical based on Colour Key Artist -II	4	4			100	3	100
11	VP205	Practical based on Paper Modeling	4	4			100	3	100
12	VP206	Practical based on Adobe Audition	4	4			100	3	100
		Total	**30**	**48**					**750**

Note : Theory and practical exam should be conducted at the end of each semester.

Second Year

S.N.	Paper No	Paper Title	No. of Credits	Scheme of Teaching	Scheme of Evaluation				
		GT= General Component **Theory** GP = General Component **Practical** VT= Vocational Component **Theory** VP = Vocational Component **Practical**		Theory / Practical **per week** (in hours)	Theory / Practical Marks			Univ. Exam duration (in hrs)	Total Marks
Semester – III					**Th**		**Pr**		
					CA	**UA**			
General Education Component (12 credits)									
1	GT301	Communicational Skills Part C	2	2	25	25		2	50
2	GT302	Programming in 'C'	2	2	25	25		2	50
3	GT303	Ethics Cyber Law	2	2	25	25		2	50
4	GP301	Practical based on Communicational Skills Part C	2	4			50	2	50

5	GP302	Practical based on Programming 'C'	2	4			50	2	50
6	GP303	Assignments based on Ethics Cyber Law	2	4			50	2	50
Vocational Education Component (18 Credits)									
7	VT304	Working with Action Script	2	2	25	25		2	50
8	VT305	Character Designer	2	2	25	25		2	50
9	VT306	Working with 3D max	2	2	25	25		2	50
10	VP304	Practical based on Working with Action Script	4	8			100	3	100
11	VP305	Practical based on Character Designer	4	8			100	3	100
12	VP306	Practical based on 3Ds Max	4	8			100	3	100
		Total	**18**	**48**					**450**
Semester –IV									
General Education Component (12 credits)									
1	GT401	Communicational Skills Part D	2	2	25	25		2	50
2	GT402	Advanced ‘C’	2	2	25	25		2	50
3	GT403	Business Data Processing and DBMS	2	2	25	25		2	50
4	GP401	Practical based on Communicational Skills Part D	2	4			50	2	50
5	GT402	Practical based on Advanced 'C'	2	4			50	2	50
6	GT403	Assignments based on Business Data Processing and DBMS	2	4			50	2	50
Vocational Education Component (18 Credits)									
7	VT404	Video Editing	2	2	25	25		2	50
8	VT405	3D Modeling with 3Ds Max	2	2	25	25		2	50
9	VT406	Camera Operator	2	2	25	25		2	50
10	VP404	Practical based on Video Editing using Adobe Premier Pro	4	8			100	3	100
11	VP405	Practical Based on 3D Modeling	4	8			100	3	100
12	VP406	Practical Based on Camera Operator	4	8			100	3	100
		Total	**30**	**48**					**750**

Note : Theory and practical exam should be conducted at the end of each semester.

Third Year

S.N.	Paper No	Paper Title	No. of Credits	Scheme of Teaching	Scheme of Evaluation				
		GT= General Component **Theory** GP = General Component **Practical** VT= Vocational Component **Theory** VP = Vocational Component **Practical**		Theory / Practical **per week** (in hours)	Theory / Practical Marks			Univ. Exam duration (in hrs)	Total Marks
Semester – V					**Th**		**Pr**		
					CA	**UA**			
General Education Component (12 credits)									
1	GT501	Internet Programming Using PHP	2	2	25	25		2	50
2	GT502	Advanced Programming in 'C'	2	2	25	25		2	50
3	GT503	Business Data Pro. & Data Base Mgmt. System	2	2	25	25		2	50
4	GP501	Practical based on PHP	2	4			50	2	50
5	GP502	Practical based on Advanced Programming in 'C'	2	4			50	2	50
6	GP503	Assignments based on Business Data Processing & Data Base Mgmt. System	2	4			50	2	50
Vocational Education Component (18 Credits)									
7	VT504	Visual Effects with Roto	2	2	25	25		2	50
8	VT505	Concept of Material,Map,Camera & Light	2	2	25	25		2	50
9	VT506	Mudbox	2	2	25	25		2	50
10	VP504	Practical based on VFX and Roto	4	8			100	3	100
11	VP505	Practical based on Material,Map, Light & Camera	4	8			100	3	100

12	VP506	Practical based on Mudbox	4	8			100	3	100
		Total	**18**	**48**					**450**
Semester –VI									
General Education Component (12 credits)									
1	GT601	Advanced PHP	2	2	25	25		2	50
2	GT602	Network and Network Security	2	2	25	25		2	50
3	GT603	Programmig Using C++	2	2	25	25		2	50
4	GP601	Practical based on Adv. PHP	2	4			50	2	50
5	GP602	Practical based on Network and Network Security	2	4			50	2	50
6	GP603	Practical based on Programmig Using C++	2	4			50	2	50
Vocational Education Component (18 Credits)									
7	VT604	Script Writing and Story Boarding	2	2	25	25		2	50
8	VT605	Rigging Techniques with 3Ds Max	2	2	25	25		2	50
9	VT606	Rendering Artist	2	2	25	25		2	50
10	**VP604**	**Seminar**	2	4			50	3	50
11	**VP605**	**Major Project using 3Ds Max**	**10**	20			250	3	250
		Total	**30**	**48**					**750**

Note : Theory and practical exam should be conducted at the end of each semester.

13. Question paper pattern for Semester End Exam

Note : 1. All questions carry equal marks

2. All questions are compulsory

Q. No.	Format	Marks for 4 credit paper	Marks for 2 credit paper
1 (Based on	Multiple Choice/Fill in the blank/Match the pair/ one line answer.	1 x 10 = 10	1X5=5

All Units)	1) 2) . . 10)		
2 (Based on Unit –I)	(a) (b) OR (a)	10	5
3 (Based on Unit-II)	(a) (b) OR (a)	10	5
4 (Based on Unit –III)	(a) (b) OR (a)	10	5
5 (Based on Unit-IV)	(a) (b) OR (a)	10	5
	Total	**50**	**25**

B.Voc.

(Multimedia and Animation)

First Year

Semester-I & II

(With Effect from June -2016)

General Component

GT101: Communication Skills Part-A

UINIT-I

Grammar:

- Parts of speech

Nouns, Kinds of Nouns, Pronoun, Verb, Adjectives Adverb, Prepositions, Conjunctions and Interjections

- Vocabulary building, Constructing Para

UNIT-II

- Tenses

  Present tense, Past tense, Future tense

- Articles

  Use of A, An, The

UNIT-III

Process of Communication:

- Attributes of Communication : Sender, Receiver, Medium, Channel ,Message Feedback
- Objectives of communication Why communication is necessary?
- Importance of Communication
- Conversations: Face –to – Face and Telephonic

UNIT-IV

Listening Comprehensive:

- Listening and Typing – Listening and sequencing of sentences, Common Errors in English

Reference Book:

1. Business Communication , By Urmila Rai & S.M.Rai. Himalaya Pub.
2. Communication Skill for Effective Management By Dr.Anjali Ghanekar. Everest Pub. House.
3. Developing Communication Skill By Krishna Mohan, Meera Banerji. McMillan

GP101: 10 Practical's based on Communication Skills Part-A

Simple conversation

- Meeting people, pictorial conversation, identifying objects, handling situation. Vocabulary building Conversation with seniors and peers.

General Component

GT102: Environmental Science

UNIT-I : Multidisciplinary nature of environmental studies

Definition, scope and importance, need for public awareness.

Natural Resources : Renewable and non-renewable resources :

Natural resources and associated problems.

a) Forest resources : Use and over-exploitation, deforestation, case studies. Timber extraction, mining, dams and their effects on forest and tribal people.

b) Water resources : Use and over-utilization of surface and ground water, floods, drought, conflicts over water, dams-benefits and problems.

c) Mineral resources : Use and exploitation, environmental effects of extracting and using mineral resources, case studies.

d) Food resources : World food problems, changes caused by agriculture and over-grazing, effects of modern agriculture, fertilizer-pesticide problems, water logging, salinity, case studies.

e) Energy resources : Growing energy needs, renewable and non renewable energy sources, use of alternate energy sources. Case studies.

f) Land resources : Land as a resource, land degradation, man induced landslides, soil erosion and desertification.

UNIT-II : Ecosystems

• Concept of an ecosystem, Structure and function of an ecosystem, Producers, consumers and decomposers, Energy flow in the ecosystem, Ecological succession, Food chains, food webs and ecological pyramids, Introduction, types, characteristic

features, structure and function of the following ecosystems :- a. Forest ecosystem b. Grassland ecosystem c. Desert ecosystem d. Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries)

Biodiversity and its conservation : Introduction – Definition : genetic, species and ecosystem diversity, Biogeographical classification of India , Value of biodiversity : consumptive use, productive use, social, ethical, aesthetic and option values , Biodiversity at global, National and local levels, India as a mega-diversity nation , Hot-sports of biodiversity, Threats to biodiversity : habitat loss, poaching of wildlife, man-wildlife conflicts. Endangered and endemic species of India , Conservation of biodiversity : In-situ and Ex-situ conservation of biodiversity.

UNIT III : Environmental Pollution : Definition, Cause, effects and control measures of :- a. Air pollution b. Water pollution c. Soil pollution d. Marine pollution e. Noise pollution f. Thermal pollution g. Nuclear hazards Solid waste Management : Causes, effects and control measures of urban and industrial wastes. Role of an individual in prevention of pollution, Pollution case studies, Disaster management : floods, earthquake, cyclone and landslides.

UNIT-IV : Social Issues and the Environment

From Unsustainable to Sustainable development , Urban problems related to energy , Water conservation, rain water harvesting, watershed management , Resettlement and rahabilitation of people; its problems and concerns. Case Studies , Environmental ethics : Issues and possible solutions, Climate change, global warming, acid rain, ozone layer depletion, nuclear
accidents and holocaust. Case Studies, Wasteland reclamation, Consumerism and waste products, Environment Protection Act, Air (Prevention and Control of Pollution) Act, Water (Prevention and control of Pollution) Act , Wildlife Protection Act , Forest Conservation Act , Issues involved in enforcement of environmental legislation, Public awareness.

Human Population and the Environment : Population growth, variation among nations, Population explosion – Family Welfare Programme, Environment and human health, Human Rights, Value Education, HIV/AIDS, Women and Child Welfare, Role of Information Technology in Environment and human health, Case Studies.

Field work

- Visit to a local area to document environmental assets river/ forest/grassland/hill/mountain
- Visit to a local polluted site-Urban/Rural/Industrial/Agricultural
- Study of common plants, insects, birds.

• Study of simple ecosystems-pond, river, hill slopes, etc. (Field work Equal to 5 lecture hours)

REFERENCES

a) Agarwal, K.C. 2001 Environmental Biology, Nidi Publ. Ltd. Bikaner.

b) Bharucha Erach, The Biodiversity of India, Mapin Publishing Pvt. Ltd., Ahmedabad –380 013, India, Email:mapin@icenet.net (R)

c) Brunner R.C., 1989, Hazardous Waste Incineration, McGraw Hill Inc. 480p

d) Clark R.S., Marine Pollution, Clanderson Press Oxford (TB)

e) Cunningham, W.P. Cooper, T.H. Gorhani, E & Hepworth, M.T. 2001, Environmental Encyclopedia, Jaico Publ. House, Mumabai, 1196p

f) De A.K., Environmental Chemistry, Wiley Eastern Ltd.

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i) Hawkins R.E., Encyclopedia of Indian Natural History, Bombay Natural History Society, Bombay (R)

j) Heywood, V.H & Waston, R.T. 1995. Global Biodiversity Assessment. Cambridge Univ. Press 1140p.

k) Jadhav, H & Bhosale, V.M. 1995. Environmental Protection and Laws. Himalaya Pub. House, Delhi 284 p.

l) Mckinney, M.L. & School, R.M. 1996. Environmental Science Systems & Solutions, Web enhanced edition. 639p.

GP102: 10 Assignments based on Environmental Science

General Component

GT103:Computer Fundamentals -I

UNIT-I

Information Concepts and Processing : Evolution of information processing, Data, Information language and communication. Elements of a computer processing system : Hardware-CPU, storage devices and media.VDU, Input-output devices, data communication equipment. Software — System software, Application software.

UNIT-II

Operating Systems : Concept as resource manager and coordinator of processor, devices and memory. Command interpreter, typical commands of DOS/ UNIX/ Netware, GUI-Windows. **Computers and Communication :** Single user, multi-user, workstation, and client
server systems. Computer networks, Network protocols. LAN, WAN, Services offered by Internet.

UNIT-III

Internet

- Internet Basics
- Navigating the Web (Exercise 1 – Navigating the web site)
- Finding Information on the Web (Exercise 2 – Searching result on the web)
- Communication Using E-Mail (Exercise 3 – Communicate result to your friends)

UNIT-IV

Introduction to Laptops, Portable System background, System Features, Processors, Mother Boards, Memory, Power, Expansion Bus, Hard Disk & Removable Storage Devices, Laptop Components, Laptop Maintenance & Assembling, Linux, Multimedia, Internet, Computer VIRUS, Wi-Fi Network Trouble Shooting.

Reference Books:

1. Fundamentals of Information Technology By Chetan Srivastava, Kalyani Publishers
2. Fundamentals of Computers By V.Rajaraman, PHI Publication , IVth Edition.
3. Fundamentals of Programming By Raj K.Jain, S.Chand Publication
4. Let Us C By Yashwant Kanitkar
5. Programming with C - 2nd Edition - Byron Gottfried

GP103: 10 PRACTICAL ASSIGNMENTS BASED ON Computer Fundamentals-I

Vocational Component

VT104: Colour Key Artist -I

UNIT-I

1. Image Representation:

Introduction ,The Digital Image ,Raster Image Representation ,Hardware Frame Buffers, Grayscale Frame Buffer , Pseudo-color Frame Buffer ,True-Color Frame Buffer , Representation of Color ,

Additive vs. Subtractive Primaries, RGB and CMYK color spaces, Grey scale Conversion, Can any color be represented in RGB space? , CIE color space, Hue, Saturation, Value (HSV) color space, choosing an appropriate color space.

UNIT-II

2. Principles of Art Color theory:

Primary Colors, Secondary Colors, Tertiary Colors, Standard 6-Color Wheel, Standard 12-Color Wheel, Three Characteristics of Color, Scale of Color Keys, Warm and Cool Colors, Warm and cool color schemes, Complementary color scheme, Triadic color scheme, Contrasting Hues Create Vibrating Effects, Color Symbolism.

UNIT-III

3. 2D design color concept:

The traditional medium using watercolor, Poster color etc, Color Mixing with Paints, 2D design composition.

UNIT-IV

4.Importance of Colour in Graphic & Art Media:

Principles of Designing, Culture of Art Colour

Reference Book:

1. Principles of Visual Design LCC 2720Instructor: Brian Shrank
2. Color Theory- Compiled by Professor Lampe Leong

VP104: 20 PRACTICAL ASSIGNMENTS BASED ON COLOUR KEY ARTIST-I

Vocational Component

VT105: Graphic Designer

UNIT-I

Introduction Exploring Workspace:

Introduction to Corel Draw, Getting Started, Moving Around and Viewing Drawings, Toolbox, Defining the Page Size, Creating Basic Shapes, Using the Pen Tools, Editing Objects, Working with Text, Creating You Own Font.

UNIT-II

Image Representation:

Introduction ,The Digital Image ,Raster Image Representation ,Hardware Frame Buffers, Grayscale Frame Buffer , Pseudo-color Frame Buffer ,True-Color Frame Buffer , Representation of Color ,

Additive vs. Subtractive Primaries, RGB and CMYK color spaces, Grayscale Conversion

UNIT-III

Creating Special Effects:

Envelope and Distortion Effects, Blends and Contours, Lens Effects and Transparency,

Embellishments: Bevels, Power Clips and Shadows, Working with Perspective.

UNIT-IV

Computer Graphics on the World Wide Web:

Image Files: GIF, JPEG, PNG, Animation Files: Animated GIF, MPEG, QuickTime, The Graphics Process: Geometric Modeling, 3D Animation, Texturing, Rendering, Image Storage And Display.

Reference Book:

1. Fundamentals of Computer Graphics - CM20219 Lecture Notes,Dr John Collomosse,University of Bath, UK
2. Corel Draw x4 Official Guide- jul- 2008 by Gary David Boutom.

VP105 : 20 PRACTICAL ASSIGNMENTS BASED ON CORELDRAW

Vocational Component

VT106: Basics of Animation

UNIT-I

Introduction to Animation:

History of Animation, The Origins of Animation, Types of Animation, Terms used in Animation, Basic Principles of Animation

Introduction to equipment required for animation:

Animator's Drawing Tools, Rapid Sketching & Drawing, Developing Animation Character

UNIT-II

Developing the characters with computer animation:

Anatomy & Body Language, 2D virtual drawing for animation

UNIT-III

Motion studies:

Thumbnails, sequential movement drawing, drawing for motion, stop motion animation techniques.

UNIT-IV

Introduction to Flash :

Working in Flash, Drawing with Flash, Basic animation, Working in the timeline, Working with symbols, Shape tween, staggering animation effect, Text effect, Animation Review, Break apart and distribute, Intro to Motion Guide, Mask layers, Button Intro., Character waking

Reference:

1. The Illusion Of Life by Walt Disney
2. The Complete Animation course by Chris Patmore, By Barons Educational Series(New York)
3. Anatomy for the Artist by Daniel Carter and Michael Courtney
4. Macromedia Flash mx express- By Leon cych

VP106 : 20 PRACTICAL ASSIGNMENTS BASED ON FLASH.

B.Voc.

(Multimedia and Animation)

First Year

Semester-II

(With Effect from June -2016)

General Component

GT201: Communication Skills Part-B

UNIT-I

Written Communication:

- Punctuation marks, letters, formal letters, informal letters mails, texting, C's of Good communication, Language of Business Writing
- Written Media of Communication – Notices, Minutes, Manuals, Leaflets, Complaints ,Suggestion, Job Application

UNIT-II

Reports:

- Types of Report, Characteristics of good Report, Essential Requisites of good Reports, Planning the Report, Outlining Issues of Analysis, Writing the Report

Non-verbal communication:

- Body language , gestures, facial expressions

UNIT-III

Group Communication:

- Problem of Group Communication, Meeting – Types of Meeting, Advantages and Disadvantages of Meeting, Preparation for Meeting, Conduct of Meeting, Responsibility of Participants

UNIT-IV

Interview:

- Purpose, Types of Interviews- promotion, appraisal, exit, telephone
- Employment or selection Interview: Candidate's preparation, Question commonly asked in interview, role of Interviewer, Interviewer's prepration

Reference Books

1. Business Communication,By Urmila Rai & S.M.Rai. Himalaya Pub.
2. Communication Skill for Effective Management By Dr.Anjali Ghanekar.

Everest Pub. House.

3. Developing Communication Skill By Krishna Mohan, Meera Banerji. McMillan

GP201: Practical BASED ON GENERAL DISCUSSIONS:

GDs, debate, overcoming stage fear Reading, pronunciation correction, Listening and answering questions.

General Component

GT202: Web Designing

UNIT-I

1.HTML5 Reference :

HTML5 History ,What is HTML5 ,New Elements ,DOCTYPE Element ,Article Element,

Aside Element ,Audio Element ,Bdi Element ,Canvas Element ,Command Element , Datalist Element ,Details Element ,Embed Element ,Figure Element ,Figcaption Element , Footer Element, Header Element , Hgroup Element , Keygen Element .

UNIT II

2.HTML5 Reference :

Mark Element , Main Element , Menu Element , Meter Element , Nav Element , Output Element , Progress Element , Ruby Element , Section Element , Source Element , Summary Element , Svg Element ,Time Element , Track Element ,Video Element , Wbr Element ,Video/DOM

UNIT-III

3.CSS3 References:

CSS3 History ,What is CSS3 ,Animations ,Borders, Backgrounds ,Fonts,Multiple Columns ,Text Effects , Transitions Effects ,User Interface of CSS3 ,2D Transforms , 3D Transforms with CSS3.

UNIT-IV

4.Form Attributes and Input Attributes:

Form: Auto complete Attribute of HTML5 ,Novalidate Attribute of HTML5

Input Attributes : Autofocus ,Form ,Formaction ,Formenctype ,Form method , Formnovalidate, Formtarget , Height and Width ,List , Min and Max ,Multiple ,Pattern (regexp) ,Placeholder ,Required ,Step .

Reference Book:

1. Beginner 53 Tutorials by Swapnil Raja

GP202 : 10 PRACTICAL ASSIGNMENTS BASED ON DREAMWEAVER

General Component

GT203: Computer Fundamentals -II

UNIT-I

Introduction to graphical user interface, window operating system, Anatomy of windows, organizing folders and files, multitasking, recycle bin, my computer,

Word Processing : Creation, editing, formatting of documents, global search and replacement of text, special print features, mail merge, spelling checker, MS-Word should be used as teaching tool.

UNIT-II

Spread Sheet : Getting started with EXCEL, EXCEL worksheet, entering data into worksheet, editing, cell addressing, ranges and range names, commands, menus, copying and moving cell contents, Inserting and deleting rows and columns, column— width control, cell protection, printing reports, creating and displaying graphs, printing graphs, statistical functions.

UNIT-III

MS-Power Point software for presentation: Overview of Presentation Graphics, Creating a Presentation (Exercise 1 – Creating a Annual Day Presentation), Modifying and Refining a Presentation (Exercise 2 – Modifying and Refining Presentation)

UNIT IV

Applying Special effects and animation for Presentations

Reference Book:

1. Beginning Microsoft Office 2010 by Guy Hart-Davis

2. Easy Computer Basics, Windows 8 Edition by Michael Miller

GP203: 10 PRACTICAL ASSIGNMENTS BASED ON COMPUTER FUNDAMENTALS-II

Vocational Component

VT204: Colour Key Artist -II

UNIT-I

1. Welcome to Photoshop 6 :

Introduction: What Is Photoshop? Image-Editing Theory ,Inside Photoshop ,A First Look at Photoshop 6,The Photoshop Desktop, Navigating in Photoshop, How Images Work, The Resolution of Screen Images, How to Open, Duplicate, and Save Images, File Format Roundup, Resampling and Cropping.

2. Painting :

Defining Colors: Selecting and Editing Colors, Working in Different Color Modes, Using Photoshop's Other Color Selection Methods ,Introducing Color Channels, Painting and Editing , Paint and Edit Tool Basics, Brush Shape and Opacity, Brush Dynamics, Brush Modes, Character color keys, Background color keys, Lighting keys, Shadow keys Adding color to line drawings.

UNIT-II

3. Retouching:

Filling and Stroking :Filling Portions of an Image, Filling Selections with Color or Patterns, Applying Gradient Fills, Applying Strokes, Retouching, Repeating, and Restoring , Cloning Image Elements, Applying Repeating , Patterns.

UNIT-III

4. Selections, Masks, and Filters .

Selections and Paths, Selection Fundamentals, Ways to Change Selection Outlines, Moving and Duplicating Selections, How to Draw and Edit Paths, Corrective Filtering ,Filter Basics

UNIT-IV

5. Layers, Objects, and Text

Working with Layers, Working with Layers, Selecting the Contents of Layers, Moving, Linking, Aligning Layers ,Applying Transformations, Masking and Layers, The Wonders of Blend Modes ,Mixing Images Together ,Using Opacity and Blend Modes., Applying Advanced Blending Options , Shapes and Styles , Drawing Shapes, Modifying and Saving Effects, Using the Type Tool

Reference Book:

1. Photoshop Bible By Deck McClelland
2. Adobe Photoshop CS3 Classroom- by Adobe Creative Team

VP204: 20 PRACTICAL ASSIGNMENTS BASED ON PHOTOSHOP

Vocational Component

VT205: Paper Modeling

UNIT-I

1. **Paper Modeling :**

   History of Paper Modeling, Technique of Paper Modeling,

   3D models to paper models, Various Sectors Use, Image Reference, Deferent views observation study, color Paper combination

UNIT-II

2. **Basic Tips and Tricks for Paper Models:**

   Basic Tools, Paper, Folding, Basic Drawing Shape, Making Tubes, Making Cube, Making Box, Making Cones, Finishing Details, Design Ideas

UNIT-III

3. **Principles of Paper Modeling:**

   History of Paper Craft, Animation and Paper Model, Introduction to types of paper models

UNIT-IV

4. **Introduction to Clay Animation Models :**

History of clay animation, concept of clay animation, the idea, tools, what is Armature? Sets, basic knowledge for creating your Character, background & color combination

Reference Book:

1. Paper Models that Move A new edition of Walter Ruffler's book
2. My Little House: Easter Bible paper Toys Free Printable 3D Paper Set

VP205 : 10 PRACTICAL ASSIGNMENTS BASED ON MODELLER-I

Vocational Component

VT206: WORKING WITH ADOBE AUDITION

UNIT-I

1. **Audio interface:**

Audition Interface Basics, The Audition Workspace, Introduction to tools, Extract

Audio from a Video File, using Adobe Audition CS6.

2. **The Audition Environment:**

Auditions dual personality, navigation using external interface, Testing Inputs and

outputs with auditions.

UNIT-II

3. **Basic Audio Editing:**

Opening a file for editing ,selecting region for editing and changing its level,

Copying, Mixing cutting, deleting and pasting audio regions, cutting and deleting

with multiple clipboards, repeating part of a wave from to create a loop,

UNIT-III

1. **The Basics of Sound Recording:**

Technique of Editing and Mixing equipment, pre-recorded sound tracks/clips, Tonal quality

UNIT-IV

2. **Signal Processing:**

Effects basics, Using the effects rack, Amplitude and compression Effects, Delay and eco effects, Filter and EQ Effects, Noise reduction , Time and pitch effects, Using effects menu.

Reference Book:

1. Adobe Audition - Bible 2015/16

2. Adobe® Audition® CS6 Classroom in a Book By Adobe Systems

VP206: 20 PRACTICAL ASSIGNMENTS BASED ON ADOBE AUDITION

B.Voc.

(Multimedia and Animation)

Second Year

Semester-III & IV

(With Effect from June -2016)

General Component

GT301: COMMUNICATION SKILLS-PART C

UNIT-I

Grammar – Overview

Making sentences using

- Parts of speech
- Tenses
- Articles

UNIT-II

Enhancing writing skills

- Short story writing
- Topic expansion

UNIT-III

- Applications for leave, job, Resignations and
- General letter writing
- Resume writing

UNIT-IV

Language of business writing

- Requisites of public speaking
- Body language.
- Grooming and etiquette

Reference Books:

1. Business Communication , By Urmila Rai & S.M.Rai. Himalaya Pub.
2. Communication Skill for Effective Management By Dr.Anjali Ghanekar. Everest Pub. House.
3. Developing Communication Skill By Krishna Mohan, Meera Banerji. McMillan

GP301: PRACTICAL BASED ON COMMUNICATION SKILLS-PART C

Vocabulary building through simple conversations GDs, Debates Role plays and Presentations

General Component

GT302: PROGRAMMING IN 'C'

UNIT – I

1. Introduction :

a. An Overview of C , History of C language, C as a Structured Language, Features of
C.

2. Basic Elements & Operators

• Character set, C Token, Identifier & Keywords, Variables

• Constant and its types. Integer constant, floating point constant, character constant,
string constants.

• Operators: Arithmetic, Relational, Logical, Unary operators: Increment & decrement

Assignment and Conditional operator.

• Precedence & Associatively of Operators

UNIT – II

3. Data Types

• Data Types: *int, char, float, double*. Declaration & Initialization.

• Type modifier: long, short, signed & unsigned

4. C Program & I/O statements

• Structure of C Program, Compilation & Execution of C program

• I/O: Introduction, Formatted Input/Output function: *scanf & printf*, Escape sequence

characters.

UNIT – III

• Library functions: General & Maths.

5. Control and Iterative Statements :

• Simple if, nested if, if-else, else if ladder

• Switch-case statement

• The conditional expression (? : operator)

• *while* and *do-while* loop, and *for* loop

• *break* & *continue* statement, *goto* statement

UNIT – IV

6. Arrays:

• Introduction, Declaration and initialization Accessing array elements, Memory representation of array.

• One dimension and multidimensional arrays, character array, Introduction to string.

Text Books::

1. Let us C : Y.P. Kanetkar [bpb publication]

2. Programming in C : E. Balaburuswamy [Tata macgraw hill]

3. Programming in C : Goterfried [Shaums' Series]

GP302: 10 PRACTICALS BASED ON PROGRAMMING IN 'C'

General Component

GT303: EITHICS AND CYBER LAW

Unit-I

Basic Concepts of Technology and Law , Understanding the Technology of Internet, Scope of Cyber Laws , Cyber Jurisprudence

Unit-II

Law of Digital Contracts , The Essence of Digital Contracts, The System of Digital Signatures, The Role and Function of Certifying Authorities, The Science of Cryptography

Unit-III

E-Governance Cyber Crimes and Cyber Laws

Unit-IV

Information Technology Act 2000 Cyber Law:

Issues in E-Business Management Major issues in Cyber Evidence Management Cyber Law Compliancy Audit,

Books

Text books:

1. Godbole,“ Information Systems Security”, Willey

2. Merkov, Breithaupt,“ Information Security”, Pearson Education

3. Yadav, “Foundations of Information Technology”, New Age, Delhi

4. Schou, Shoemaker, “ Information Assurance for the Enterprise”, Tata McGraw Hill

5. Sood,“Cyber Laws Simplified”, Mc Graw Hill

6. Furnell, “Computer Insecurity”, Springer

GP303: 10 ASSIGNMENTS BASED ON EITHICS & CYBER LAW

Vocational Component

VT304: WORKING WITH ACTION SCRIPT

UNIT-I

1. **Introduction To ActionScript:**

Introducing the Actions Panel, When to Use ActionScript, Working in Normal Mode &

Expert Mode, Using the Reference Panel, Understanding ActionScript Syntax,**Creating**

Action Script Movies: About Flash Symbol Types, Adding an Action to Your Script,

Adding an Action to a Key frame, Adding an Action to an Object, Adding an Action to

a Button.

Controlling The Timeline & Movie Content With ActionScript:

Starting and Stopping the Movie, Navigating to Frames and Scenes, Creating an

Interactive Animation, Navigating to URLs, Opening a URL in a Different Browser

Window, Creating

Presentations, Working with Flash Levels, Using the LoadMovie and UnloadMovie

Action

UNIT-II

Creating Action Script Loops:

About Loops, Looping Between Frames, Creating a For Loop, Creating a While Loop,

Creating a Do While Loop, Working With Variables And Arrays: About Variables and

Arrays, Understanding Variable Data Types, Variable and Array Naming Conventions,

Declaring a Variable, Creating an Array, Working with Arrays, Getting Data From an

Array

UNIT-III

Modifying An Object With Action Script:

Creating a Movie Clip & Movie Clip Instances, Using the Set Property Action,

Changing an Object's,

Getting an Object's Properties, Using Action Script with Text: Creating Input Text Blocks, Creating Dynamic Text Blocks, Loading Text From an External Document, Creating Rich Formatted Text

UNIT-IV

2. Flash UI Components:

Push Button , Checkbox , Radio Button, Message Box, Combo Box, List Box, Linking a Combo Box with a List Box, Creating a Master-Detail View, Scrollbars Component, Changing the Look and Feel of Components

Reference Books:

1. Adobe® flash® professional, help & tutorial
2. Adobe ***flash*** professional CS5 ***Bible***

VP304: 20 PRACTICALS BASED ON WORKING WITH ACTION SCRIPT

Vocational Component

VT305 : Character Designer

UNIT-I

1. **Introduction to Animation Artist:**
   Skills required for an animation artist, Terms used in Animation,
2. **Introduction to equipment required for animation:**
   Animator's Drawing Tools, 2 D virtual drawing for
   Animation, Rapid Sketching & Drawing,

UNIT-II

3. **Animator's Art Skills:** Basic Drawing, Perspective, Light & shade, Cloth, Facial expressions, Introduction to pose to pose sketching, basic concepts in
   Drawing scenes and background
4. **Character Anatomy:** Basic Shape, Basic Proportions, Key Lines, Heads, Hands & Legs, Muscles.

UNIT-III

5. **Character Design and Development:**

Character Design, Artistic Approach, Types of Design, Designing a Character

UNIT-IV

6. **Developing the character on Model Sheet Paper:**
   Research, Skeleton, Construction, Sketching, Tracing,
   Body Language, Shape, Shading, Adding Colors,
   Three dimensional drawings of characters

Reference:

1. Figure Study Made Easy By- Aditya Chari -- Grace Publication
2. Perspective- By Milind Mulik -- Jyotsna Prakashan
3. Anatomy for the Artist by Daniel Carter and Michael Courtney
4. An Afternoon - with David Colman
5. Character Design from the Ground Up
6. Artwork by Victor Navone the animation archive:Character model & expression sheets

VP305: 20 PRACTICALS BASED ON CHARACTER DESIGNER

Vocational Component

VT306: WORKING WITH 3DS MAX

UNIT-I

1. **Exploring the Max Interface:**
   The Interface Elements, Using the Menus, Toolbars, Viewports, Command Panel, Lower Interface Bar Controls, Interacting with the Interface
2. **Working with the Viewports Files and XRefs:**
   Understanding 3D Space, Using the Viewport Navigation Controls, Configuring the Viewports, Working with Viewport Backgrounds, Working with Max Scene Files, Setting File Preferences, Importing and Exporting, Referencing External Objects

UNIT-II

3. **Creating and Editing Primitive Objects:**
   Creating Primitive Objects, Exploring the Primitive Object Types, **Selecting Objects and Setting Object Properties:** Selecting Objects, Setting Object Properties, Hiding and Freezing Objects, Using Layers, **Transforming Objects—Translate, Rotate, and Scale:** Translating, Rotating, and Scaling Objects, Working with the Transformation Tools, Using Pivot Points, Using the Align Commands, Using Grids, Using Snap Options.

UNIT-III

4. **Cloning Objects and Creating Object Arrays:**
   Cloning Objects, Understanding Cloning Options, Mirroring Objects, Cloning over Time, Spacing Cloned Objects, Creating Arrays of Objects, **Introducing Modifiers for Basic Object Deformation:** Exploring the Modifier Stack, Exploring Modifier Types

UNIT-IV

5. **Grouping and Linking Objects:**
   Working with Groups, Building Assemblies, Understanding Parent, Child, and Root Relationships, Displaying Links and Hierarchies, Working with Linked Objects, **Working with the Schematic View:** Using the Schematic View Window, Working with Hierarchies, Setting Schematic View Preferences

Reference Book:

1. 3Ds Max 6 Bible by Kelly L. Murdock

VP306: 20 PRACTICAL ASSIGNMENTS BASED ON 3Ds MAX.

B.Voc.

(Multimedia and Animation)

Second Year

Semester-IV

(With Effect from June -2016)

General Component

GT401: COMMUNICATION SKILLS-PART D

UNIT-I

Personal Interviews:

- Self introductions.
- FAQ.s of interviews.

UNIT-II

- Preparations for interviews
- Interviewee's questions

UNIT-III

Public speaking:

- Requisites of public speaking
- Body language.
- Grooming and etiquette

UNIT-IV

Oral Communication:

- Speeches and Presentations
- Dialogues.

Reference Books:

1. Business Communication, By Urmila Rai & S.M.Rai. Himalaya Pub.
2. Communication Skill for Effective Management By Dr.Anjali Ghanekar. Everest Pub. House.
3. Developing Communication Skill By Krishna Mohan, Meera Banerji. McMillan

GP401: PRACTICAL BASED ON GENERAL DISCUSSIONS

Debates, Presentations and Seminars, overcoming stage fear. Mock Interviews

General Component

GT402: ADVANCED 'C'

UNIT – I

1. Functions

• Introduction, types of functions. Defining functions, Arguments, Function prototype, actual parameters and formal parameters, Calling function, Returning function results, Call by value, Recursion.

UNIT – II

2. Structure & Union

• Structure: Introduction, Declaration and initializing structure, Accessing
structure members, Nested structures, Arrays of structure, *typedef* statement.

• Unions: Declaration, Difference between structure and union

UNIT – III

3. Pointers:

• Introduction, Memory organization. Declaration and initialization of pointers. The pointer operator * and &, De-referencing, Pointer

expression and pointer arithmetic, Pointer to pointer.

UNIT – IV

4. Storage Class:

• Storage classes, Scope, visibility and lifetime of variable, block and file scope, auto, extern, static and register storage classes.

Text Books:

1. Let us C Solutions : Y.P. Kanetkar [bpb publication]
2. Programming in C : E. Balagurusamy. [Tata macgraw hill]
3. Programming in C : Goterfried [Shaums Series]

References Books:

1. Spirit of “C” : Moolish Kooper.
2. Test your Skills in C : Y.Kanetkar

GP402: 10 PRACTICALS BASED ON ADVANCED ‘C’.

General Component

GT403: BUSINESS DATA PROCESSING AND DBMS

UNIT-I

Introduction to Data Processing : Records and files : Data collection, preparation, verification, editing and checking. Business Files : Master and transaction files, file generations, backups and file recovery procedures.

UNIT-II

DBMS and its advantages; Data independence, data models; network model. DBTG

proposal; data definition and manipulation languages, hierarchical and relational models,

storage organization for relations, relational algebra and calculus, relational query, languages query, processor and optimizer.

UNIT-III

Design of a Database : Normalization theory for design of relational databases. Functional

dependencies, normal forms, multivalued dependencies, decomposition, integrity.

UNIT – IV

Introduction to SQL (Mysql/Oracle): Queries under DDL, DML, DCL & TCL.

Reference Books:

1. Database System concepts : Korth, Siberschatz , Fifth Edition
2. An Introduction to Database System : B.Desai, Revised Edition

GP403: 10 PRACTICAL ASSIGNMENTS BASED ON BUSINESS DATA PROCESSING AND DBMS

Vocational Component

VT404: VIDEO EDITING

UNIT-I

1. Editing sequences and clips:

Creating and changing sequences, Editing multi-camera sequences, Creating and

Playing clips Synchronizing audio and video with Merge Clips (CS5.5 and later),

Working with offline clips, Modifying clip properties with Interpret.

2. Working with clips in a sequence:

Creating special clips (synthetics), adding clips to sequences, trimming clips,

Rearranging clips in a sequence, Rendering and previewing sequences, correcting

Mistakes, remove alerts with the Events panel, working with markers.

UNIT-II

3. Titling and the Titler:

Creating and editing titles, creating and formatting text in titles, Drawing shapes in titles, Add images to titles, Working with text and objects in titles, Fills, strokes, and shadows in titles, Titler text styles, Rolling and crawling titles

UNIT-III

4. Effects:

About effects, Applying, removing, finding, and organizing effects, Viewing and adjusting, Effects and key frames, Applying effects to audio, working with audio transitions, Effect presets, Creating common results, Motion: position, scale, and rotate a clip, Eliminate flicker

UNIT-IV

5. Transitions:

Duration and speed, Interlacing and field order, Color correction and adjustment, Transition overview: applying transitions, Modifying and customizing transitions, Effects and transitions reference, Audio effects and transitions reference

Reference Book:

1. Using ADOBE® PREMIERE® PRO CS5 & CS5.5

VP404: 20 PRACTICAL BASED ON VIDEO EDITING USING ADOBE PREMIERE PRO

Vocational Component

VT405: 3D MODELING WITH 3DS MAX

UNIT-I

1. **Modeling Basics:**

   Principles of 3D modeling, concepts like polygons, nurbs, and sub surface modeling etc.Form, scale and proportion of various models, Viewports, Command Panel, Lower Interface Bar Controls, Interacting with the Interface

UNIT-II

2. **Working with Meshes and Poly's & Splines:**

   Creating Compound Objects, Creating Editable Mesh and Poly Objects, Editable mesh Objects, Editing Poly Objects, Using Mesh Editing Modifiers, types of shapes like Circle, Line and Ellipse etc.

UNIT-III

3. **Creating and Editing Models:**

Human anatomy, skeleton structure, joints, facial muscles etc. create various types of

Models (organic, non-organic, simple, complex) characters machines, sets and props,

Game modeling, objects, locations/ background elements such as environment,

Architecture, landscapes, interiors and blend shapes,

UNIT-IV

Details techniques of sculpting, Workflow of UV mapping, Unwrapping

Reference Book:

1. 3Ds Max 6 Bible by Kelly L. Murdock

VP405: 20 PRACTICAL BASED ON 3D MODELING WITH 3DS MAX

Vocational Component

VT406: Camera Operator

UNIT-I

1. Study of Camera System:

Important of safety instructions, Symbols and Conversation, Part of Camera, the

Selector, the command dial, Camera display, shooting: view finder/LCD monitor,

Playback view finder/LCD monitor,

UNIT-II

2. First Steps:

Attaching the Strips, attaching a Lens, inserting the Battery & Memory Card, turning the

Camera on and off, Choosing Display, Adjusting Display Brightness, The DISP/Back

Button

3. Using the menu (Playback mode):

RAW conversion, erase, crop, resize, image rotate, red eyes removal, slide show,

Image search, playback volume, print order (DPOF)

UNIT-III

4. Basic Photography and Playback:

Study the Menu options (photographs), Taking Photographs: Using Flash, Pan, Tilt,

Tracking, Static, Zoom, Close-up, Wide-Shot, Master shot, High/low angle shot, long

Shot, mid shot, viewing pictures, Viewing photo information, multi-frame playback,

Deleting Pictures, macro mode (Close-up)

5. Basic Movie Recording and Playback:

Study the Menu options (Movie Mode), Recording High-Definition (HD) Movies,

Viewing movies, creating the Video Shots by different angles.

UNIT-IV

6. Camera Department:

Film Cameras, Types of Cameras, Film Productions, Director of Photography, Camera

operator, First Assistant Cameraman(1st AC), Second Assistant Cameraman (2nd AC),

Digital Imaging Technician (DIT),

7. **Caring for the Camera:**

Storage and Use, Traveling, Cleaning images sensor.

Reference Book:

1. The Camera Assistant's Manual (FIFTH EDITION) by David E. Elkins, S.O.C.
2. Digital Camera X-E1 FUJIFILM product Bible

VP406: 20 PRACTICAL BASED ON CAMERA OPERATOR

B.Voc.

(Multimedia and Animation)

Third Year

Semester-V & VI

(With Effect from June -2016)

General Component

GT501: INTERNET PROGRAMMING USING PHP

UNIT-I

Introduction to PHP, Configuring Apache, Configuring PHP

UNIT-II

The building Block of PHP.

Decision and loops, functions in PHP types of functions,

UNIT-III

Arrays in PHP, Objects in PHP.

UNIT-IV

Working with String, Date and Time, handling Forms (HTML).

Reference Books:

1.“BEGINNING PHP 5.3” by MATT DOYLE WROX publication

2.“PHP, MySQL and Apache All in One” by Juliea C. Meloni, SAMS series

GP501: 10 PRACTICAL ASSIGNMENTS BASED ON INTERNET PROGRAMMING USING PHP

General Component

GT502: ADVANCE PROGRAMMING IN ‘C’

UNIT-I

1) Arrays:

• Introduction, Declaration and initialization Accessing array elements, Memory representation of array.

• One dimension and multidimensional arrays, character array, Introduction to string.

2) **Functions**

• Introduction, types of functions. Defining functions, Arguments, Function prototype, actual parameters and formal parameters, Calling function, Returning function results, Call by value, Recursion.

UNIT – II

3) **Structure & Union**

• Structure: Introduction, Declaration and initializing structure, Accessing structure members, Nested structures, Arrays of structure, *typedef* statement.

• Unions: Declaration, Difference between structure and union

4) **Pointers:**

• Introduction, Memory organization. Declaration and initialization of pointers. The pointer operator * and &, De-referencing, Pointer expression and pointer arithmetic, Pointer to pointer.

UNIT – III

5) **Storage Class & Library Functions:**

• Storage classes, Scope, visibility and lifetime of variable, block and file scope, auto, extern, static and register storage classes.

• **String handling functions**: strcpy(), strcmp(), strcat(), strlen(), strupr(), strlwr(), gets(), puts()

UNIT – IV

• **Data conversion functions from stdlib.h**: atoi(), atol(), atof(), itoa(), ltoa(), random(), calloc(),malloc(),exit(), abs(), toupper(), tolower()

6) **Miscellaneous Features:**

• Bitwise Operators: Introduction, Masking, Internal representation of data, Bit fields, Enumerated data types, Type casting.

Text Books:

1. Let us C Solutions : Y.P. Kanetkar [bpb publication]
2. Programming in C : E. Balagurusamy. [Tata macgraw hill]
3. Programming in C : Goterfried [Shaums Series]

References Books:

1. Spirit of "C" : Moolish Kooper.
2. Test your Skills in C : Y.Kanetkar

GP502: 10 ASSIGNMENTS BASED ON ADVANCE 'C'

General Component

GT503: BUSINESS DATA PROCESSING AND DATA BASE MANAGEMENT SYSTEM

UNIT-I

Introduction to Data Processing : Records and files : Data collection, preparation, verification, editing and checking. Business Files : Master and transaction files, file generations, backups and file recovery procedures.

UNIT-II

DBMS and its advantages; Data independence, data models; network model. DBTG

proposal; data definition and manipulation languages, hierarchical and relational models,

storage organisation for relations, relational algebra and calculus, relational query, languages

query, processor and optimizer.

UNIT-III

Design of a Database : Normalization theory for design of relational databases. Functional

dependencies, normal forms, multivalued dependencies, decomposition, integrity.

UNIT – IV

Introduction to SQL (Mysql/Oracle): Queries under DDL, DML, DCL & TCL.

Reference Books:

1. Database System concepts : Korth, Siberschatz , Fifth Edition
2. An Introduction to Database System : B.Desai, Revised Edition

GP503: 10 PRACTICAL ASSIGNMENTS BASED ON BUSINESS DATA PROCESSING AND DATA BASE MANAGEMENT

Vocational Component

VT504: VISUAL EFFECTS WITH ROTO

UNIT-I

1. **Working Foundations:**

   Composite in After Effects, The Timeline, Selections: The Key to Compositing, Color Correction, Color Keying, Rot scoping and Paint, Effective Motion Tracking, Color and Light

UNIT-II

2. **Climate and the Environment:**

   Visual Effects Description Types, Particles, Analysis, Size, Sand Effects, Smoke Effects, Fire Effects, Cloud Effects, Snow Effects. Fluid Effects, Coloring, Color grading, designing Clouds Background, Designing Fog Effects. Explosion Effects, Fire Effects with flames, Space Effects and designs, Designing Thick Smoke.

UNIT-III

3. **Designing:**

   Designing Paint Effects, Coloring paints, Designing Trees and green effects, Gather raw footage, materials, Effects on seasons, Designing Glass image, Designing Different glass reflection, Designing Glow Effects, Liquid Effects and Reflection design

4. **Special Effects:**

   Designing Special Effects, Designing effects of Hair and shape, Designing Fur Effects, Designing Clothes and effects.

UNIT-IV

5. **Visual Effects Tool:**

   Introduction and advanced functions, Converting images from 2D to 3D Pictures. Creating 3D Effects, Differentiation 2D effects and 3D effects.

Reference Books:

1. Adobe After effects 5 for windows After by Antony Bolante : Indian edition 2002 Published by G.C. Jain for Techmedia
2. Adobe After effects CS6 Visual Effects and Compositing Studio Techniques by Mark Christiansen
3. ADOBE® AFTER EFFECTS® Help and tutorials by Adobe System

V P504: 20 PRACTICAL ASSIGNMENTS BASED ON ADOBE AFTER EFFECTS.

Vocational Component

VT505: CONCEPT OF MATERIAL, MAPS, CAMERA & LIGHT

UNIT-I

1. **Texturing :**

Exploring the Texture Editor: Understanding Material Properties, Bones, wrinkles, bricks, ground, rust, wood, tiles, plastic, paper, metal, food, water, fire, skin, hair and eyes, cloth, walls and ceiling, imaginary

UNIT-II

Creating Advanced Multi-Layer Materials: Using Raytrace Materials, Using the Matte/Shadow Material, Create textures for human, animal, character, location, which may include organic and inorganic surfaces

Maps:

Adding Material Details with Maps: Understanding Maps, Understanding Material Map Types, , Reflection and refraction maps, Using the Map Path Utility, Using Map Instances

Controlling Mapping Coordinates: Mapping Modifiers, Using the Unwrap UVW modifier, Relaxing vertices.

UNIT-III

2. Cameras:

Working with Cameras: Understanding the overall style and creative aspect ratio

Creating a Camera Object, Creating a Camera View, Controlling a camera, Aiming a camera, Aligning cameras, Setting Camera Parameters, Camera Correction Modifier

Close –up, wide-shot, long shot and mid shot, high/low, aspect ratio.

3. Lighting:

Basic Lighting Techniques: Principles of lighting Understanding the Basics of Lighting, Getting to Know the Light Types, principles of lighting, shadows, exposure, natural light, colour space, reflections, Spotlight and directional light parameters, Shadow Color, Working with Photometric Lights, Using the Sunlight and Daylight Systems, Using Volume Lights

UNIT-IV

4. Advanced Lighting and Light Tracing:

Selecting Advanced Lighting, Using Local Advanced Lighting Settings, Working with the Advanced Lighting Override Material, Hard and Soft Shadow.

Reference Book:

1. 3Ds Max 6 Bible by Kelly L. Murdock
2. Digital Lighting and Rendering, Third Edition by Jeremy Birn

VP505: 20 PRACTICAL ASSIGNMENTS BASED ON CONCEPT OF MATERIAL, MAPS, CAMERA & LIGHT USING 3Ds MAX

Vocational Component

VT506: Mudbox

UNIT-I

1. **Introduction to Sculpting Concepts:**

   Workspace .Polygon Basics, Sculpting Tools, Manage the Sculpt Layers, Properties Window, Axes Labeled In the Rotate Manipulator

UNIT-II

2. **Introduction to Mudbox:**

   Interface Overview, Understanding 3D Space, Sculpting and Painting Tools. The

   Main Selection Tools Are Faces and Objects, and the Translate, Rotate, and Scale

   Tools Comprise the Select/Move Tools

UNIT-III

1. **Anatomy for Sculptors:**

   Skeleton, Muscles, Skin and Fat, Expression and Emotion in Sculpture, Paint Layers Organize the Different Types of Textures, Such as Diffuse, Bump, and Specular

UNIT-IV

1. **Digital Sculpting with Mudbox:**

   Resolution, UV Mapping, Digital Images, Mud box Hotkeys, Selecting and Scaling a Model, Sculpting Details, Adding Texture with a Stencil

2. Sculpting Muscle Masses, Smooth Tool to Blend, The Forearm, Sculpting the Head and Face Head and Face, Sculpting the Head and Face, Paint Layers, Adding Details, Adding Tattoos

VP506: 20 PRACTICAL ASSIGNMENTS BASED ON MUDBOX

Reference Book:

2. 3Ds Max 6 Bible by Kelly L. Murdock
2. Digital Sculpting with Mudbox by Mike de la Flor Bridgette Mongeon

B.Voc.

(Multimedia and Animation)

Third Year

Semester-VI

(With Effect from June -2016)

General Component

GT601: ADVANCE PHP

UNIT-I

Introduction to PHP:

Cookies and user sessions in PHP, File and directories in PHP

UNIT-II

Introducing Database and SQL, Retrieving data,Manipulating data from SQL

UNIT-III

PEAR, working and generating Images, Working with XML

UNIT-IV

Introduction to AJAX and Integrating AJAX with PHP

Reference Books:

1. “BEGINNING PHP 5.3” by MATT DOYLE WROX publication
2. “PHP, MySQL and Apache All in One” by Juliea C. Meloni, SAMS series
3. “AJAX Black Book” by KOGENT SOLUTIONS INC.

GP601: 10 PRACTICAL ASSIGNMENTS BASED ON ADVANCE PHP

General Component

GT602: Network and Network Security

UNIT-I

Introduction: Communication System, Components of communication system, Computer network Advantages and applications of computer n/w. Point-to-point and multipoint line configuration, LAN, MAN and WAN. Analog and Digital signals,

UNIT-II

Data Transmission: Parallel and Serial, Synchronous and Asynchronous transmission, Transmission Mode: Simplex, half-duplex and full-duplex. **Network Topologies:** Mesh, Star, Tree, Bus and Ring and Hybrid Topology (Advantages and disadvantages of each).

UNIT-III

Security Perspective: Basics of Computer Systems from the Security Perspective, Security Features in an Operating System- Windows/Linux, Networks and Security Challenges.

Internet Security Issues: Technology of Internet and Internet Protocols Internet Security

Risks Access Control Risks Protocol Related Risks.

UNIT-IV

Digital Signatures for Securing Information Assets: Cryptography Digital Signatures Security Protocols, SSL, SET and HTTPS. **Protecting Information Assets:** Firewalls Intrusion Detection Systems Ethical Hacking Cyber Forensic Tools.

Reference Books:

1. Computer Networks by A.S Tannenbaum.
2. Data Communication and Networking : Behrouz A. Forouzan; Mc-Graw Hill Pub.
3. William Stallings ,Network Security Essentials: Applications and Standards, 3rd edition,
2006, Prentice Hall
4. William Stallings Cryptography and Network Security: Principles and Practice, 3/E, Prentice
Hall

GP602: 10 PRACTICAL ASSIGNMENTS BASED ON NETWORK AND NETWORK SECURITY

General Component

GT603: PROGRAMMING USING C++

UNIT – I

1) **Introduction of OOPs**

Procedural Vs Object Oriented Programming, Basic concepts of Object Oriented Programming, Class, Object, Data Abstraction, Encapsulation, Inheritance, Polymorphism, Dynamic Binding, Message Passing. Benefits and applications of OOP, History and overview of C++, C++ program structure. Reference variables, Scope resolution operator, Member dereferencing operators, new and delete, cin and cout, The endl and setw manipulator.

2) **Functions in C++:**

Function prototype, Call by reference (using reference variable), Return by reference, Inline function, Default arguments, Const arguments.

UNIT – II

3) **Function overloading:**

Different numbers and different kinds of arguments,

4) **Objects and Classes:**

Specifying a class, private and public, Defining member functions, Nesting of member function, Object as data types, Memory allocation for objects, static data members and member functions. Array of objects, Objects as function argument, returning objects, Friend function and its characteristics.

UNIT – III

5) Constructors and Destructors:

Introduction, default and parameterized constructors, Multiple constructors in a class, Copy Constructor, Destructors

UNIT - IV

6) Operator Overloading:

Overloading unary operators, Rules for operator overloading, Overloading without friend function and using friend function, Overloading binary operators such as arithmetic and relational operators, Concatenating Strings, Comparison operators.

Reference Books:

1. Object Oriented Programming with C++ E. Balagurusamy, Tata McGraw-Hill Publishing
2. Object Oriented Programming In C + + Robert Lafore, Galgotia
3. Let us C++ YeshwantKanetkar; bpb publication

GP603: 10 PRACTICAL ASSIGNMENTS BASED ON C++.

Vocational Component

VT604: SCRIPT WRITING & STORY BOARDING

UNIT-I

1. Scriptwriting:

Storytelling, Audiovisual Writing- The format for writing the Synopsis, Step-outline, Screenplay and Script for a film, The Elements of Scriptwriting- Action, Character, Setting, Theme, Structure, Characterization- A character sketch of one of the major characters of a film & an analysis of how the character has been established in the film, Structuring- Scene-by-scene analysis of a film the student likes

UNIT-II

2. The process:

Storyboard stages from concept sketches and previs (previsualization), to thumbnails, to

Storyboards, to animatic, and beyond, Effective boarding strategies

UNIT-III

3. Tools of the trade:

Tools and methods for storyboard creation

4. Blocking and composition:

Controlling the eye, Coherence between shots, making sure boards “read”, “Acting” and

visual Character development: bringing the script to life

UNIT-IV

5. Conveying the mood:

Scene tone - comedic, dramatic, action--based, et cetera, visual idioms and tropes

Storyboarding and the rest of your team: Scripts and screenplays, character design, props and backgrounds, layout, animation, audio design

Storyboarding for your bosses: “the network,” producers, directors, art director, Etc.

Reference Books:

1. Storyboard Design Course: Principles, Practice, and Techniques by Giuseppe Cristiano
2. From Word To Image, Storyboarding and the Filmmaking Process. 2nd Ed. by Begleiter, Marcie. Studio City, CA: Michael Wiese Productions, 2010. Print
3. Directing the Story, Professional Storytelling and Storyboarding Techniques for Live by Glebas, Francis
4. Action and Animation. Burlington, MA: Focal Press, 2009. Print.
5. Storyboards, Motion in Art. By Simon, Mark. 3rd Ed. Burlington, MA: Focal Press, 2007. Print.
6. Exploring Storyboarding. By Tumminello, Wendy. Clifton Park, NY: Delmar Cengage Learning, 2008. Print

Reference Web Sites:

1. http://www.animationmeat.com/pdf/televisionanimation/strybrd_the_simpsonsway.pdf
2. http://myhero.com/myhero/go/theteachersroom/pdf/AFI_BasicsHandbook.pdf
3. http://www.animationmeat.com/pdf/televisionanimation/brad_bird_on_comps.pdf

Vocational Component

VT605: RIGGING TECHNIQUES WITH 3DS MAX

UNIT-I

1. **Character Modeling:** Understanding Your Character, Building Bodies, Positioning pivots, Modeling techniques

UNIT-II

2. **Rigging Characters:** Building a Bones System, Using the Bone Tools, Making objects into bones, Using the Skin Modifier, Working with weights, Mirror settings,

Display and Advanced settings, Using deformers, Rigs are smooth, intuitive and

responsive and meet production requirements, Rigged assets deform correctly from

all required camera positions and angles, solutions for complex rigging problems

when required.

UNIT-III

2. Animating Characters:

Motion Capture and key frame animation Creating Characters, Saving and loading characters, Destroying characters, Working with Characters, Saving and inserting character animations, Using Character Animation Techniques

UNIT-IV

3. Using Inverse Kinematics:

Rigging principles, processes, systems and techniques like Forward versus Inverse Kinematics, Creating an Inverse Kinematics System, Using the Various Inverse Kinematics Methods, Applied IK, History Independent (HI) IK solver, History Dependent (HD) IK solver, IK Limb solver, Spline IK solver

Reference Books:

1. 3Ds Max 6 Bible by Kelly L. Murdock
2. Rigging Characters for Animation by Erick Miller

VP605: 20 PRACTICAL ASSIGNMENTS BASED ON RIGGING TECHNIQUES WITH 3DS MAX

Vocational Component

VT606: RENDERING ARTIST

UNIT-I

Rendering Basics: Understanding the Max Renderers, Render Parameters, Rendering Preferences, Creating VUE Files, Using the Rendered Frame Window, , Reviewing the Render Types, Using Command-Line Rendering, Creating Panoramic Images, Getting Printer Help, Creating an Environment, Setting exposure,

1. **Technical specifications**

   Supervise others in ensuring, that final work-products are prepared in appropriate file formats (such as mp4, avi, wmv, mpg and mov, PNG), appropriate mediums (such as DVD, film, tape and digital), and are compatible with intended distribution/exhibition mediums

UNIT-II

2. **Using Atmospheric Effects:**

   Creating Atmospheric Effects, Using the Fire Effect, Using the Fog Effect **Using Render Elements and Effects:** Using Render Elements, Adding Render Effects, Creating Lens Effects, Using Other Render Effects,

UNIT-III

3. **Ray tracing and mental ray:**

   Understanding Global Ray tracing Settings, Using Ray trace Materials, Using a Ray trace Map, Enabling mental ray, Understanding Shades, Controlling Indirect Illumination.

UNIT-IV

4. **Compositing and Post-Production:**

   Using External Compositing Tools: Compositing with Photoshop, Video Editing with Premiere, Video Compositing with After Effects, Introducing Combustion

Reference Books:

1. 3Ds Max 6 Bible by Kelly L. Murdock
2. 3Ds Max 4 Bible by Kelly L. Murdock
2. Digital Lighting and Rendering, Third Edition by Jeremy Birn

VP604: SEMINAR

1. Review1:

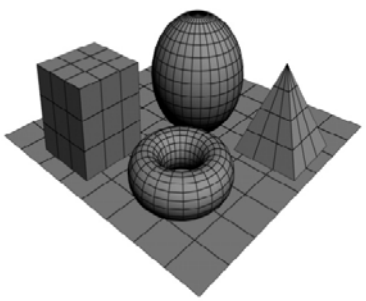
2. Review2:

VP605: MAJOR PROJECT USING 3DS MAX

1. Review1 : Concept and Storyboards:

The very first step involved in a 3D production pipeline is the conceptualization of ideas and the creation of the storyboards that translate these ideas into visual form.
A storyboard is a sequence of illustrations that showcases your digital story in two dimensions. The first dimension is time: what happens first, next, and last. The second is of interaction: how does the voiceover (your story) interact with the images, how do visual transitions and effects help tie together the images, how does the voice over interact with the musical soundtrack? Any element can interact with any other one, and the storyboard is the place to plan out the impact you intend to make on the audience.

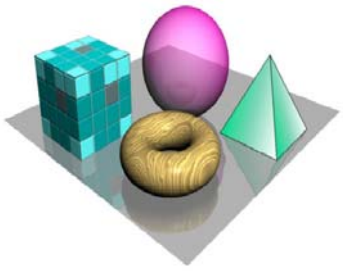
2. Review2 : 3D Modeling:



3D Modeling is not drawing!
After the storyboards are finished and approved by the client, the task of building the props, environment and characters begin. The proper

term is called 'modeling'. Modeling is the process of taking a shape and molding it into a completed 3D mesh. The most typical means of creating a 3D model is to take a simple object, called a primitive, and extend or "grow" it into a shape that can be refined and detailed. Primitives can be anything from a single point (called a vertex), a two-dimensional line (an edge), a curve (a spline), to three dimensional objects (faces or polygons). Using the specific features of your chosen 3D software, each one of these primitives can be manipulated to produce an object. When you create a model in 3D, you'll usually learn one method to create your model, and go back to it time and again when you need to create new models. There are three basic methods you can use to create a 3D model, and 3D artists should understand how to create a model using each technique.

3. Review3 : Texturing (Materials):



The art of giving clothes to the 3D models.

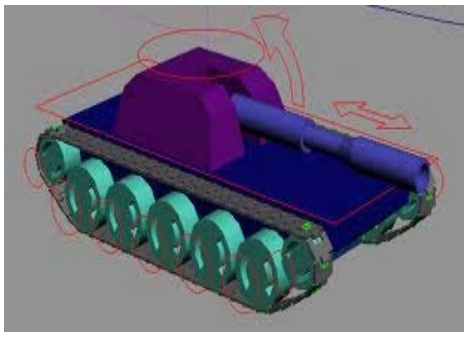
When a 3D model is created, 2D images can be overlaid on it to add colors, designs, and textures. This is called mapping, and often the entirety of a model's color comes from this. These maps can be created in programs like Photoshop, and the illusions of textures can be brushed onto the models as easily as if you painted them yourself; some animators even use real photographs of the textures they're trying to create, simply captured and then altered to make seamless repeatable patterns. This is how many illusions of hair are created; rather than model individual strands, instead grouped locks of hair are modeled, before a texture is overlaid with individual strands and detailing painted on.

4. Review4 : Rigging and Skinning:

We've gotta put in those skeletons into a 3D character before he can move! Setting up a character to walk and talk is the

last stage before the process of character animation can begin. This stage is called 'rigging and skinning' and is the underlying system that drives the movement of a character to bring it to life. Rigging is the process to setting up a controllable skeleton for the character that is intended for animation. Depending on the subject matter, every rig is unique and so is the corresponding set of controls. Skinning is the process of attaching the 3D model (skin) to the rigged skeleton so that the 3D model can be manipulated by the controls of the rig.

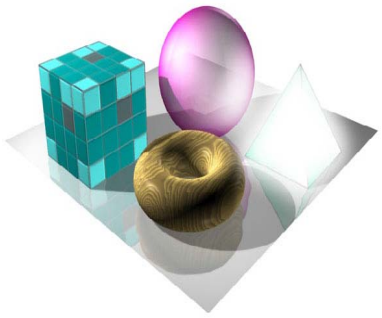
5. Review5 : Animation:



Now you know animation doesn't always come first in 3D animation huh?

Animation is the process of taking a 3D object and getting it to move. Animation comes in a few different flavors. There's keyframe animation, where the animator manipulates the objects on a frame-by-frame basis, similar to old hand-drawn cartoons. Other methods of animation include placing objects on splines and setting them to follow the path of the curve, or importing motion capture data and applying it to a character rig. Yet another way to animate is to use your 3D application's built-in physics engines, such as when your scene requires that objects fall.

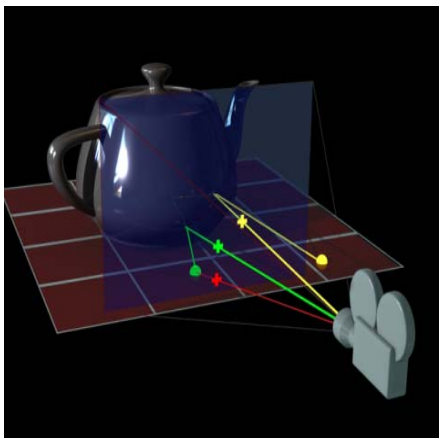
6. Review6 : Lighting:



Lighting in a 3D world is just as essential as it is in real life. Lighting, (in combination with textures, camera angle etc.) is where a scene has the potential to come alive. Used improperly, light can wash out a scene, make objects appear hard or flat, and

destroy all the hard work. But skillfully applied, lighting can makea scene convincing, or if realism is the aim, create (in combination with materials and geometry), a scene that is virtually indistinguishable from real life. In 3D, lights don't actually exist as they do in the real world. Lights in 3D are objects that are designed to simulate how lighting works in real life, but in order to obtain the results you're after, you have to apply a number of settings, not only to the lights, but to the materials.

7. Review7 : Camera Angles and Techniques:



Good camera angles and techniques make the difference between good cinematograhy and bad ones.The camera is an amazing tool. In 3D, unlike the real world, physical limitations don't exist. You can create a scene where the camera takes you on a journey inside the blood vessels of a human body, or to be an eye-in-the-sky in your scenes, it can be used to create impossible perspectives, to zoom and pan and so much more. It's beyond the scope of this article to tell you everything about cameras, but here are some basics to get you started.First, it's useful to look at some of the differences between 3D cameras and real life cameras. In 3D, unlike in real life, there is no need for a lens, focusing controls, film, aperture, etc. All of these functions are controlled via software. Where things are similar is how the camera is used. In 3D, you can create one or more cameras, position them exactly as desired in 3D space and use settings to mimic focal length, depth of field, etc. Other options for moving a 3D camera are similar to those in movie making, including truck, dolly, motion blur, orbit and pan. In addition, software cameras have no size or weight restrictions. You can move a camera to any location and even inside the tiniest objects. You can also animate cameras so that several operations take place at once, such as a zooming into a scene while changing the depth of field. Once

you create a camera in 3D, you can pick a view and assign the view in that view to the camera, meaning that you will see the scene from the perspective of the camera.

8. Review8 : Rendering, Compositing and Special FX:

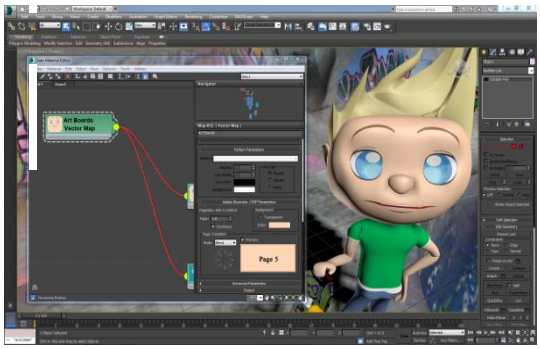
This is where the graphics get 'made' and exported…but it's not the end yet!!! Rendering an image is typically the last step in the 3D production pipeline (but not the last step in the overall production pipeline), and is perhaps the most important part. It is a step often overlooked or glossed over by beginners, who are more focused on creating models and animating them. There are many aspects to creating a good final render of a scene, including attention to camera placement, lighting choices which may affect mood and shadows, reflections and transparency, and the handling of special effects, like fluids or gasses. This is where the final renders are brought into compositing programs to edit, touch-up and add on special effects.

9. Review9 : Music and Foley:

Music and foley (sound effects) are added to give the animation the extra depth and boost in audio enjoyment.A music composer will create music soundtracks and accompaniment music to set the mood for the animation.

A foley artist 'recreates' sound effects for film, television and radio productions. Using many different kinds of shoes and lots of props – car fenders, plates, glasses, chairs, and just about anything I find at the side of the road – the Foley Artist can replace original sound completely or augment existing sounds to create a richer track.

10. Review10 : Editing and Final Output:



This is where it ends!

This is where it all ends! This is where the composited renders, music and foley are compiled and edited to ensure that everything is in synchronization. Once satisfied, the compiled product is exported as one of the many formats suitable for broadcasting standards and delivered to the client!

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