

**SACRED HEART COLLEGE (AUTONOMOUS)**  
**THEVARA, KOCHI – 682013**  
**KERALA**



**CURRICULUM AND SYLLABUS**  
**FOR**  
**BA ANIMATION & VISUAL EFFECTS**  
**Model III**  
**CHOICE BASED COURSE CREDIT AND SEMESTER SYSTEM**  
**(CBCSS)**

**Prepared by**  
**Board of Studies in Communication Department**  
**Sacred Heart College (Autonomous)**  
**Thevara, Kochi**

**2023**

## PREFACE

Sacred Heart School of Communication (SHSC) was established as the Media and Communication wing of Sacred Heart College, Kochi in 2012 with a vision to make use of the reach of media in society and utilize their powers for common good. We give emphasis to developing a balanced sensibility and creative initiative among the Under Graduate and Post Graduate level students.

Sacred Heart College, Thevara, Kochi became an autonomous college under Mahatma University Kottayam in 2014. The college revised the choice-based credit and semester system (CBCSS) for under graduate programmes from the 2015-16 academic year and credit and semester system (CSS) for postgraduate programmes from the 2016-17 academic year onwards.

SHSC introduces all persons and communities from different walks of life to the privileges communication can offer through in depth study, analysis, practice and constructive public discourse. Film, Television, Electronic and Print journalism, New Media and Social Media related short and long term courses are offered in this school. Production wing for radio, digital filmmaking, graphic design, animation and special effects is in the pipeline. This centre shall be running courses in Interpersonal, Organizational, Marketing and Corporate communication.

The school shall constitute a Media Research Centre for studies on various communication vehicles and market-oriented communication analysis. Special programmes are to be organized for different levels of students, professionals and common people on Education about Media, Media Studies and Media Education. In SH School of Communication, self-learning is promoted through workshops, screening of films, daily consultations, discussions and brainstorming sessions for idea generation. Industry relationships are promoted for professional competence on a long term basis.

The B.A Programme in Animation and Visual Effects is branded for its productive approach and distinctive topics discussed, and encouragement on innovation while stressing on strong technical and presentation skills. The curriculum inspired by the phenomenal world of art and new creative techniques, comprises of pedagogies that blend theoretical and practical components and gives opportunities for the students to develop skills in animations, visual effects compositing, video editing and cinematography along with Interactive Applications.

A meeting of the Board of Studies of Communication recommended a revision of the existing UG Animation and Visual Effects syllabus in comparison with the parent University (MG University) syllabus with appropriate modifications and also taking into consideration the inclusion of Environmental Studies and Human Rights that was introduced in the revised University curriculum. We are grateful to all of those with whom we have had the pleasure to work during the restructuring of the syllabus and curriculum of B.A Animation and Visual Effects (CBCSS) Programme 2023 of Sacred Heart College (Autonomous), Thevara, Kochi.

The Academic Council of the College decided to implement the revised syllabus of (BA Animation and Visual Effects– Core and Complementary Courses) with effect from academic year 2023-24.

There are many personalities whose support and guidance made this restructured syllabus a reality. We express our profound gratitude to the Honourable Principal, Governing council and the Academic Council for their leadership and guidance for making this endeavour a great success.

We thank the members of BOS Core-Committee and all the staff members of the SH School of Communication for offering their service for the flawless completion of the syllabus.

The successful completion of this syllabus is the end product of hardwork done by academicians from the college and eminent personalities from the media industry. We would like to thank them all for their valuable service during the restructuring process.

**Contents**

<b>Sl. No.</b>		<b>Page No.</b>
1.	Introduction	5
2.	Regulations	7
3.	Programme Structure	17
4.	Syllabus	19

## 1. INTRODUCTION

The Programme begins with the theory in art and design, animation and visual effects, then progresses to animation and visual effects practices and technology. Students learn to create animations both in 2D and 3D from scratch, learn about photographic composition, videography, scriptwriting, storyboarding and more. The program encourages innovation and research while stressing strong technical and presentation skills. Students gain a background in Animation/Visual Effects history and theory and then experiment and develop their own creative approaches. The candidates become eligible for a Degree after six-semesters of study, spanning over a period of 3 years and successful completion of the examinations.

The BA Animation and Visual Effects Programme prepares graduates for a wide range of careers in the industry such as 3D or 2D animator, Layout artist, Scriptwriter, Storyboard artist, Rigger, Character modeler, Texturing artist, Rotoartist, Video editor, Lighting and rendering artist, Motion graphics artist, Compositor, Match move technician, Flash animator, Digital painting, Cartoonist, Illustrator, Concept artist, Photography, Videography, Visual effects supervisor, 3D architectural visualizer Etc. The skills taught in the Programme encompass craft at a technical level; yet also include design, drawing, critical thinking, creativity, daring, collaboration, and a fundamental awareness of theory and history. Throughout the Programme, students are engaged in all aspects of Animation and Visual Effects from concept development and production design to the completion of finished segments.

This syllabus and curriculum are designed to transmit the most essential and updated information to students. Field trips, interactions with leading professionals, internships and engagement in social issues are employed in administering the curriculum and syllabus. Industry relationships are promoted for professional competence on a long term basis.

### 1.1 SCOPE

Applicable to the Undergraduate Programme BA Animation & Visual Effects (Regular) conducted by Sacred Heart College Autonomous Kochi, with effect from 2023 admissions.

### 1.2 PROGRAMME OUTCOMES (POs)

**PO 1: Critical Thinking:** Take informed actions after identifying the assumptions that frame our thinking and actions, checking out the degree to which these assumptions are accurate and valid, and looking at our ideas and decisions (intellectual, organizational, and personal) from different perspectives.

**PO 2: Effective Communication:** Speak, read, write and listen clearly in person and through electronic media in English and in one Indian language, and make meaning of the word by connecting people, ideas, books, media and technology.

**PO 3: Effective Citizenship:** Demonstrate empathetic social concern and equity centred national development, and the ability to act an informed awareness of issues and participate in civic life through volunteering.

**PO 4: Environment and Sustainability:** Understand the issues of environmental contexts and sustainable development.

**PO5: Ethics:** Recognize different value systems including your own, understand the moral dimensions of your decisions, and accept responsibility for them.

**PO 6: Global Perspective:** Understand the economic, social and ecological connections that link the world's nations and people.

### 1.3 PROGRAM SPECIFIC OUTCOMES (PSOs)

At the end of the course, students will be able to:

**PSO 1:** Understand the fundamentals and history of Animation, Visual Effects and Film techniques.

**PSO 2:** Understand the processes involved in Pre-Production, Production and Post Production in animation and VFX.

**PSO 3:** Develop software skills required to demonstrate competence and be equipped with technical skills in various domains of Animation and VFX.

**PSO 4:** Capable of adapting to new ideas and technology and upgrade their skills constantly with an attitude towards independent and lifelong learning.

**PSO 5:** Achieve successful career and/or demonstrate entrepreneurial skills: Explore technical knowledge in diverse areas of Animation, Visual Effects and Film techniques and experience an environment conducive in cultivating skills for successful career, entrepreneurship and higher studies.

### 1.4 ELIGIBILITY FOR ADMISSION TO THE PROGRAMME

- i. A pass in Plus Two or an equivalent examination or an examination recognised by MG University as equivalent thereto
- ii. Candidates must appear for an Aptitude test (a combination of a written test and an interview. The test will be to assess the aptitude of the student towards the programme and will also include general topics related to Media and English.
- iii. The merit list will be drawn based on the marks secured during the qualifying examination and marks of Aptitude test. The marks of Qualifying examination and the Aptitude test will have equal weightage (i.e. 50:50).

### 1.5 MEDIUM OF INSTRUCTION AND ASSESSMENT

The medium of instruction shall be English.

## 2. REGULATIONS FOR CHOICE BASED CREDIT AND SEMESTER SYSTEM (CBCSS) FOR UNDER GRADUATE PROGRAMMES -2023

### Preamble

Sacred Heart College, Thevara became an autonomous college under Mahatma University Kottayam in 2014. Since then, academic programmes of the college are being conducted as per the curriculum and syllabus approved by the various Boards of studies and the academic council of the college. The college revised the syllabi of the under graduate(UG) programmes in 2015-16 and 2019-20. The curriculum and syllabus under the choice based credit and semester system (CBCSS) for the under graduate programmes effective from 2019-20 admissions offer Outcome Based Education (OBE). The new 'REGULATIONS FOR CHOICE BASED CREDIT AND SEMESTER SYSTEM (CBCSS) FOR UNDER GRADUATE PROGRAMMES -2023' is a continuation of the effort of the college for providing best education to the UG students of the college.

### 2.1 Title

These regulations shall be called "**SACRED HEART COLLEGE THEVARA REGULATIONS FOR CHOICE BASED CREDIT AND SEMESTER SYSTEM (CBCSS) FOR UNDER GRADUATE PROGRAMMES -2023**".

### 2.2 Scope

Applicable to all under graduate (UG) programmes of the college with effect from 2023 admissions onwards, except otherwise approved by the Academic Council of the College

### 2.3. Definitions

- i. '**Programme**' means the entire course of study and examinations.
- ii. '**Duration of Programme**' means the period of time required for the conduct of the programme. The duration of under graduate programmes shall be 6 semesters, post-graduate programme shall be of 4 semesters and M Phil programmes shall be 2 semesters.
- iii. '**Semester**' means a term consisting of a minimum of 90 working days, inclusive of examination, distributed over a minimum of 18 weeks of 5 working days, each with 5 contact hours of one hour duration
- iv. '**Course**' means a segment of subject matter to be covered in a semester. Each Course is to be designed variously under lectures / tutorials / laboratory or fieldwork / study tour /seminar / project / practical training / assignments/evaluation etc., to meet effective teaching and learning needs.
- v. '**Common Course I**' means a course that comes under the category of courses for English and '**Common Course II**' means additional language, a selection of both is compulsory for all students undergoing undergraduate programmes(Model I)
- vi. '**Core course**' means a course in the subject of specialization within a degree programme.
- vii. '**Complementary Course**' means a course which would enrich the study of core courses.

- viii. **‘Open course’** means a course outside the field of his/her specialization, which can be opted by a student.
- ix. **‘Additional core course’** means a compulsory course for all under graduate students (as per the UGC directive) to enrich their general awareness.
- x. The U.G. programmes shall include (a) Common courses (b) Core courses (c) Complementary Courses (d) Open Course (e) Study tour and (f) Internship for selected programmes.
- xi. **‘Additional Course’** is a course registered by a student over and above the minimum required courses.
- xii. **‘Credit’ (Cr)** of a course is the numerical value assigned to a course according to the relative importance of the content of the syllabus of the programme.
- xiii. **‘Extra credits’** are additional credits awarded to a student over and above the minimum credits required for a programme for achievements in co-curricular activities carried out outside the regular class hours OR curricular activities/courses completed for value addition, as directed by the College/ department. It is the numerical value assigned to Club activities, Social service, Internship, add on courses etc. which is not added with the total academic credits of the students. Additional credit components
  - (a) Talent & career club activity (optional)
  - (b) Social service (mandatory)
  - (c) Internship for Commerce, Communication and Computer applications (mandatory).
  - (d) Internship (desirable for other programmes).
  - (e) Add on courses (optional)
- xiv. **‘Programme Credit’** means the total credits of the UG Programme.
- xv. **‘Programme Elective course’** Programme Elective course means a course, which can be chosen from a list of electives and a minimum number of courses is required to complete the programme.
- xvi. **‘Programme Project’** Programme Project means a regular project work with stated credits on which the student undergoes a project under the supervision of a teacher in the parent department / any appropriate Institute in order to submit a dissertation on the project work as specified.
- xvii. **‘Internship’** is on-the-job training for professional careers.
- xviii. **‘Plagiarism’** Plagiarism is the unreferenced use of other authors’ material in dissertations and is a serious academic offence.
- xix. **‘Tutorial’** Tutorial means a class to provide an opportunity to interact with students at their individual level to identify the strength and weakness of individual students.
- xx. **‘Seminar’** seminar means a lecture by a student expected to train the student in self-study, collection of relevant matter from the books and Internet resources, editing, document writing, typing and presentation.



- xxi. **‘Evaluation’** means every course shall be evaluated by 25% continuous (internal) assessment and 75% end course/end semester (external) assessment.
- xxii. **‘Repeat course’** is a course that is repeated by a student for having failed in that course in an earlier registration.
- xxiii. **‘Audit Course’** is a course for which no credits are awarded.
- xxiv. **‘Department’** means any teaching Department offering a course of study approved by the college / Institute as per the Act or Statute of the University.
- xxv. **‘Parent Department’** means the Department which offers a particular UG/PG programme.
- xxvi. **‘Department Council’** means the body of all teachers of a Department in a College.
- xxvii. **‘Faculty Advisor’** is a teacher nominated by a Department Council to coordinate the continuous evaluation and other academic activities undertaken in the Department.
- xxviii. **‘College Co-ordinator’** means a teacher from the college nominated by the College Council to look into the matters relating to CBCSS
- xxix. **‘Letter Grade’** or simply **‘Grade’** in a course is a letter symbol (O, A, B, C, D, etc.) which indicates the broad level of performance of a student in a course.
- xxx. Each letter grade is assigned a **‘Grade point’** (GP) which is an integer indicating the numerical equivalent of the broad level of performance of a student in a course.
- xxxi. **‘Credit point’** (CP) of a course is the value obtained by multiplying the grade point (GP) by the Credit (Cr) of the course  $CP = GP \times Cr$ .
- xxxii. **‘Semester Grade point average’** (SGPA) is the value obtained by dividing the sum of credit points (CP) obtained by a student in the various courses taken in a semester by the total number of credits taken by him/her in that semester. The grade points shall be rounded off to two decimal places. SGPA determines the overall performance of a student at the end of a semester.
- xxxiii. **‘Cumulative Grade point average’** (CGPA) is the value obtained by dividing the sum of credit points in all the courses taken by the student for the entire programme by the total number of credits and shall be rounded off to two decimal places.
- xxxiv. **‘Grace Marks’** means marks awarded to course/s, as per the orders issued by the college from time to time, in recognition of meritorious achievements in NCC/NSS/Sports/Arts and cultural activities.

## 2.4 ATTENDANCE

Being a regular college, physical presence in the regular activities, especially, classes and exams, is mandatory for the students. However, if a student secures 75% of attendance s/he is eligible to appear for the exams, provided there are no other impediments like disciplinary proceedings, malpractice record etc.

- i. A maximum of 5 marks (5%) for a course is given for attendance
- ii. **Absence:** A student found absent for one hour in the forenoon or afternoon session is deprived of the attendance for the entire session as far as eligibility for final exam is concerned.
- iii. The hour related calculation in a course is meant for awarding marks for the course concerned.

- iv. **Late entry:** A student is supposed to be in time in the class. Late arrival related treatment is left to the discretion of the individual teacher. However, as a norm, a late arriving student may be permitted to the class, if it is not inconvenient or distraction to the class as such; though attendance MAY NOT BE GIVEN. Late arrival beyond 5 minutes is treated as ABSENCE; though the teacher may consider permitting the student to sit in the class.
- v. **Leave :** A student has to formally report his/her absence with reasons either in advance, or immediately after the absence for obtaining an approved leave. This applies to all sorts of leave – medical, on duty or other.
- vi. The student is supposed to report in prescribed format on the very next day of the absence; however, upto a week's time is permitted. Afterwards, the leave applications will not be considered.
- vii. The student has to retain a copy/section of the approved leave form and produce the same as proof, in case there is any confusion regarding the leave sanctioning. In the absence of such proof, the claims will not be entertained.
- viii. **Duty Leave:** A student representing the college in sports, arts, social service or academic matters, has to get sanction from the class teacher concerned and submit the leave application form duly endorsed by teacher concerned & the class teacher, and submit it to the faculty Dean (or Vice Principal). The same will be forwarded by the Dean/Vice Principal for attendance entry. **SPORTS:** The approval of the Department of Physical Education and the class teacher is required. The time limit for submission mentioned above is applicable in the case of duty leave as well.
- ix. **CONDONATION:** a student may have the privilege of condonation of attendance shortage (upto a maximum of 10 days) on the basis of genuineness of the grounds of absence (medical reasons or college duty), duly recommended by the department. This is not a matter of right. It is a matter of privilege based on Principal's discretion and the good conduct of the student on the campus. A student of UG programme may have a maximum of two such opportunities.
- x. **RE-ADMISSION** – a student whose attendance is inadequate will have to discontinue the studies. Such students, whose conduct is good, may be re-admitted with the approval of Governing Body, on the basis of recommendation from the department, and assurance from the student and the guardian regarding good conduct and compliance in academic and discipline matters. For this the prescribed re-admission fee has to be paid.  
As a condition for re-admission, the student should have cleared all academic arrears, or should have appeared for the exams in which he/she is having an arrear (if the results are not out), and should have fulfilled all academic assignments prescribed by the department for compensating for his lack of attendance.
- xi. **UNAUTHORISED ABSENCE & REMOVAL FROM ROLLS:** A student absent from the classes continuously for 10 consequent days without intimation or permission, shall be removed from the rolls, and the matter intimated to the student concerned. On the basis of recommendation of the department concerned, re-admission process may be permitted by the Principal.

## 2.5 PROGRAMME REGISTRATION

- i. A student shall be permitted to register for the programme at the time of admission.
- ii. A UG student who registered for the programme shall complete the same within a period of 12 continuous semesters from the date of commencement of the programme.

**2.6 PROMOTION:** A student who registers for the end semester examination shall be promoted to the next semester. However, in extreme circumstances, a student having sufficient attendance who could not register for the end semester examination may be allowed to register notionally by the Principal with the recommendation of the Head of the department concerned and, by paying the prescribed fee.

## 2.7 UNDER GRADUATE PROGRAMME STRUCTURE

### Model I BA/B.Sc.

a	Programme Duration	6 Semesters
b	Total Credits required for successful completion of the Programme	120
c	Credits required from Common Course I	22
d	Credits required from Common Course II	16
e	Credits required from Core course and Complementary courses including Project	79
f	Open Course	3
g	Minimum attendance required	75%

### Model I/II B.Com

a	Programme Duration	6 Semesters
b	Total Credits required for successful completion of the Programme	120
c	Credits required from Common Course I	14
d	Credits required from Common Course II	8
e	Credits required from Core and Complementary/ Vocational courses including Project	95
f	Open Course	3
g	Minimum attendance required	75%

### Model II BA/B.Sc.

a	Programme Duration	6 Semesters
b	Total Credits required for successful completion of the Programme	120
c	Credits required from Common Course I	16
d	Credits required from Common Course II	8
e	Credits required from Core + Complementary + Vocational Courses including Project	93
f	Open Course	3
g	Minimum attendance required	75%

### Model III BA/B.Sc./B.Com

a	Programme Duration	6 Semesters
b	Total Credits required for successful completion of the Programme	120
c	Credits required from Common Course I	8
d	Credits required from Core + Complementary + Vocational Courses including Project	109
e	Open Course	3
f	Minimum attendance required	75%

## 2.8 EXAMINATIONS

All the End Semester Examinations of the college will be conducted by the Controller of Examination. The Principal will be the Chief Controller of Examinations. An Examination committee consists of the Chief Controller of Examinations, Controller of Examinations, Additional Chief Superintendent, Deans, IQAC Coordinator and other faculty members nominated by the Principal will act as an advisory body of the matters relating to the conduct of examinations.

## 2.9. EVALUATION AND GRADING

The evaluation scheme for each course shall contain two parts;

- a. Continuous Internal Evaluation (CIA) and
- b. End Semester Examination (ESE).

The internal to external assessment ratio shall be 1:3, for both courses with or without practical except for (i) BA Animation and Graphics (ii) BA Animation and Visual effects and (iii) BBA. For courses without practical, there shall be a maximum of 75 marks for external evaluation and maximum of 25 marks for internal evaluation. For courses with practical, generally external evaluation shall be for a maximum of 60 marks and internal evaluation for 20 marks. Both internal and external evaluation shall be carried out in the mark system and the marks are to be rounded to the nearest integer.

The internal to external assessment ratio for BA Animation and Graphics, BA Animation and Visual effects and BBA shall be decided by the respective Board of studies subject to a minimum of 60 marks for external examinations.

**2.9.1. Continuous Internal Assessment (CIA)/ Continuous Assessment:** The internal evaluation shall be based on predetermined transparent system involving periodic written tests, assignments, seminars/viva/field survey and attendance in respect of theory courses and based on written tests, lab skill/records/viva and attendance in respect of practical courses. The marks assigned to various components for internal evaluation as follows.

### Components of Internal Evaluation (for theory without practical)

	Components	Marks
i.	Assignments	15
ii	Seminar/ Field Visit /Viva/ Workshop /Short project/ Field trip etc.	10
iii	Attendance	5
iv	Two Test papers (2 x 5)	10
	Total	40

- i. **Assignments:** Every student shall submit one assignment as an internal component for every course.

Components	Marks
Punctuality	3
Content	6
Conclusion	3
Reference/ Review	3
<b>Total</b>	<b>15</b>

- ii. **Seminar/Workshop/Short project:** The seminar lecture is expected to train the student in self-study, collection of relevant matter from the books and Internet resources, editing, document writing, typing and presentation. Every student shall submit a hands-on project/project report an internal component for every course.

Components	Marks
Content	4
Presentation	4
Reference/Review	2
<b>Total</b>	<b>10</b>

iii. **Evaluation of Attendance**

The attendance of students for each course shall be another component of internal assessment.

% of attendance	Mark
Above 90%	5
Between 85 and below 90	4
Between 80 and below 85	3
Between 76 and below 80	2
Between 75 and below 76	1

- iv. **Class Tests:** Every student shall undergo **two class tests** (2x5 marks) as an internal component for every course.

**2.9.2 End Semester Examination (ESE):** The End Semester Examination in theory courses shall be conducted by the college with question papers set by external experts/ question bank. The evaluation of the answer scripts shall be done by the examiners based on a well-defined scheme of evaluation given by the question paper setters/Prepared as per the direction of the Chairman, Board of Examiners. The evaluation of the End Semester Examinations shall be done immediately after the examination preferably through the centralised valuation.

**2.9.3 Project :**

Project work is a part of the syllabus of most of the programmes offered by the college. The guidelines for doing projects are as follows:

- Project work shall be completed by working outside the regular teaching hours.
- Project work shall be carried out under the supervision of a teacher in the concerned department or an external supervisor.
- A candidate may, however, in certain cases be permitted to work on the project in an industrial / Research Organization/ Institute on the recommendation of the Supervisor.
- There should be an internal assessment and external assessment for the project work in the ratio 1:3
- The external evaluation of the project work consists of valuation of the dissertation (project report) followed by presentation of the work and viva voce.
- The mark and credit with grade awarded for the program project should be entered in the grade card issued by the college.

### Components of Internal Evaluation for Projects

Components	Marks
Topic/Area selected	3
Experimentation/Data collection	8
Punctuality-Regularity	5
Compilation	8
Content	8
Presentation	8
<b>Total</b>	<b>40</b>

#### 2.9.4 Comprehensive Viva-voce

Comprehensive Viva-voce shall be conducted at the end of the programme, which covers questions from all courses in the programme as per the syllabus.

#### 2.10. Grade and Grade Points

For all courses (theory & practical), Letter grades and grade point are given on a 10-point scale based on the total percentage of marks, (CIA+ESE) as given below:-

Percentage of Marks	Grade	Grade Point (GP)
95 and above	S Outstanding	10
85 to below 95	A <sup>+</sup> Excellent	9
75 to below 85	A Very Good	8
65 to below 75	B <sup>+</sup> Good	7
55 to below 65	B Above Average	6
45 to below 55	C Average	5
35 to below 45	D Pass	4
Below 35	F Fail	0
	Ab Absent	0

Grades for the different semesters and overall programme are given based on the corresponding SGPA/CGPA as shown below:

SGPA/CGPA	Grade
Equal to 9.5 and above	<i>S Outstanding</i>
Equal to 8.5 and below 9.5	<i>A+ Excellent</i>
Equal to 7.5 and below 8.5	<i>A Very Good</i>
Equal to 6.5 and below 7.5	<i>B+ Good</i>
Equal to 5.5 and below 6.5	<i>B Above Average</i>
Equal to 4.5 and below 5.5	<i>C Average</i>
Equal to 4.0 and below 4.5	<i>D Pass</i>
Below 4.0	<i>F Failure</i>

A separate minimum of 30% marks each for internal and external (for both theory and practical) and aggregate minimum of 35% are required for a pass for a course. A candidate who has not secured minimum marks/credits in internal examinations can re-do the same registering along with the end semester examination for the same semester, subsequently. A student who fails to secure a minimum marks/ grade for a pass in a course can be permitted to write the examination along with the next batch.

After the successful completion of a semester, Semester Grade Point Average (SGPA) of a student in that semester is calculated using the formula given below. For the successful completion of semester, a student should pass all courses and score at least the minimum CGPA grade 'D'. However, a student is permitted to move to the next semester irrespective of her/his SGPA.

**Credit Point (CP)** of a course is calculated using the formula

**CP = Cr x GP**, where Cr = Credit; GP = Grade point

**Semester Grade Point Average (SGPA)** of a Semester is calculated using the formula

**SGPA = TCP/TCr**, where

**TCP = Total Credit Point of that semester** =  $\sum_1^n CP_i$ ;

**TCr = Total Credit of that semester** =  $\sum_1^n Cr_i$

Where n is the number of courses in that semester

**Cumulative Grade Point Average (CGPA)** of a Programme is calculated using the formula

$$CGPA = \frac{\sum (SGPA \times TCr)}{\sum TCr}$$

SGPA/CGPA shall be round off to two decimal places

To ensure transparency of the evaluation process, the internal assessment marks awarded to the students in each course in a semester shall be published on the notice board/website at least one week before the commencement of external examination. There shall not be any chance for improvement for internal mark. The course teacher and the faculty advisor shall maintain the academic record of each student registered for the course which shall be forwarded to the controller of examinations through the Head of the Department and a copy should be kept in the department for at least two years for verification.

### 2.11. Registration for the examination

- All students admitted in a programme with remittance of prescribed fee are eligible for the forthcoming semester examinations.
- Online application for registration to the various End Semester Examinations shall be forwarded to the CE along with prescribed fee for each course in prescribed format.
- The eligible candidates who secure the prescribed minimum attendance of the total duration of the course and possess other minimum qualification prescribed in the regulations for each course shall be issued the hall tickets. The hall ticket shall be downloaded by the students from the college website.
- The mode of fee remittance shall be through the prescribed bank.

### 2.12. Supplementary Examinations

Candidates who failed in an examination can write the supplementary examination conducted by the College along with regular examinations.

### 2.13. Improvement of Examination

A candidate can improve his/her marks once by appearing again for the examination with the subsequent batch with the remittance of prescribed fee. In such cases the better of the two marks shall be taken as the marks awarded to him.

Internal assessment marks shall be carried over to the subsequent semester examination.

There shall not be any provision for improving internal assessment marks.

## 2.14. Promotion to the Next Higher Semester

A candidate shall be eligible for promotion from one semester to the next higher semester if,

- a. He / she secures a minimum 75 % attendance and registered for the End Semester Examination of the programme for which he/she is studying.
- b. His / her progress of study and conduct are satisfactory during the semester completed, as per the assessments recorded by the course teachers and the Head of the Department concerned.

## 2.15 Certificates

1. Degree certificates are issued by the Mahatma Gandhi University, Kottayam as per the act and statutes of the University on the submission of the consolidated mark / score cards of the students by the College.
2. A consolidated mark / scored card shall be issued to the candidates after the publication of the results of the final semester examination taken by the candidate.
3. A Course Completion Certificate with classification shall be issued to students till the provisional certificate is issued by the university.

## 2.16. Award of Degree

The successful completion of all the courses with 'D' grade shall be the minimum requirement for the award of the degree.

## 2.17. Monitoring

There shall be a Monitoring Committee constituted by the principal consisting of faculty advisors, HoD, a member from teaching learning evaluation committee (TLE) and the Deans to monitor the internal evaluations conducted by college. The Course teacher, Class teacher and the Deans should keep all the records of the internal evaluation, for at least a period of two years, for verification.

Every Programme conducted under Choice Based Credit System shall be monitored by the College Council under the guidance of IQAC Coordinator, Controller of Exams, academic deans and HoDs.

## 2.18. Grievance Redressal Mechanism

In order to address the grievance of students regarding Continuous internal assessment (CIA) a three-level Grievance Redressal mechanism is envisaged. A student can approach the upper level only if grievance is not addressed at the lower level.

**Level 1:** At the level of the concerned course teacher

**Level 2:** At the level of a department committee consisting of the Head of the Department, a coordinator of internal assessment for each programme nominated by the HoD and the course teacher concerned.

**Level 3:** A committee with the Principal as Chairman, Dean of the Faculty concerned, HOD of the department concerned and one member of the Academic council nominated by the principal every year as members.



### 3. PROGRAMME STRUCTURE FOR BA ANIMATION AND VISUAL EFFECTS (BAAVE)

Course Code	Course Title	Course Category	Course Type	Course Stream	Hours/week	Credits
<b>SEMESTER 1</b>						
23U1CCAVG1	Conversational English	Common Course	Theory	Model III English I	5	4
23U1CRAGD1	History of Art and Design	Core	Theory	Animation and Visual Effects	5	4
23U1PRAVE1	Raster Graphics	Core	Practical	Animation and Visual Effects	5	4
23U1PRAVE2	Rudiments of Animation Drawing	Core	Practical	Animation	5	4
23U1CJAVE1	Techniques of Photographic Composition	Complementary	Practical	Aesthetics of Visual Effects	5	4
					<b>25</b>	<b>20</b>

<b>SEMESTER 2</b>						
23U2CCAVG2	Language and Life Skills	Common Course	Theory	Model III English II	5	4
23U2CRAVE1	History of Animation and Visual Effects	Core	Theory	Animation and Visual Effects	5	4
23U2CJAVE2	Planning for Animation	Complementary	Practical	Aesthetics of Animation	5	4
23U2PRAVE3	Introduction to 3D	Core	Practical	Animation	5	4
23U2PRAVE4	Character Design for Animation	Core	Practical	Animation	5	4
					<b>25</b>	<b>20</b>

<b>SEMESTER 3</b>						
23U3PRAVE5	3D Character Creation	Core	Practical	Animation	5	4
23U3PRAVE6	Introduction to Motion Graphics	Core	Practical	Visual Effects	5	4
23U3RJAVE1	Classical Animation	Core	Practical	Animation	5	4
23U3PCAVE1	Digital Matte Painting	Complementary	Practical	Aesthetics of Visual Effects	5	4
23U3RJAVE2	Rigging for Animation	Core	Practical	Animation	5	4
					<b>25</b>	<b>20</b>

<b>SEMESTER 4</b>						
23U4RJAVE3	Stop Motion Techniques	Core	Practical	Animation	5	4
23U4PCAVE2	Acting for Animators	Complementary	Practical	Aesthetics of Animation	5	4
23U4PRAVE7	3D Character Motion	Core	Practical	Animation	5	4
23U4CJAVE3	2D Digital Animation	Complementary	Practical	Aesthetics of Animation	5	4
23U4PRAVE8	Visual Effects - I	Core	Practical	Visual Effects	5	4
					<b>25</b>	<b>20</b>

**SEMESTER 5**

SEMESTER 5						
23U5CRAVE2	Environmental Studies and Human Rights	Core	Theory		5	4
23U5RJAVE4	Visual Effects - II	Core	Practical	Visual Effects	6	4
23U5CJAVE4	Miniatures for Low Budget Filming	Complementary	Practical	Aesthetics of Animation	5	4
23U5PRAVE9	Dynamic Simulations	Core	Practical	Visual Effects	5	4
	Open Course					
23U5OCAVE1A	Non-Linear Editing and Colour Grading	Open Core	Practical	Animation and Visual Effects	4	3
23U5OCAVE1B	Audio Editing		Practical			
23U5OCAVE1C	Architectural Visualization		Practical			
					25	19

**SEMESTER 6**

23U6INAVE1	Internship	Core	OJT	Animation and Visual Effects		2
23U6RJAVE5	Animation Project	Core	Project	Animation	6	4
23U6RJAVE6	Visual Effects Project	Core	Project	Visual Effects	6	4
23U6PCAVE3	3D Lighting & Rendering	Complementary	Practical	Aesthetics of Animation	5	4
<b>Choice Based Project (Elective)</b>						
23U6EJAVE1A	Advanced Animation in Flash	Core	Practical	Visual Effects	5	3
23U6EJAVE1B	Methods of Shooting for Green Screen		Practical			
23U6EJAVE1C	Matchmoving Techniques		Practical			
23U6CJAVE5	Demo Reel Presentation	Complementary	Practical	Aesthetics of Visual Effects	3	4
					<b>25</b>	<b>21</b>
						<b>Total Credits: 120</b>

**Extra Credit Course: Service Learning; Hours: 40; Credit: 1**

CC – Common Course Theory

CR – Core Course Theory

PR – Core Course Practical

PJ – Core Course Project

CP – Complementary Course Theory

PC – Complementary Course Practical

RJ – Core Project

CJ – Complementary Course Project

OC – Open Course

EJ – Elective

IN – Internship

## **SYLLABUS**

<b>COMMON COURSE</b>	<b>Code - 23U1CCAVG1      Type: THEORY</b>	<b>No. of Credits</b>	<b>No. of Contact Hrs</b>
<b>SEMESTER 1</b>	<b>Title - MODEL III ENGLISH I - CONVERSATIONAL ENGLISH</b>	<b>4</b>	<b>90</b>

### COURSE OBJECTIVE

This course aims at attaining conversational skills for formal occasions such as club meetings, social gatherings, formal discussions at professional meetings and interviews. Creative writing helps students to express creatively their feelings. Some interpretative writing, dealing with its subject from a limited personal point, will also be taught.

### COURSE OUTCOMES

- CO 1. Read, write and speak English confidently
- CO 2. Express themselves creatively- through writing and storyboards
- CO 3. Analyse why and how we need to take care of our planet
- CO 4. Evaluate social issues like gender inequality, environmental unsustainability etc. and assess the need for selected movements that are socially and culturally important
- CO 5. Apply the knowledge and manage work-life balance thus leading a more balanced life in the future.

### MODULE 1

Introducing Yourself: formal & informal – Stock phrases and patterns involved – Introduction in classroom – At meetings – At interviews (corporate, managerial, executive level, customized for specific purpose)  
 Introducing others: formal & informal  
 Inviting people: formal & informal – to an event – to a formal event – to a family event.

### MODULE 2

Making request: formal & informal – Key phrases – Asking for help and Refusing politely – Asking for directions – Giving directions  
 Giving suggestions: formal & informal – Key phrases – to a friend – to a colleague – to the employer.

### MODULE 3

Initiate a conversation: Casual & professional – with a stranger – with a colleague – with employer  
 Registering complaint: formal & informal  
 Saying goodbye: formal & informal

### MODULE 4

Reading & Comprehension: Newspaper – short stories – non fiction

### MODULE 5

Book Reviews & Movie Critique

### REFERENCE

1. Basic Review of English : Alger, Ralph K.
2. Writing : Hedge, Tricia
3. Written Communication : Freeman, Sarah
4. Success with English : Broughton, Geofferey
5. English Conversation Practice : Taylot, Grant
6. English in Situations : O'Neil, R.

<b>CORE COURSE</b>	<b>Code - 23U1CRAGD1</b>	<b>Type: THEORY</b>	<b>No. of Credits</b>	<b>No. of Contact Hrs</b>
<b>SEMESTER 1</b>	<b>Title - HISTORY OF ART AND DESIGN</b>		<b>4</b>	<b>90</b>

The course will examine the role and development of the visual arts in past and present cultures throughout the world. This is designed to help students to develop art application, aesthetic judgment, and to increase visual perception and critical thinking skills.

### **COURSE OUTCOMES**

- CO 1. Explain the developments of prehistoric visual representations
- CO 2. Compare the development of art from the time of civilizations up to the age of enlightenment
- CO 3. Summarize the development of the art of printing and to classify the artistic developments from imaginative to ideological
- CO 4. Analyse the impact of industrial revolution and its influence in the graphic design
- CO 5. Identify different art movements of 20th century

### **MODULE 1**

Prehistoric visual representations - Palaeolithic to the Neolithic Period-Lascaux, Altamira, Indian evidences. The earliest writing-Mesopotamian visual identification, Egyptian hieroglyphs, Chinese calligraphy, Pictographs to Alphabets.

### **MODULE 2**

Development of art from the time of Civilizations up to the age of enlightenment – Mesopotamian, Egyptian, Indian, Chinese, Greek & Roman civilizations, Byzantine, Gothic, Renaissance era and Baroque.

### **MODULE 3**

Development of the art of printing - the invention of paper and discovery of printing, the invention of movable type. Early European block printing, Copperplate engraving etc. Illuminated Manuscripts & German illustrated books. Graphic design of the Rococo Era

Development of art from imaginative to ideological – Romanticism, Impressionism, Expressionism and Cubism

### **MODULE 4**

Twentieth Century graphic design - Industrial Revolution-Impact of technology upon visual communication - revolution in printing-development of photography as a communication tool- Victorian era graphic design- development of Lithography

### **MODULE 5**

Art and Craft movements - Art Nouveau, Modernism, Art Deco, Bauhaus, Organic design, Minimalism, Pop art, Postmodernism, American Kitsch, Conceptual art.

### **REFERENCE**

1. Meggs' History of Graphic Design: Philip B. Meggs, Alston W. Purvis
2. Graphic Design History: A Critical Guide: Johanna Drucker, Emily McVarish
3. The Dictionary of Visual Language: Philip Thompson, Peter Davenport
3. A Concise History of Art: G.Buzin
4. Encyclopedia of World Art (Vol.I&II): McGraw Hill Publication
5. Necessity of Art : Ernest Fisher
6. The Dictionary of Visual Language: Philip Thompson, Peter Davenport

<b>CORE COURSE</b>	<b>Code - 23U1PRAVE1</b>	<b>Type: PRACTICAL</b>	<b>No. of Credits</b>	<b>No. of Contact Hrs</b>
<b>SEMESTER 1</b>	<b>Title - RASTER GRAPHICS</b>		<b>4</b>	<b>90</b>

Students develop a basic skill and understanding in raster graphic and its applications.

### **COURSE OUTCOMES**

- CO 1. Construct the area of specialization in design, animation, vfx and post production where they can perform their best.
- CO 2. Build precision, control and fluency within the foundation of Visual Effects & Motion Graphics work environments.
- CO 3. Summarize vocabulary and visual language for graphic principles and ethics.
- CO 4. Develop an understanding of graphic design principles in applied practice.
- CO 5. Determine design project with requirement of text and layers elements and images

### **MODULE 1**

What is Raster Graphics? What is the difference between Raster and Vector graphics? Digital image, Pixels, Bit depth, DPI, LPI, Resolution, File formats (Print and screen media formats: GIF, JPEG, TIFF etc.). Compression: Lossy, Lossless, Colour: Colour Coding, Process colour (CMYK), RGB, Spot colour, Colour systems. Duotones, Tritones, Quadrtones Etc.

### **MODULE 2**

Selection tools, Retouching tools, Pathmaking tools, Image adjustment options. Processing camera RAW layer, Channel, Mask, Path, Layer comp, Paragraph & character, Swatches, Adjustment layers

### **MODULE 3**

Preference settings, Colour settings, Assign profile automate, Script. proof setup, Gamut warning, Bit preview, Screen mode show, Pixel aspect ratio

### **MODULE 4**

Saving with clipping path & alpha channel, PSD, PDF, EPS, TIFF, JPEG. Camera RAW

### **MODULE 5**

What are the use of blend modes? How to apply blend modes? Different types of blend modes: Normal modes, Darken modes, Lighten modes, Contrast modes, Comparative modes and color modes. Application of blend modes, Creating custom textures for 3D models, Compositing Etc.

### **REFERENCE**

1. Adobe Photoshop Classroom in a Book: Adobe Creative Team
2. The Book of GIMP - A Complete Guide to Nearly Everything: Olivier Lecarme, KarineDelvare

<b>CORE COURSE</b>	<b>Code - 23U1PRAVE2      Type: PRACTICAL</b>	<b>No. of Credits</b>	<b>No. of Contact Hrs</b>
<b>SEMESTER 1</b>	<b>Title - RUDIMENTS OF ANIMATION DRAWING</b>	<b>4</b>	<b>90</b>

Rudiments of animation drawing is intended to provide the student an understanding of basic drawing techniques for animation.

### **COURSE OUTCOMES**

- CO 1. Develop the skill of drawing different drawing materials
- CO 2. Develop the skill of quick drawing
- CO 3. Develop the skill of Life Sketch drawing from observation
- CO 4. Build the dimensions of Perspective
- CO 5. Build Lighting, Shading and Shadow

### **MODULE 1**

Introduction to different drawing materials and tools: Dry media (Pencils, Charcoals, Chalks, Crayons, Pastels, Erasers, Smudging Tools), Wet Media (Dip pens, Disposable and Cartridge Pens, Brushes), Inks (Water based, Alcohol based, Indian/Chinese ink), Paints (Water based, Acrylic, Oil), Drawing surfaces (Papers, Newsprint, Watercolor paper, Charcoal paper, Canvas) Tools for erasing and sharpening: Palettes, Knives, Easels

### **MODULE 2**

Doodling and noodling (Drawing straight lines, Drawing curved lines, Free hand drawing) Holding the pencil: Angle and direction of lines (Drawing lines, Circles, Ovals, Scribbles, Patterns Etc.) Shapes and forms, Memory and imagination drawing, Drawing with grids

### **MODULE 3**

Drawing from observation: Life drawing, Use of basic shapes and forms, Sketching poses, Rapid sketching from live models, Attitude: Gestures, Line drawing, Quick sketches, Thumbnails, Stick figures, Line of action, Balance, Rhythm, Positive and negative spaces, Silhouettes, Caricaturing fundamentals, Exaggeration

### **MODULE 4**

Perspective drawing, Vanishing points, orthogonal lines, Horizon, Eye level. One-point perspective, Two point perspective, Three point perspective, Multi-point perspective, Overlapping and intersection of shapes in one point, Two point and three point perspective views, Foreshortening

### **MODULE 5**

Tones, Lighting and shading, Basic 3Dimensional light set up, types of shadows- Cast shadow, Contact shadow, Contour shadow, Reflected light, Overhang shadow, Highlight, Core shadow, Objects and shapes in perspective with light and shade

### **REFERENCE**

1. Exploring the Elements of Design: Mark A. Thomas, Poppy Evans
2. The Art of Composition: Michael Jacobs
3. The Art of Pictorial Composition: Wolehonok
4. Complete Books of Artist Techniques: Dr. Kurt Herbers
5. Drawing for The Absolute and Utter Beginner: Claire Watson Garcia
6. Perspective Made Easy: Ernest R Norling
7. Perspective Drawing Handbook: Joseph D'Amelio

<b>COMP. COURSE</b>	<b>Code - 23U1CJAVE1</b>	<b>Type: PROJECT</b>	<b>No. of Credits</b>	<b>No. of Contact Hrs</b>
<b>SEMESTER 1</b>	<b>Title -</b>	<b>TECHNIQUES OF PHOTOGRAPHIC COMPOSITION</b>	<b>4</b>	<b>90</b>

**OBJECTIVE**

Techniques of Photographic Composition is intended to help students understand the basic knowledge of image making using digital camera. Students will be introduced to basic picture composition.

**COURSE OUTCOMES**

- CO 1. Explain the types of camera, lenses and other devices used in Photography
- CO 2. Analyse the study of Photography/ Cinematic frames and compositions, the study and practice of production enhance their work as film scholars.
- CO 3. Identify the different use of lenses, Image quality and size for productions.
- CO 4. Summarize the industry as a whole by executing all components of development, pre-production, production and post-production planning
- CO 5. Analyse the study of Photography/ Cinematic frames and compositions, the study and practice of production enhance their work as film scholars.

**MODULE 1**

The Psychology of Visual Perception, Visual Aesthetics, Art of Film Making, Stages in Brief

**MODULE 2**

Photography as communication tool, Basics of visual composition, Visuals, Image Sizes, Camera Angles, Elements and principles of picture composition, Balance and structure, Composing movement, Rule of space, Rule of odd, Rule of third, Golden triangle, Perspective and depth of field, Foreshortening

**MODULE 3**

Basic features of DSLR camera, Human eye and camera, Principles of image formation, Properties of light and its control, Shutter, Lenses and exposure controls, Aperture, focus and depth of field, depth of focus. Color temperature, Direction and quality of light. Measurement of light - light meters. Histogram: Understanding basics of histogram

**MODULE 4**

Grammar for motion picture: Camera Movements, Principle of continuity, Action, Look, Movement, Tonal, Emotion etc. Imaginary line concept: crossing the line - 300 rule - 1800 rule. Meaning and aesthetic aspects of angle selection

**MODULE 5**

Exercise: Project work based on the syllabus and parameters of the course under the guidance of supervising faculty.

**REFERENCE**

1. Basic Principles of Photography: Gerald Millerson
2. Grammar of Shot (Second edition): Roy Thompson (Focal Press)
3. How to read a film: James Monaco
4. The T.V. Production - Hand Book: Zetti Herbert
5. Elements of film: Lee. R. Bobker
6. The Art of Pictorial Composition: Wolohomok



<b>COMMON COURSE</b>	<b>Code - 23U2CCAVG2      Type: THEORY</b>	<b>No. of Credits</b>	<b>No. of Contact Hrs</b>
<b>SEMESTER 2</b>	<b>Title - MODEL III ENGLISH II - LANGUAGE AND LIFE SKILLS</b>	<b>4</b>	<b>90</b>

### **COURSE OUTCOMES**

- CO 1. Understand and analyze gender-related issues  
 CO 2. Think about what zero tolerance policy at workplace means  
 CO 3. Talk and write about international gender movements such as #metoo  
 CO 4. Understand and translate for colleagues India's sexual harassment laws.  
 CO 5. Understand, analyze and make sense of the psychological effects of sexual abuse on both men and women  
 CO 6. Practice becoming a more aware and liberal individual who adds value to society

### **MODULE 1**

Being Independent with : A. Leadership, B. Negotiations, C. Organisation, D. Grooming, E. Rights and Laws, F. Spirituality, G. Scientific Temper, H. Values, I. Politics and governance

### **MODULE 2**

Relationship Dynamics – Self, Family, Work place and Society: A. Understanding the Self B. Equality/Equity C. Gender and sexualities D. Violence

### **MODULE 3**

Employability - A. Language, B. Proactive responses, C. Understanding others, D. Coping with Stress and strain, E. Workplace behavior, F. Authority, power and subordination.

### **MODULE 4**

Conversational skills- Communicating for various purposes in live situations such as How to initiate a conversation with a total stranger, How to complain effectively, How to make suggestions at different instances, How to introduce oneself and one's friends to others, How to invite someone to an important event, How to make a request, How to ask for help and how to refuse help politely.

### **MODULE 5**

Book Reading: Short Stories, Book Reviews, Movie Critique

### **REFERENCE**

1. Alger, Ralph K., *Basic Review of English*, Cambridge Book Company, 1959
2. Hedge, Tricia, *Writing*, OUP, 1988
3. Freeman, Sarah, *Written Communication in English*, Orient Longman, 1979
4. Broughton, Geoffry, *Success With English*, Penguin, 1970
5. Taylor, Grant, *English Conversation Practice*, MacGraw Hill Education, 2005
1. O' Neill, R. *English in Situations*, OUP, 1980

<b>CORE COURSE</b>	<b>Code - 23U2CRAVE1      Type: THEORY</b>	<b>No. of Credits</b>	<b>No. of Contact Hrs</b>
<b>SEMESTER 2</b>	<b>Title - HISTORY OF ANIMATION AND VISUAL EFFECTS</b>	<b>4</b>	<b>90</b>

### OBJECTIVE

This paper should enlighten the students on the advancement made in the field of animation and visual effects so as the appreciate and understand where the technology used today developed from. It also inspires students to experiment with different types of animation and visual effects techniques so as to think of process improvements ideas for animation and visual effects.

### COURSE OUTCOMES

- CO 1. Explain the early attempts of animation
- CO 2. Explain different experimental animations all over the world and discuss the role of pioneers in the development of animation.
- CO 3. Summarize different animation techniques and advancements
- CO 4. Analyze the history of visual effects
- CO 5. Identify different animation and visual effects studios around the world

### MODULE 1

Early Attempts for Animation: Early attempts to imitate and reproduce motion, Cave paintings. Persistence of vision and Phi phenomenon, Early animation devices, Initial attempts to make animation, Photography, Motion picture

### MODULE 2

Birth of Animation: Experimental animations (Drawn, Stop motion) all over the world, Pioneer animators, Major animation studios

### MODULE 3

Animation Techniques and Advancements: Animation techniques (Time lapse, stop motion, Cut-out, Silhouette, Cel), Technical advancements (Layer, Cel, Peg bar, Combining live action with cartoon characters, Synchronized sound, Technicolor process, Multi-plane camera etc.)

### MODULE 4

Visual Effects: Use of miniatures in early films, Use of makeup, Rear projections, Pyrotechnics and matte paintings before the CGI era, Stereoscopic 3D, Realistic puppets and stop motion photography, Split screen technology, Space vision 3D, Stereovision 3D, Motion controlled camera, CGI Effects, Digital compositing, Animatronics, Motion capture, High speed cameras, The fusion camera system, Visual effects studios

### MODULE 5

Animation & VFX Around the World: American, Canadian, European, Indian, Japanese Studios.

### REFERENCE

1. Enchanted Drawings: The History of Animation: Charles Solomon
2. The World History of Animation: Stephen Cavalier
3. Cartoons: One Hundred Years of Cinema Animation: Giannalberto Bendazzi
4. Of Mice and Magic: Leonard Maltin
5. Before Mickey: The Animated Film, 1898-1928: Donald Crafton
6. The Anime Encyclopedia: A Guide to Japanese Animation Since 1917: Lowry
7. Special Effects: The History and Technique: Richard Rickitt
8. Special Effects: How They Are Done in Hollywood: Robert G Willard

<b>COMP. COURSE</b>	<b>Code - 23U2CJAVE2</b>	<b>Type: PROJECT</b>	<b>No. of Credits</b>	<b>No. of Contact Hrs</b>
<b>SEMESTER 2</b>	<b>Title - PLANNING FOR ANIMATION</b>		<b>4</b>	<b>90</b>

### OBJECTIVE

Planning for animation is meant to guide the student through the various stages of pre-production before the production starts of an animation project. It starts from developing an idea through to selling of a story using storyboards and animatics.

### COURSE OUTCOMES

CO 1. Build Concepts and develop story

CO 2. Create Script and Screenplay

CO 3. Develop Story Characters

CO 4. Creation of storyboard layouts.

CO 5. Creation of Animatics

### MODULE 1

Techniques of animation, Different types of animation, Workflows of different types of animation, Pre-production, Production and Post-production stages, Types of animation, Experimental animations

### MODULE 2

Developing idea/concept: Story, Basic elements of a story, Types of stories, Creating story ideas, Sources of storyline, Adaption, Character roles, Characterization, Dialogues, Basic structure of a story, Old and modern structures, Concept of acts, Theme, Subplots, Tone, Genre, Writing for different types and groups of audience, Animation script, Animation script Vs. Live action movie script, Shot, Scene, Sequence, Screenplay format, Elements of screenplay format, Montage

### MODULE 3

Character designing, Features of a character, Types/Kinds of characters, Designing props and assets of character, Creating turnarounds/Character model sheets, Blueprints, Character size comparison charts, Character attitude poses

### MODULE 4

Storyboard, Definition, Importance of storyboarding, Different types of storyboards, Storyboard formats, Elements of storyboarding (Design, Color, Light and Shadow, Perspective, Staging, Composition rules), Concept of panels and its usages, Floor plans, Storyboarding movements, Illustrating camera techniques in a storyboard, Visual continuity, Transitions, Digital storyboarding

### MODULE 5

Creation of Animatic: Scanning storyboard panels and synchronizing it with the sound tracks

### REFERENCE

1. The Encyclopedia of Animation Techniques: Richard Taylor
2. How to Write for Animation: Jeffrey Scott
3. Writing for Animation, Comics and Games: Christy Marx
4. How to Draw Animation - Learn the Art of Animation from Character Design to Storyboards and Layouts: Christopher Hart
5. The Art of the Storyboard - Storyboarding for Film, TV, and Animation: John Hart
6. Exploring Storyboarding: Wendy Tumminello
7. Don Bluth's Art of Storyboard: Don Bluth

<b>CORE COURSE</b>	<b>Code - 23U2PRAVE3</b>	<b>Type: PRACTICAL</b>	<b>No. of Credits</b>	<b>No. of Contact Hrs</b>
<b>SEMESTER 2</b>	<b>Title - INTRODUCTION TO 3D</b>		<b>4</b>	<b>90</b>

### OBJECTIVE

This course is meant to introduce the student to the world of 3D. In this course, the student will learn about how to work in 3D space, model, texture, apply lights and finally take a render output of his/her creation.

### COURSE OUTCOMES

CO 1. Create Detailed modeling of furnitures

CO 2. Create Detailed modeling of Instruments

CO 3. Analyse and create Character

CO 4. Analyse Interior Modeling, Texturing, Lighting, Rendering

CO 5. Create Exterior Modeling, Texturing, Lighting, Rendering

### MODULE 1

Introduction to 3D graphics, 3D Object's Coordinate System: X, Y and Z axis. How to identify the X, Y and Z axis by its color (Red, Green, Blue), 3D software available, What is 3D Animation? 3D production pipeline, 3D animation and their applications in animation movies, visual effects, advertisements, 3D visualisation, simulation, training videos Etc.

### MODULE 2

3D interface, Organising work: Project folders, Basic skills for handling the selected software like transforming objects, Object properties, Hierarchies, Pivots Etc. Modeling techniques like Spline, NURBS, Polygon and SubD, Various tools and their applications, Detailed modeling of furniture, instruments, character props etc.

### MODULE 3

Shaders and materials, 2D and 3D textures, Texturing with HDR images, Different types of material creation, Normal and artificial lighting: 1 Point, 2 Point, 3 Point lighting in 3D space, Common light attributes, Shadows and its attributes.

### MODULE 4

Introduction to animation, Key-frame creation, Animation curves, Path animation, 3D Cameras, Creating Camera movements

### MODULE 5

Exterior Modeling: Buildings, Street, House, children's park Etc. Interior Modeling: Room and furniture. Exterior lighting, Interior Lighting: Global illumination, Final Gather. Rendering: Render settings, Batch rendering, Rendering image sequences

### REFERENCES

1. The Art of 3D Computer Animation and Effects: Isaac Kerlow
2. Autodesk 3ds Max 2014 Essentials: Randi L. Derakhshani, DariushDerakhshani
3. Autodesk Maya 2014 Essentials: Paul Naas
4. Blender Studio Projects: Digital Movie Making: Tony Mullen, Claudio Andaur
5. Digital Animation Bible - Creating professional animation with 3ds Max, Lightwave& Maya: George Avgerakis
6. 3D Automotive Modeling: An Insider's Guide to 3D Car Modeling and Design: Andrew Gahan

<b>CORE COURSE</b>	<b>Code - 23U2PRAVE4</b>	<b>Type: PRACTICAL</b>	<b>No. of Credits</b>	<b>No. of Contact Hrs</b>
<b>SEMESTER 2</b>	<b>Title - CHARACTER DESIGN FOR ANIMATION</b>		<b>4</b>	<b>90</b>

### OBJECTIVE

Character design for animation is intended to provide the student with an understanding of the anatomy of a human body, a creature or a cartoon character.

### COURSE OUTCOMES

CO 1. Make use of the Anatomy of Human Body

CO 2. Make use of the Male, Female Anatomy Body Structure

CO 3. Make use of the Anatomy of Animals, Birds and Reptiles

CO 4. Develop Cartoon Characters drawing from basic shapes and Proportion

CO 5. Create Classical Cartoon Characters

### MODULE 1

Human Anatomy: Anatomy of different age groups (Babies, Kids, Teens, Young Adults, Aged). Basic Proportions, Basic understanding of the skeletal and muscle system, Human forms in perspective

### MODULE 2

Male and female anatomy. Body Structure - Proportion and construction of body parts (Torso, Face, Eyes, Nose, Ears, Mouth, Hand, Feet etc.) Motion analysis, Study of poses

### MODULE 3

Anatomy of animals, birds, reptiles. Body structure: Basic forms, proportion and construction of body parts: head, legs, tails. Use of perspectives while drawing animals, birds, reptiles and Insects. Understanding motion and grace

### MODULE 4

Cartoon characters, Understanding cartoon characters, Cartoon constructions, Character development. Drawing from basic shapes, Distortion of proportions. Cartoon faces, Eyes, Mouths, Hair, Nose, Hands, Feet, Facial expressions

### MODULE 5

Classic cartoon characters (Humans, Animals, Birds, Reptiles - Cute, Screwball, Goofy, Heavy, Pugnacious - Fairy tale characters, Gnomes, Elves, Dwarves, Witches). Anime Style

### REFERENCE

1. How to Draw What You See: Rudy De Reyna
2. Figure Study Made Easy: Aditya Chari
3. Figure Drawing Without a Model: Ron Tiner
4. Anatomy for the Artist: Sarah Simblet
5. The Art of Animal Drawing: Construction, Action, Analysis, Caricature: Ken Hultgen
6. Animal Drawing: Anatomy & Action for Artists: Charles R. Knight
7. Animal Anatomy for Artists: Eliot Goldfinger
8. Cartoon Animation: Preston Blair
9. Disney Animation - The Illusion of Life: Frank Thomas and Ollie Johnston
10. How to Draw Animation - Learn the Art of Animation from Character Design to Storyboards and Layouts: Christopher Hart

<b>CORE COURSE</b>	<b>Code - 23U3PRAVE5</b>	<b>Type: PRACTICAL</b>	<b>No. of Credits</b>	<b>No. of Contact Hrs</b>
<b>SEMESTER 3</b>	<b>Title - 3D CHARACTER CREATION</b>		<b>5</b>	<b>90</b>

### OBJECTIVE

3D Character Creation is intended to provide skills of character modeling to the student with an understanding of the anatomy of a human, a creature or a cartoon character.

CO 1. Create humans, Basic proportions, Modeling of body parts (Head, Ear, Mouth, Limbs, Torso etc.)

CO 2. Develop Modeling animals and birds, Basic proportions, Modeling of body parts

CO 3. Build different types of human characters , creation of blend shapes

CO 4. Analyse Texturing a character

CO 5. Create skin material using Arnold material

### MODULE 1

Modeling humans, Basic proportions, Modeling of body parts (Head, Ear, Mouth, Limbs, Torso etc.)

### MODULE 2

Modeling animals and birds, Basic proportions, Modeling of body parts (Head, Ear, Horns, Mouth, Limbs, Torso, Tail, Wings etc.)

### MODULE 3

Modeling different types of human characters (Real, Stylized, Comic, Characters of different age group etc.), Creation of blend shapes

### MODULE 4

Texturing a character: UV Texture Layout, Unfolding UVs, Mirroring UV, Arranging UV Shells, Transferring UVs, Multiple UV sets, Optimizing Textures, Unwrap UVW and Optimizing Textures.

### MODULE 5

Creating skin material using subsurface scattering, Mental ray shaders and MIA materials for character texturing, 3d paint tool and its application.

### REFERENCE

1. Mastering Autodesk Maya 2012: Todd Palamar SYBEX
2. Maya Character Creation: Chris Maraffi

<b>CORE COURSE</b>	Code - <b>23U3PRAVE6</b> Type: <b>PRACTICAL</b>	No. of Credits	No. of Contact Hrs
<b>SEMESTER 3</b>	Title - <b>INTRODUCTION TO MOTION GRAPHICS</b>	<b>4</b>	<b>90</b>

### OBJECTIVE

This course trains students in the essential vocabularies and concepts of motion graphics using type, shapes, objects and images. It covers the fundamental concepts for motion graphics including graphics and promos for television networks, film titles and advertising.

### COURSE OUTCOMES

- CO 1. Construct the area of specialization in post-production where they can perform their best.
- CO 2. Build precision, control and fluency within Visual Effects & Motion Graphics work environments.
- CO 3. Summarize vocabulary and visual language for motion graphic principles and ethics.
- CO 4. Develop an understanding of motion graphic design principles in applied practice.
- CO 5. Determine motion graphic project with requirement of 2D, 3D elements and real footages

### MODULE 1

What is motion graphics? Softwares used for Vfx, Node based and layer based compositing, Exploring advantages of VFX, File formats, Introduction to After Effects, After Effects panels, Starting a new project, Project settings, Importing assets, Methods of creating new composition, Composition settings

### MODULE 2

Layer Management: Selecting, Moving layers, Replace footage, Trim in and out points, Ripple insert. Layer properties in the timeline panel, Show and hide properties in timeline, Copy/paste properties to different layers. Basic animation using layer properties, Animation using keyframe and Graph Editor, Keyframe assistant, Keyframe interpolation, Spatial Keyframes and motion paths, Animate text with text animators. Blending modes: Using blending modes with different layers. Adjustment layers, Solid layer, Null objects, Text layer, Guide layer, Concepts in parenting: Parent and child layer

### MODULE 3

Mask: Creating masks, Mask points, Mask feather tool, Animating masks, Mask by painting. Track mattes: Luma matte, Alpha matte, Traveling matte, RGBA. Motion blur. RAM Preview: Setting resolution for preview. Uses of pre-composition and nesting. Puppet tools. Effects and Presets: Applying effects from effects and preset panel, Compound effects. What is expressions? Applying simple expressions.

### MODULE 4

3D Layer: 3D space, Z dimension, 3D Rotation, Z scale, 3D motion paths, Creating camera, Camera settings. Lighting in 3D space, Lighting parameters, Manage shadow. Multiplane compositing: 3D camera movement through 2D image layers. Controlling speed of different layers to show depth. Depth compositing, Z channel, RGBA Z image

### MODULE 5

Rendering: Render queue panel. Render settings, Output module settings. Introduction to Adobe Media Encoder

### REFERENCE

1. Creating Motion Graphics with After effects: Trish and Chris Meyer, Focal Press
2. Motion Graphics with Adobe Creative Suite5 Studio Techniques: Richard Harrington and Ian Robinson

<b>CORE COURSE</b>	<b>Code - 23U3RJAVE1</b>	<b>Type: PRACTICAL</b>	<b>No. of Credits</b>	<b>No. of Contact Hrs</b>
<b>SEMESTER 3</b>	<b>Title - CLASSICAL ANIMATION</b>		<b>4</b>	<b>90</b>

### OBJECTIVE

To provide a solid foundation of the principles of animation, together with observational studies essential for the student of animation. Observational drawing from life includes drawing from the model or animal, to better understand gesture, poses and particularly movement. By the end of this course participants will be able to: 1. Appropriately plan out their animated scenes visually; 2. Demonstrate an understanding of composition and visual storytelling; 3. Demonstrate a basic understanding of character and scene design.

### COURSE OUTCOMES

CO 1. Develop the skill of using Animation Equipments

CO 2. Develop the skill of quick Animation drawing

CO 3. Classify Basics of Animation Principles

CO 4. Build Skill of Acting for Animation

CO 5. Analyse of Two Legged Animation

### MODULE 1

Animation equipment: Cels, Light box, Peg holes and Peg bars, Line/Pencil tests, Field charts, Rostrum camera. The exposure sheet (X Sheet), Concepts of Soundtrack, Track breakdown, Key frames, In-betweens, Clean-up etc.

### MODULE 2

Line of action, Path of action, Maintaining volume, Key drawings, Extremes and breakdowns, Inbetweens, Spacing and charting, Timing ladder and numbering of animation drawings, Flipping key drawings, Animation methods: Straight ahead, Pose to pose and a combination of both

### MODULE 3

Experiments with basic principles of animation (Squash and stretch, Anticipation, Staging, Straight ahead and Pose to pose animation, Follow through and overlapping action, Slow out and Slow in, Arcs, Secondary action, Timing, Exaggeration, Solid drawing, Appeal)

### MODULE 4

Acting for animators, Character acting, Difference between acting for drama and acting for animation, Studies from movies, Basics of animation acting, Posing, Timing, Staging, Voice acting, Expressions, Body language

### MODULE 5

Animating walks, Normal and stylized walks, Walks of different types of human characters, Runs, Different types of runs, Runs of different types of human characters, Jumps, Skips and Leaps. Takes and double takes, Anticipation, Overlapping actions, Mass and weight.

### REFERENCE

1. The Illusion of Life: Disney Animation: Ollie Johnston, Frank Thomas
2. The Animator's Survival Kit: Richard Williams
3. Cartoon Animation: Preston Blair
4. Timing for Animation: Harold Whitaker and John Halas
5. How to Make Animated Films: Tony White
6. The Animator's Workbook: Tony White
7. The Male and Female Figure in Motion: Edward Muybridge



<b>COMP. COURSE</b>	<b>Code - 23U3PCAVE1</b>	<b>Type: PRACTICAL</b>	<b>No. of Credits</b>	<b>No. of Contact Hrs</b>
<b>SEMESTER 3</b>	<b>Title - DIGITAL MATTE PAINTING</b>		<b>4</b>	<b>90</b>

### OBJECTIVE

This course will introduce the students to the art and craft of painting techniques like matte painting and digital paint effects with the help of graphic pen tablets. Students apply this technique to recreate realistic or dreamscapes and textures for 3D models. Emphasis is on learning how to use a graphic pen tablet which has become popular in the industry. Importance is also given to the visual effect techniques like removal of unwanted elements from a footage, wire removal, roto brush Etc.

### COURSE OUTCOMES

- CO 1. Develop the skill of using colours
- CO 2. Build the skill of Character design with colour
- CO 3. Build the skill of Digital Matte painting
- CO 4. Build the skill of Background with colors
- CO 5. Build the skill in compositing Software

### MODULE 1

Concept of digital painting, Learning digital painting, Techniques used for drawing with tablet and graphic pen, Draw and painting in Photoshop, Digital creation of charcoal drawings, pastel, watercolor and oil painting, Colorizing black and white photograph with Photoshop

### MODULE 2

Character design: issues and limitations, Creating character history, Designing the physical look, Drawing, Sketching and painting of the character, Value and color in character creation. Lighting for a character, Using and blending edges in painting, Creating textures and patterns, Painting an eye, face and hair, Painting real and fantasy characters.

### MODULE 3

Digital matte painting: Preparing the background plate, Articulated mattes, Plate restoration, Plate extension, Adding 3D elements, Creating sky mattes, Static matte and motion matte painting, Color grading, Final output.

### MODULE 4

Methods and techniques of creating a dreamscape or BG using elements from various sources

### MODULE 5

Wire removal technique using various compositing softwares. Rotoscopy: basics and examples, Tracing for animation, matting with green screen, Garbage matting, mid ground Roto, Compositing mid ground, colorizing and animated wipe.

### REFERENCE

1. Bold Vision: A Digital Painting Bible: Gary Tonge
2. Digital Fantasy Painting Workshop: Martin McKenna
3. Digital Character Design and Painting: Don Seegmiller
4. Complete Digital Painting Techniques: David Cole
5. Digital Fantasy Painting: Michael Burns
6. The Complete Guide to Digital Illustration: Steve Caplin, Adam Banks and Nigel Holmes
7. 100 Ways to Create Fantasy Figures: Francis Tsan
8. The Invisible Art: The Legends of Movie Matte Painting: Mark Cotta Vaz & Craig Barron
9. D'artiste Matte Painting: Alp Altiner, Dylan Cole and Chris Stoski.

<b>CORE COURSE</b>	<b>Code - 23U3RJAVE2</b>	<b>Type: PRACTICAL</b>	<b>No. of Credits</b>	<b>No. of Contact Hrs</b>
<b>SEMESTER 3</b>	<b>Title - RIGGING FOR ANIMATION</b>		<b>4</b>	<b>90</b>

This course will introduce various methods of rigging which is most essential part of 3D animation. Students can develop their technical skills during this course.

### **COURSE OUTCOMES**

- CO 1. Build a detailed character Skelton setup
- CO 2. Make a detailed rig controls
- CO 3. Create a skin weight for the character
- CO 4. Create a muscle system
- CO 5. Analysis of various rigging setups

### **MODULE 1**

Study of skeleton setups, Skeleton creation, Joints and their manipulations, IK and FK, Attribute controls, Rig controls. Constraints, Locking and hiding animation channels, Custom attributes, Driven keys, Connecting various attributes

### **MODULE 2**

Study of expressions and Basic scripting for rigging. Creating and organizing joint hierarchies, Orienting joints, Naming joints, Mirroring joints, IK leg, FK blending, Rotate plane solvers, Creating custom attributes, Spline IK, Human inverse kinematics

### **MODULE 3**

Creating rigs for props and characters. Deformers, Skinning, Interactive/smooth binding, Controlling skin weights, Painting skin weights, Editing skin weights in component editor, Use of blend shapes.

### **MODULE 4**

Understanding the muscle systems, Using capsules, Creating a muscle using muscle builder, Editing muscle parameters, Converting the smooth skin to a muscle system, Sliding weights, Rig a cartoon character applying muscle system. Study and analysis of various rigging setups

### **MODULE 5**

Project work based on the syllabus and parameters of the course under the guidance of supervising faculty.

### **REFERENCE**

1. Animation Methods - Rigging Made Easy: Rig Your First 3D Character in Maya: David Rodriguez
2. Blender Studio Projects: Digital Movie Making: Tony Mullen, Claudio Andaur
3. Maya Character Rigging: Cheryl Cabrera
4. Game Character Developmentwith Maya: Antony Ward
5. The MEL Companion: David Stripinis

<b>CORE COURSE</b>	<b>Code - 23U4RJAVE3</b>	<b>Type: PRACTICAL</b>	<b>No. of Credits</b>	<b>No. of Contact Hrs</b>
<b>SEMESTER 4</b>	<b>Title - STOP MOTION TECHNIQUES</b>		<b>4</b>	<b>90</b>

In this course students are introduced to a wide range of stop motion styles, materials and techniques including clay, object and puppet animation utilizing both tabletop and multi plane setups. Students are encouraged to develop a personal approach while exploring possibilities in character design, armature and set building, lighting, etc.

### **COURSE OUTCOMES**

- CO 1. Create time-lapse video clips
- CO 2. Develop animation skills with the help of real life objects.
- CO 3. Create cutout animation clips
- CO 4. Build the skill in Claymotion movie making
- CO 5. Analysis of various stop motion Animation techniques.

### **MODULE 1**

History of stop motion techniques, Study of famous stop motion works and studios, General workflow of stop motion animation, Script, Storyboard, Character design, Set design, Props creation for stop motion animation. Shooting technique: Camera, Tripods, Lighting, Data storage and editing software

### **MODULE 2**

Study of time lapse and pixilation, Project works in Time lapse and Pixilation techniques

### **MODULE 3**

Study of cutout animation, Sand animation, Project works

### **MODULE 4**

Puppet/clay animation: Types of puppets: Simple clay models, Toys, Maquette, Armature, Simple wire and plasticine puppets and clothed puppets, Preparation of models, Colouring, Puppet costumes

### **MODULE 5**

Post production: Editing and effects, Adding sound tracks and sound effects

### **REFERENCE**

1. The Art of Stop motion animation: Ken A Priebe
2. Stop motion: Craft skills for model Animation: Susannah Shaw
3. Stop motion: Passion, Process and Performance: Barry JC Purves
4. Creating 3D Animation - The Aardaman Book of Film making: Peter Lord & Brian Sibley
5. Stop motion Armature Machining - A Construction Manual: Tom Brierton
6. A Century of Stop Motion Animation from Melies to Aardaman: Ray Harry Hausen
7. Stop motion Filming and Performance: Tom Brierton
8. Stop motion Puppet Sculpting: Tom Brierton

<b>COMP. COURSE</b>	<b>Code - 23U4PCAVE2</b>	<b>Type: PRACTICAL</b>	<b>No. of Credits</b>	<b>No. of Contact Hrs</b>
<b>SEMESTER 4</b>	<b>Title - ACTING FOR ANIMATORS</b>		<b>4</b>	<b>90</b>

This course focuses on acting and directing skills that will strengthen the animator's ability to communicate visually. Students act out their characters and complete drawings of motion studies, expressions and poses.

### **COURSE OUTCOMES**

- CO 1. Explain the pre-scientific and scientific theories of acting
- CO 2. Classify different character types and their motion
- CO 3. Analyze different types of mannerisms
- CO 4. Experiment body acting and gestures
- CO 5. Explain different techniques of acting

### **MODULE 1**

Historical aspects: Pre-scientific and Scientific theories of acting. Aristotelian concept of emotion and acting, James Lange theory, Stanislavsky system (Method Acting). Meyerhold system (Biomechanics), Berthold Brecht (Alienation), Samuel Beckett (Absurd Theatre), Grotowski (Theatre of Poverty)

### **MODULE 2**

Why characters differ? Character types and their motion, Acting as responding to a situation, Heroes and Villains, Domination and Subordination, Primary and Secondary Characters, Anticipation - Action - Result, Exaggeration, Walks: Acting and Attitudes, Tell the story visually, Clear staging for the audience: Keeping it simple and readable

### **MODULE 3**

Emotion and empathy, Emotional involvement, Attaining believability, Development of Drama, Conflict: Good Vs Evil, Character Goals, Mannerisms, Acting with senses, Animating force versus form, Blinks have meaning, Camera itself an actor (Subjective viewpoint)

### **MODULE 4**

Body acting and gestures, Facial expressions, Feeling of the character: Actions that show joy or inner torments, Space and effort, Speech analysis

### **MODULE 5**

Acting for camera, Techniques of acting, Pantomime, Voice-over acting

### **REFERENCE**

1. The Illusion of Life, Disney Animation: Frank Thomas and Ollie Johnston
2. Timing for Animation: Harold Whittaker, John Halas
3. The Animator's Survival Kit: Richard Williams
4. Acting in Animation: A Look at 12 Films: Ed Hooks
5. Action: Acting Lessons for CG Animators: Gibbs and Gibbs

<b>CORE COURSE</b>	<b>Code - 23U4PRAVE7</b>	<b>Type: PRACTICAL</b>	<b>No. of Credits</b>	<b>No. of Contact Hrs</b>
<b>SEMESTER 4</b>	<b>Title - 3D CHARACTER MOTION</b>		<b>4</b>	<b>90</b>

In this course the student will be applying the principles of traditional animation onto 3D computer animation and focuses on acting skills that will strengthen the animator's ability to communicate visually using a 3D software.

### **COURSE OUTCOMES**

- CO 1. Make good poses for the character
- CO 2. Build the concept of passes with a walk cycle
- CO 3. Analysis principles of traditional animation applied to 3D computer animation
- CO 4. Create a Cycling Animation
- CO 5. Build detailed animation for a character

### **MODULE 1**

Terminology for 3D Animation: Timeline, Keyframe, Frame rate, Poses, Line of action, Working with 3d Rigs: Importance of poses, Creation of poses from reference images, Importance of familiarizing with the rig's controllers, Understanding the body mechanics: COG (Center of gravity), Importance of line of action and balance in a pose, What is twinning? Silhouette and its application in creating a perfect pose, Positive and negative spaces

### **MODULE 2**

Setting up for animation using Animation Settings: Tangents, Auto Key, Animation Start/End, Playback Start/End, Playback Speed etc. Concept of pose-to-pose in 3D animation? Animation passes: Pass 1-Blocking, Pass 2-Breakdowns, Pass 3-Inbetweens. Apply the concept of passes with a walk cycle, Clean-up using graph editor. What is a Graph Editor? How to read a Graph Editor? Animation curves, Changing the shape of the animation curves by moving the keys, Tangent menu, Editing tangent handles, Breaking tangents, Healing tangents. What is Gimbal lock and how to fix it? What is a Dope sheet? How to edit keys using dope sheet? What is Polishing pass?

### **MODULE 3**

Principles of traditional animation applied to 3D computer animation: Squash and Stretch, Timing, Anticipation, Staging, Follow Through and Overlapping Action, Straight Ahead Action and Pose-to-Pose Action (Keyframes), Slow In and Out, Arcs, Exaggeration, Secondary action, Appeal

### **MODULE 4**

Cycling Animation: Walk, Run, Sneak cycles, Sad walk, Happy walk, Jump. Using exposure sheets, adjusting timing and spacing with dope sheet. Exercises in weight and mass, Secondary Action, Fast Action.

### **MODULE 5**

Animation constraints. Animating the body: Body language, Action, Reaction, Push and Pull, Lift, Throw. Discuss the use of video references in animation

### **REFERENCE**

1. Principles of Traditional Animation Applied to 3D Computer Animation: John Lasseter
2. The Illusion of Life: Disney Animation: Frank Thomas & Ollie Johnston
3. The Animator's Survival Kit: Richard Williams
4. Digital Character Animation Part 1, 2 & 3: George Maestri
5. Animation: Mechanics of Motion: Chris Webster

<b>COMP. COURSE</b>	<b>Code - 23U4CJAVE3</b>	<b>Type: PRACTICAL</b>	<b>No. of Credits</b>	<b>No. of Contact Hrs</b>
<b>SEMESTER 4</b>	<b>Title - 2D DIGITAL ANIMATION</b>		<b>4</b>	<b>90</b>

### OBJECTIVE

This course provides an overview of 2D character animation using Flash

### COURSE OUTCOMES

- CO 1. Demonstrate the 2D digital Animation Software
- CO 2. Create Library for animation
- CO 3. Create animation in 2D digital
- CO 4. Create animation with sound
- CO 5. Create Animation Bone Tool

### MODULE 1

Flash drawing basics, Sub-selection tool, Bezier tools, Draw a cartoon character in Flash, Convert drawings to symbols, Different types of symbols, Organizing library, Organize character to different symbols, Make a cartoon character using symbols for animation

### MODULE 2

Movie symbol filters, Introduction to timeline, Classic tween, Shape tween, Keyframes, Ease in and Ease out using edit ease graph, Document setup, Layers, Layer properties, Mask layer, Guide layer, Bouncing ball animation using guide layer

### MODULE 3

Basic walk cycle, Run cycle, Jump cycle using cartoon character symbols

### MODULE 4

Import sound to flash, Lip sync cartoon character to dialogue, Do acting and dialogue animation of 10 seconds

### MODULE 5

Import PNG files created in Photoshop for background and character design, Use bone tool to do character animation, Limited walk cycle using bone tool

### REFERENCE

1. Flash Cartoon Animation. Learn from the Pros: Glenn Kirkpatrick, et al
2. Hollywood 2D Digital Animation. The New Flash Production Revolution: Sandro Corsaro, Clifford J Parrott
3. The Art of Cartooning with Flash: Dan Gray, John Kuramoto, Gary Leib

<b>CORE COURSE</b>	<b>Code - 23U4PRAVE8</b>	<b>Type: PRACTICAL</b>	<b>No. of Credits</b>	<b>No. of Contact Hrs</b>
<b>SEMESTER 4</b>	<b>Title - VISUAL EFFECTS I</b>		<b>4</b>	<b>90</b>

### OBJECTIVE

Visual Effects-I is a continuation of “3-2 Introduction to Motion Graphics”. This course introduces the student to advanced tools and compositing techniques.

### COURSE OUTCOMES

- CO 1. Create motion tracking in chroma screen for camera movements
- CO 2. Develop color correction and color grading
- CO 3. Analysis advantages of rotoscoping
- CO 4. Analysis problems faced during tracking
- CO 5. Create a Vfx breakdown

### MODULE 1

Introduction to Visual effects, Difference between visual effects and special effects, Chroma key compositing - Principles of chroma key compositing, Pulling the matte using keyer. Despill operation to avoid spill contamination (hue operation), Garbage mattes to support keying, Colour correction and composite the foreground and background, Chroma shoot, Materials used for chroma screen, Lighting techniques for chroma shoot, Shooting the chroma. Advantages of video cameras with little compression (4:2:2, 4:4:4) for chroma shoots, motion tracking in chroma screen for camera movements

### MODULE 2

Color correction and color grading: Primary and secondary color correction, Correcting and matching shots, Basic color grading, Colour balancing of elements, Vignettes

### MODULE 3

Rotoscoping - Uses and advantages of rotoscoping, Creating rotos with splines, Hierarchical parent and child roto shapes, Interpolation technique, Keyframerotos, Final inspection, Rotoscope motion blur and semi transparency

### MODULE 4

Tracking: Motion tracking, Motion stabilization, Mocha tracking, Camera tracking in After Effects, Set extensions, Problems faced during tracking, Time-stretching, time-remapping and time warp effects

### MODULE 5

How to approach and plan a VFX shot? Other VFX applications - Morphing, Adding atmospheres, Crowd replication, Basics of stereo compositing. What is a Vfx breakdown?

### REFERENCE

1. Compositing Visual Effects: Steve Wright
2. Digital Compositing for Film and Video: Focal Press

<b>Additional Core COURSE</b>	<b>Code - 23U5CRAVE2</b>	<b>Type: THEORY</b>	<b>No. of Credits</b>	<b>No. of Contact Hrs</b>
<b>SEMESTER 5</b>	<b>Title - ENVIRONMENTAL STUDIES AND HUMAN RIGHTS</b>		<b>4</b>	<b>90</b>

### OBJECTIVE

Environmental education helps students to understand how their decisions and actions affect the environment, builds knowledge and skills necessary to address complex environmental issues, as well as ways we can take action to keep our environment healthy and sustainable for the future. It encourages character building and develop positive attitudes and values.

### COURSE OUTCOMES

CO 1. Outline the multidisciplinary nature of environmental studies and the variety of resources

CO 2. Analyze the biodiversity in India and ways of conservation

CO 3. Analyze the causes of sound pollution and create a motion graphic video.

CO 4. Evaluate the role of the media as a bridge between science and public.

CO 5. Illustrate the meaning and concept of Human Rights and create a documentary to communicate Human Rights.

### MODULE1

Multidisciplinary Nature of Environmental Studies: Definition, scope and importance, Need for public awareness

Natural Resources: Renewable and nonrenewable 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 overgrazing, effects of modern agriculture, fertilizer-pesticide problems, water logging, salinity, case studies.

e) Energy Resources: Growing energy needs, renewable and nonrenewable 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. Role of individual in conservation of natural resources, Equitable use of resources for sustainable lifestyles.

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 given ecosystem: Forest ecosystem

### MODULE2

Biodiversity and its Conservation: Introduction, Biogeographical classification of India, Value of biodiversity: consumptive use, productive use, social, ethical, aesthetic and option values, India as a mega-diversity nation, Hotspots of biodiversity, Threats to biodiversity: habitat loss, poaching of wildlife, man-wildlife conflicts, Endangered and endemic species of India



Environmental Pollution: Definition, Causes, effects and control measures of: Air pollution, Water pollution, Soil pollution, Marine pollution, Noise pollution, Thermal pollution, 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.

Social Issues and the Environment: Urban problems related to energy, Water conservation, rain water harvesting, watershed management, Resettlement and rehabilitation 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. 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

### MODULE3

Sound Pollution: Dynamic Range of Hearing- Amplitude, frequency, Threshold of hearing, threshold of pain. Causes of Sound pollution: Industrialization, poor urban planning, social events, transportation, construction activities, household chores. Effect of Sound Pollution: Hearing problem, Health issue, Sleeping disorder, Cardiovascular issues, Trouble communicating, Effect on wildlife. Prevention of sound pollution

### MODULE4

Media and Environment: Media coverage of environmental issues; Agenda setting of environmental risks and its presentation, Role of various media in establishing and maintaining perspectives on environment, Tendencies and limitations of green journalism, Media as bridge between science and public

### MODULE5

Human Rights: An introduction to human rights, meaning, concept and development. Three generations of human rights (Civil and Political Rights; Economic, Social and Cultural Rights)

Human Rights and United Nations: Contributions, main human rights related organs UNESCO, UNICEF, WHO, ILO, Declarations for women and children, Universal declaration of Human Rights.

Human Rights in India: Fundamental rights and Indian constitution, Rights for children and women, Scheduled castes, Scheduled tribes, Other backward castes and minorities

Environment and Human Rights: Right to clean environment and public safety, Issues of industrial pollution, Prevention, Rehabilitation and Safety aspect of new technologies such as chemical and nuclear technologies, Issues of waste disposal, Protection of environment

Conservation of Natural Resources and Human Rights: Reports, Case studies and policy formulation.

Conservation issues of western ghats: mention Gadgil committee report, Kasturirangan report. Over-exploitation of groundwater resources, marine fisheries, sand mining etc.

Internal: Field study

- Visit to a local area to document environmental grassland/hill/mountain

- Visit a local polluted site: Urban/Rural/Industrial/Agricultural Study of common plants, insects, birds Etc.
- Study of simple ecosystem-pond, river, hill slopes Etc.

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## Human Rights

1. Amartya Sen, The Idea Justice, New Delhi: Penguin Books, 2009.
2. Chatrath, K. J.S., (ed.), Education for Human Rights and Democracy (Shimla: Indian Institute of Advanced Studies, 1998)
3. Law Relating to Human Rights, Asia Law House, 2001.
4. Shireesh Pal Singh, Human Rights Education in 21st Century, Discovery Publishing House Pvt. Ltd, New Delhi
5. S. K. Khanna, Children and The Human Rights, Common Wealth Publishers, 1998. 2011.
6. Sudhir Kapoor, Human Rights in 21st Century, Mangal Deep Publications, Jaipur, 2001.
7. United Nations Development Programme, Human Development Report 2004: Cultural Liberty in Today's Diverse World, New Delhi: Oxford University Press, 2004.

<b>CORE COURSE</b>	<b>Code - 23U5RJAVE4</b>	<b>Type: PRACTICAL</b>	<b>No. of Credits</b>	<b>No. of Contact Hrs</b>
<b>SEMESTER 5</b>	<b>Title - VISUAL EFFECTS II</b>		<b>4</b>	<b>108</b>

### OBJECTIVE

Advanced techniques for 3D animation and visual effects development; including 3D Pre-visualization, camera match moving, multi-pass rendering and digital compositing.

### COURSE OUTCOMES

- CO 1. Analysis camera and lighting techniques necessary to complete each shot effectively
- CO 2. Create compositing using CGI
- CO 3. Develop multi-pass rendering workflow to support advanced post and compositing
- CO 4. Analysis node-based or layer-based compositing tools as necessary to assemble the shots and rendered assets
- CO 5. Analysis export camera parameters and motion path to 3D softwares

### MODULE 1

Camera and lighting techniques necessary to complete each shot effectively: Structure of digital images: The Pixel, greyscale and colour images, Four channel images, LDR and HDRI images, Image resolution, Pixel & image aspect ratio, Digitizing image, Bit depth, Compression, File formats, DPI, What is a plate in Vfx? Who is a plate supervisor? Basics of Match moving – 2D tracking process – Automatic tracking

### MODULE 2

Compositing CGI: Foreground image, Background image, Matte, Alpha channel (Premultiplied and non-premultiplied alpha compositing), Gray pixels in matte, Compositing the layers, Blending and colour correcting the layers

### MODULE 3

Multi-pass rendering workflow to support advanced post and compositing: Multipass: Specular pass, Diffuse pass, Occlusion pass, Shadow pass, Reflection pass, Composite different passes, Creative control of passes using image blend modes and colour correction techniques.

### MODULE 4

Node-based or layer-based compositing tools as necessary to assemble the shots and rendered assets: 3D in live action - Principles of camera tracking, Set Extensions, Film live action set, Create photorealistic 3D set in 3D software, High Dynamic Range Imagery (HDRI) for photorealistic lighting and reflection mapping, Composite live action set and 3D set adjusting lighting, Shadows, Alignment and other interactive elements

### MODULE 5

Export camera parameters and motion path to 3D softwares: Color correction and post tools as necessary to uniformly polish the final project, 3D compositing systems, Uses of 3D compositing, 3D compositing scene, Simple geometric shapes, Texture maps, 3D camera, Lights shaders. Import 3D objects from 3D softwares, Composite 2D elements and 3D elements in 3D composite

### REFERENCE

1. Digital Lighting and Rendering (2nd Edition): Jeremy Birn
2. Compositing Visual Effects: Steve Wright
3. Maya Professional Tips and Techniques: Lee Lanier
4. Match moving: The Invisible Art of Camera Tracking: Tim Dobbert

<b>COMP. COURSE</b>	<b>Code - 23U5CJAVE4</b>	<b>Type: PRACTICAL</b>	<b>No. of Credits</b>	<b>No. of Contact Hrs</b>
<b>SEMESTER 5</b>	<b>Title -</b>	<b>MINIATURES FOR LOW BUDGET FILMING</b>	<b>4</b>	<b>90</b>

### OBJECTIVE

This subject is intended to introduce the student to the use of models and miniatures in filmmaking. In a world where CGI seems to always be the first choice, models and miniatures offer realism and immediate feedback in-camera to let you know if you got the shot at a lower budget. This subject will also introduce the student to the rich history of miniatures and its practical application in special effects for film at every level.

### COURSE OUTCOMES

- CO 1. Analyze the use of miniatures in special effects
- CO 2. Build a miniature set
- CO 3. Create low cost visual effects
- CO 4. Explain tips for filming miniature models
- CO 5. Create final composite using compositing software

### MODULE 1

Discuss the use of miniatures in special effects. Application of miniature in film and stop motion animation. History of miniatures in filmmaking. Discuss the utilization of miniatures in film starting from “Le Voyage dans la Lune”, “Close Encounters of the Third Kind”, “Titanic”, “Inception”, “Interstellar” and “The Wolf of Wall Street”. Discuss the advantages of using miniatures over CGI

### MODULE 2

Building a miniature set - Castle, House, Furniture, Trees etc. Making model miniatures using foam, wood, plastic, metal, glue etc. Painting the details on the models. Special effects using scaled models/replica of military tanks, helicopter, UFO, the Taj Mahal etc. and the use of remote controlled vehicles for film. What are Bigatures and what are its advantage? Discuss the possibilities of using 3D printers in creating miniature models using 3D applications

### MODULE 3

What is forced perspective/foreground hanging miniatures? How to create low cost visual effects using forced perspective at the foreground?

### MODULE 4

Tips for filming miniature models - Depth of field, Tilt-shift photography technique, Chroma shot. Camera speed - Problems with scaled models (Gravity doesn't scale proportionately with size), Solution: Shoot it at high speed (overcranking) and play the footage back in slow motion eg. a miniature explosion. Setting up the miniature lights, Atmospheric effects for miniature sets like fog, smoke, wind, lightning etc.

### MODULE 5

Final composite using a compositing softwares for Keying, Garbage matte, Color correction, Color grading, Masks, Tracking, Effects. Adding dynamic simulations like fire, smoke Etc. Sound effects for more realism

### REFERENCE

1. Industrial Light & Magic: Into the Digital Realm: Mark Cotta Vaz
2. Industrial Light & Magic: The Art of Innovation: Pamela Glintenkam
3. Special Effects: The History and Technique: Richard Rickitt
4. Plastic Reality: Special Effects, Technology & the Emergence of 1970s Blockbuster Aesthetics: Julie A. Turnock
5. Techniques of Special Effects of Cinematography: Raymond Fielding

<b>CORE COURSE</b>	<b>Code - 23U5PRAVE9</b>	<b>Type: PRACTICAL</b>	<b>No. of Credits</b>	<b>No. of Contact Hrs</b>
<b>SEMESTER 5</b>	<b>Title - DYNAMIC SIMULATIONS</b>		<b>4</b>	<b>90</b>

### OBJECTIVE

This course is meant to introduce the students to the possibilities of using dynamic simulation in movies and animation projects. It is meant to introduce the student to an animation using mathematical calculations to get a desired effect through simulation.

### COURSE OUTCOMES

- CO 1. Make a dynamic simulation
- CO 2. Build a fluid behavior to particles to create ink or dust-like effect
- CO 3. Create Soft and Rigid Bodies
- CO 4. Analyse fluid effects
- CO 5. Build a combining digital plates with live action footage

### MODULE 1

What is dynamic simulation? Discuss the application of dynamic simulation in animation movies and visual effects, Movement with forces, Different types of forces involved in motion: Applied force, Frictional force, Tension force, Normal force, Air resistance force, Spring force, Gravitational force etc.

### MODULE 2

What is Particle system? Study of Particles: Emitters, Animating particles, Render the particles, Goals, Multiple goals, Particle instancer, nParticle, nParticle collisions, Simulating water using particles, Applying fluid behavior to particles to create ink or dust-like effect

### MODULE 3

Soft and Rigid Bodies: Soft bodies, Rigid bodies, Rigid body constraints, Edit rigid body constraints, Springs, Soft and rigid body limitations, Edit rigid body attributes

### MODULE 4

Maya nucleus, Introduction to nCloth, nCloth constraint, Introduction to nHair, Introduction to fluid effects: Clouds, Fire, Smoke, creating an ocean etc.

### MODULE 5

Using dynamics simulation in animation movies to simulate cloth, water, fire, ropes etc. Combining digital plates with live action footage: Final composite using a compositing softwares

### REFERENCE

1. Digital compositing for Film and Video: Steve Wright.
2. Special Effects: An Oral History: Pascal Pinteau.
3. Special Effects: The History and Technique: Rickit, Richard.
4. Maya Visual Effects: The Innovator's Guide: Eric Kellur.

<b>OPEN COURSE</b>	<b>Code - 23U5OCAVE1</b>	<b>Type: PRACTICAL</b>	<b>No. of Credits</b>	<b>No. of Contact Hrs</b>
<b>SEMESTER 5</b>	<b>Title -</b>	<b>OPEN COURSE: NON-LINEAR EDITING AND COLOUR GRADING</b>	<b>3</b>	<b>72</b>

### OBJECTIVE

The objective of this paper is to provide the basic principles involved in editing visuals and develop a basic skill with the tools and techniques available in standard Non-linear video editing and colour grading.

### COURSE OUTCOMES

- CO 1. Analysis Modern developments - DV.HD Tapeless media HD & LR
- CO 2. Create Shooting script and editing script
- CO 3. Develop time and space concepts
- CO 4. Analysis color Timing
- CO 5. Create Color grading

### MODULE 1

Colour TV and video recording, Origin of television systems NTSC, PAL, SECAM, History of formats of video - B&C, VHS, SVHS, U-matic, Beta etc. Modern developments - DV.HD Tapeless media HD & LR

### MODULE 2

Shooting script and editing script, Cut and shot transition, Match cut, Jump cut, Scene transitions, Editing rushes, Online, Linear AB roll, Logging, Advantages and disadvantages, Editing software, Non-linear softwares. Audible sound, Clapboard synchronization

### MODULE 3

Continuous shots, Concept of time and space, Introduction to video editing, Jump cut and editing principles, Time and space concepts

### MODULE 4

Overview of what is meant by “Color Timing”, History of color manipulation from early hand color techniques, three strip, Hazeltine, early telecine color timing, Where we are today: Digital intermediate (DI), Color, Da Vinci etc. - 4:4:4/4:2:2 etc. 10bit vs. 8bit, resolution etc. DI, Film vs Video latitude, First hands-on session with color. Controlling specified areas of the image through use of secondaries, Shapes vs keys, Tonal ranges, Tracking

### MODULE 5

Color grading, Creating mood for the scene: Tinting footages, Exposure adjustments, Brightness and contrast

### REFERENCE

1. Video Production Handbook: Focal Press
2. HD Cinematography: Focal Press
3. Nonlinear Editing: Bryce Button (Focal Press)
4. Grammar of edit (Second edition): Roy Thompson (Focal Press)
5. Make the Cut: Lori Jane Coleman A.C.E & Diana Friedberg. 6. Grammar of Shot: Roy Thompson (Focal Press)

<b>OPEN COURSE</b>	<b>Code - 23U5OCAVE2</b>	<b>Type: PRACTICAL</b>	<b>No. of Credits</b>	<b>No. of Contact Hrs</b>
<b>SEMESTER 5</b>	<b>Title - OPEN COURSE: AUDIO EDITING</b>		<b>3</b>	<b>72</b>

### OBJECTIVE

The students should have a basic knowledge in audio aspects and basic audio editing techniques.

### COURSE OUTCOMES

- CO 1. Analysis on soundtracks in different films
- CO 2. Develop different methods of recording sound
- CO 3. Create sound design for animation
- CO 4. Analysis basic audio editing techniques and concepts
- CO 5. Analysis digital audio workstation

### MODULE 1

Physiology of sound, Audible sound spectrum, Creative use of sound, Aesthetic applications, Recognizing realistic sound for artistic fulfillment, Discussion on soundtracks in different films.

### MODULE 2

Different methods of recording sound: Recording sound in controlled situation, Playback, Prerecording, Dubbing, Post synchronization, Voice recording, Microphones for location recording, Microphone for studio recordings

### MODULE 3

Sound design for animation, Historical voice talent in animation, Casting voice talent, Working with voice actors, Recording dialog, Synchronization, The role of music in animation, Functions of SFX in animation, Discussion on soundtracks in different animation films.

### MODULE 4

Basic audio editing techniques and concepts, Conversion of files from one format to another, mono to stereo conversions, Audio special effects, Audio plug-ins.

### MODULE 5

Introduction to digital audio workstation: Midi and digital sound, Basic mixing techniques, Introduction to mastering, Delivery formats.

### REFERENCE

1. Practical recording Techniques: Bartlett, Bruce and Jenny Bartlett
2. Audio and Video Systems: R. G. Gupta
3. Sound: Efron
4. Acoustics: Mackenzie
5. From Microphone to Ear: G. Slot
6. Designing for Animation: Robin Beauchamp

<b>OPEN COURSE</b>	<b>Code - 23U5OCAVE3</b>	<b>Type: PRACTICAL</b>	<b>No. of Credits</b>	<b>No. of Contact Hrs</b>
<b>SEMESTER 5</b>	<b>Title -</b>	<b>OPEN COURSE: ARCHITECTURAL VISUALIZATION</b>	<b>3</b>	<b>72</b>

### OBJECTIVE

This course covers the popular 3ds Max program for architecture modelling. This gives the student an opportunity to explore the possibilities in 3D architectural visualization.

### COURSE OUTCOMES

- CO 1. Build a Stairs, Windows, Doors
- CO 2. Analyse Furniture modeling
- CO 3. Create a detailed texturing for furniture
- CO 4. Analysis the advanced lighting techniques
- CO 5. Create a camera walk through of the finished architecture model

### MODULE 1

3ds max Interface, Modelling concepts - Spline based modelling, Mesh modelling, Parametric modelling. Spline sub objects, Splines to 3D, Cross section modifier, Surface modifier, Extrude, Bevel, Lathe, Loft, Weld vertices. Introduction to modifiers. Polygons: Editable poly sub objects, Edit poly modifier, Slice plane, Cut tool, Parametric deformers, AEC extended: Stairs, Windows, Doors, Foliage Etc.

### MODULE 2

Furniture modeling using polygons: Sofa, Chair, Tables, Bed, Shelf, Curtain, Towels, Computer chair etc.

### MODULE 3

Introduction to texturing, Standard materials and shades, creating uniform textures, UV map, Unwrap UV, Different maps, Editing UV coordinates. Arch & Design materials, mental ray ProMaterials. Applying texture on furniture, floor, glass and metal materials. Multi Sub Object Materials for furniture, doors, windows Etc.

### MODULE 4

Introduction to digital lighting, Light theory, Creating three-point lighting system, Exposure Controls, Basic lights and photometric lights, Daylight system. Advanced lighting - Selecting advanced lighting, Enabling light tracing, Lighting for radiosity, Local and global lighting settings, Advanced lighting materials, Rendering with mental ray, Mental ray lights and shadows understanding caustics and photons, Controlling indirect illumination. Camera - Controlling camera, Aiming camera, Lens settings, Field of view, Environment range, Clipping planes, Depth of field, Motion blur

### MODULE 5

Animation: Keyframe animation, Animation along trajectories, Modify animation using function curves, Parameter Curve Out-of-Range. How to import architectural plan (.DWG format) and model the structure, Create a camera walk through of the finished architecture model. Rendering tools, Completing a project from modeling through rendering.

### REFERENCE

1. Realistic Architectural Visualization with 3ds Max & Mental Ray: Jamie Cardoso & Roger Cusson
2. Essential CG Lighting Techniques with 3ds Max: Darren Brooker



<b>CORE COURSE</b>	<b>Code - 23U6INAVE1</b>	<b>Type: OJT</b>	<b>No. of Credits</b>	<b>No. of Contact Hrs</b>
<b>SEMESTER 6</b>	<b>Title - INTERNSHIP</b>		<b>2</b>	

### OBJECTIVE

To acquire practical industry-based experience. Internship is on the job training to assimilate the professionalism in a career. Internships offer students a period of practical experience in the industry relating to their field of study. The students will have to undergo an Internship at an animation studio or a post-production visual effect studio as per the field of specialization of the candidate for a month either at the end of the fifth semester or the beginning of the sixth semester.

The students would prepare individual reports after the Internship and the same should be attested by the organization under which the student did the internship. The students' comprehensive report will be submitted to the HOD for evaluation. A faculty member will monitor the students during the internship. The internships would have a credit of 1 with 100 marks and the marks would be submitted to the university at the end of the six semesters.

### COURSE OUTCOMES

- CO 1. Develop practical industry based experience.
- CO 2. Develop professionalism and interact with other individuals
- CO 3. Adapt to the challenges of the industry.

<b>CORE COURSE</b>	<b>Code - 23U6RJAVE5</b>	<b>Type: PROJECT</b>	<b>No. of Credits</b>	<b>No. of Contact Hrs</b>
<b>SEMESTER 6</b>	<b>Title - ANIMATION PROJECT</b>		<b>4</b>	<b>108</b>

### COURSE OUTCOMES

CO 1. Build Concepts and develop story

CO 2. Create Script and Screenplay, Animatics & Storyboard

CO 3. Analyze characteristics of well-designed and executed animation.

CO 4. Infer the industry as a whole by executing all components of development, pre-production, production and post-production planning

CO 5. Demonstrate the skills through final output.

Students should create an animation of minimum one minute to a maximum three and half minute excluding titles using any of the following methods for their animation project,

- Full 2D Animation
- Full 3D Animation
- Full Stop-motion Animation
- 2D Animation + 3D Animation
- 3D Animation + Stop-motion Animation
- 2D Animation + Stop-motion Animation
- 2D Animation + Visual Effects
- 3D Animation + Visual Effects
- Stop-motion Animation + Visual Effects
- 2D Animation + 3D Animation + Visual Effects
- 3D Animation + Stop-motion Animation + Visual Effects
- 2D Animation + Stop-motion Animation + Visual Effects
- Live Action + Animation

Project should be worked out through various production stages after the final approval by the supervising faculty. Students have to complete the final project within the given time period. Student should keep all the important paper works (script, storyboard and character designs) along with them. Viva Voce is part of the examination.

<b>CORE COURSE</b>	<b>Code - 23U6RJAVE6</b>	<b>Type: PROJECT</b>	<b>No. of Credits</b>	<b>No. of Contact Hrs</b>
<b>SEMESTER 6</b>	<b>Title - VISUAL EFFECTS PROJECT</b>		<b>4</b>	<b>108</b>

### **COURSE OUTCOMES**

CO 1. Develop an innovative body of work based on the skills and knowledge

CO 2. Create a final presentation project

CO 3. Improve their specific areas of expertise

Students develop an innovative body of work making use of the skills and knowledge acquired during the previous courses. This guided project culminates into a final presentation accompanied by a process book. Working closely with the faculty, students define specific production goals to explore or complete an animation project of their choosing. Emphasis is on the conceptual, aesthetic and technical processes. Students are encouraged to share their specific areas of expertise while producing individually directed projects.

<b>COMP. COURSE</b>	<b>Code - 23U6PCAVE3</b>	<b>Type: PRACTICAL</b>	<b>No. of Credits</b>	<b>No. of Contact Hrs</b>
<b>SEMESTER 6</b>	<b>Title - 3D LIGHTING AND RENDERING</b>		<b>4</b>	<b>90</b>

This course trains students in advanced 3D lighting and rendering

### **COURSE OUTCOMES**

- CO 1. Analysis Mental ray/Arnold/V-ray materials
- CO 2. Analysis Scientific light theories
- CO 3. Make a studio lighting setup
- CO 4. Create a different type of rendering method
- CO 5. Analysis pass rendering techniques

### **MODULE 1**

Mental ray/Arnold/V-ray material and its application. DGS material, Diffuse, Glossy and Specular attributes, Dielectric shaders/materials

### **MODULE 2**

Scientific light theories, Artistic theories, Digital lighting theory, Working with Maya lights, Light types and attributes

### **MODULE 3**

3-point lighting concepts, Computer generated imagery, Effective use of key light, fill light, back light. HDRI Lighting, Lighting an interior scene, Daylight, Artificial lighting, Working with shadows, Depth map shadows, Raytraced shadows. Three-point lighting: Lighting a character. Mood lighting, Lighting surfaces: Faking Radiosity, Expression based lighting

### **MODULE 4**

Software rendering, Setting render globals, Creating physical fogs, Paint effects. Render passes, Batch rendering, Interactive photorealistic rendering. Hardware rendering, Using the timeline, Rendering a sequence

### **MODULE 5**

Render wrangler, Preparing render sequences, Render diagnostics, Optimizing scene size, Baking simulations, Batch rendering, Command line rendering, Render management solutions, LOD, Optimizing lights, Shadows, Ray tracing

### **REFERENCE**

1. Advanced Maya Texturing and Lighting with CDROM: Lee Lanier, Wiley Publishing
2. Texturing and Modeling: A Procedural Approach: David S. Ebert

CORE COURSE	Code - <b>23U6EJAVE1</b> Type: <b>PRACTICAL</b>	No. of Credits	No. of Contact Hrs
<b>SEMESTER 6</b>	<b>CHOICE BASED COURSES</b> Title - <b>(ELECTIVE): ADVANCED ANIMATION IN FLASH</b>	<b>3</b>	<b>90</b>

This course is a continuation of 4-4 2D Animation in Flash and is intended for students who would like to specialize in Flash animation. Students will explore various production skills needed for work in digital 2D animation production.

### COURSE OUTCOMES

- CO 1. Create Concept, Script and Storyboard
- CO 2. Create Compositing in flash
- CO 3. Create Camera animation
- CO 4. Create Lighting in Flash
- CO 5. Create Special Effects

### MODULE 1

Anatomy of story, Casting the characters, Exaggerating personality, Adopting stereotypes. Flash animation: Setting up a good FLA, Frame by frame animation and animating with tweens

### MODULE 2

Composing the space in Flash: The rule of thirds, Line, Circular, Triangle compositions. Contrasting scales, Color dominance, Color as mood, Color contrast, Perspective, Relative size, Light and shadow for depth perception, Depth of field and focusing attention using blur filter, 3D transform

### MODULE 3

Panning the camera, Distorting perspective for camera tilt (Distort the corners, wrap the middle), Zip pan, Zoom in and Zoom out, 3D translation tool and tween to create a truck in camera, Create multiplane effect in Flash, 3D rotation tool with attached movie clips to simulate 3d space

### MODULE 4

Create lighting in flash: Light source, Light fall off, Shadow, Intensity, Soft light, Hard light, Key light, Fill light, Rim light, Front lighting, Side lighting, Rim lighting, Three-point lighting, High key light, Low key light, Mood lighting, Skew tool for casting shadows for character animation, Animated mask for light effect

### MODULE 5

Creating special effects in Flash such as rain, snowfall, wind, flag animation, lens flare, smoke effect etc. Sound, Editing sound, Lip sync, Flash ink and paint, Rendering a movie

### REFERENCE

1. Flash Cartoon Animation: Learn from the Pros: Glenn Kirpatrick and Kevin Peety
2. The Art of Flash Animation: Creative Cartooning: Mark Stephen Smith
3. Flash + After effects: Add Broadcast feature to Good Flash Designs: Chris Jackson
4. The Animator's Guide to 2D Computer Animation: Hedley Griffin
5. How to Make Animated Films: Tony White

<b>CORE COURSE</b>	Code - <b>23U6EJAVE2</b> Type: <b>PRACTICAL</b>	<b>No. of Credits</b>	<b>No. of Contact Hrs</b>
<b>SEMESTER 6</b>	<b>CHOICE BASED COURSES</b> Title - <b>(ELECTIVE): METHODS OF SHOOTING FOR GREEN SCREEN</b>	<b>3</b>	<b>90</b>

### OBJECTIVE

The students should gain detailed knowledge with regard to shooting within a studio for green screen.

### COURSE OUTCOMES

- CO 1. Explain the basics of visual storytelling
- CO 2. Analyze the components of a studio
- CO 3. Evaluate modern day travelling mattes and how they works
- CO 4. Assess basic setups for shooting green screen
- CO 5. Develop a project work based on the syllabus

### MODULE 1

Basics of visual storytelling, Camera angles and movements, Use of light meter, Filters and flashes - Basic lighting techniques, Color temperature

### MODULE 2

Components of a studio, Studio floor, Shooting with a single camera, Prepare a floor chart with flow of action, Movement, Camera set ups etc. Multi camera setup and studio lighting, Discuss motion control rigs and its application

### MODULE 3

Modern day travelling mattes and how they works: Luma-Key matte, Chroma-key matte, Difference mattes, Blue Screen matte, Green Screen mattes, etc. Green Vs. Blue screen, shadow matting, Poorly lit green screens and its problems, Pulling the Mattes, Different types of keyers

### MODULE 4

Basic setups for shooting green screen: Lights: Key, Fill, Back, Side spill suppressor light, Matte keying fabrics and materials, Floodlights an umbrella lights, Lighting the backing, Lighting the talent, creating tracking markers for motion tracking, White balancing the camera before shooting, Shooting with HD camera. Matching with background objects, Interacting with the background and objects

### MODULE 5

Project: Students should do two projects by shooting green screen and composite it with a background.

### REFERENCE

1. Advanced Photography: M.T. Lang Ford
2. Basic Motion Picture Technology: Happe
3. Professional Lighting Hand Book: Carlson
4. The Green Screen Handbook: Jeff Foster
5. The Visual Effects Arsenal: Bill Byrne
6. Green Screen Made Easy: Jeremy Hanke, Michele Yamazaki

<b>CORE COURSE</b>	<b>Code - 23U6EJAVE3</b>	<b>Type: PRACTICAL</b>	<b>No. of Credits</b>	<b>No. of Contact Hrs</b>
<b>SEMESTER 6</b>	<b>Title - CHOICE BASED COURSES (ELECTIVE):</b>		<b>3</b>	<b>90</b>
	<b>MATCHMOVING TECHNIQUES</b>			

### OBJECTIVE

By exploring concepts in 3D camera match move of live action scenes, as well as rigid object tracking, students experience tracking 3D shots by hand and by applying the use of camera tracking softwares. Students analyze data and create seamless camera connections between live action shots and 3D computer generated objects.

### COURSE OUTCOMES

CO 1. Explain the history of tracking

CO 2. Analyze 2D tracking process

CO 3. Evaluate the solution for a camera tracking

CO 4. Analyze data and create seamless camera connections between live action shots and 3D computer generated objects.

CO 5. Develop a project work based on the syllabus

### MODULE 1

History of tracking: Where did Matchmoving come from, who invented it, where was it first used? What is matchmoving based upon? - Rotoscoping and Photogrammetry. What is Matchmoving? How does it work? Camera tracking softwares, Two methods of defining the camera motion: Manual and Automatic

### MODULE 2

2D tracking process, Track placements, Plate issues

### MODULE 3

Working method of film cameras, Importance of gathering data to recreate elements of the live footage in 3D, Good calibration process, Calibrating cameras, Evaluating the solution for a camera tracking, Calibrations and camera moves, Setting up a coordinate system supervised tracking, Importance of lighting in shooting

### MODULE 4

Automatic tracking, Fitting the camera and set, Adding test objects, Getting right information from sets, Creating 3D coordinate frame, Export camera parameters and motion path to 3D software. Import point cloud (track points) and camera data to 3D software, Use point cloud as a reference point for placing 3D objects, Combining digital plates with live action plates

### MODULE 5

Project work based on the syllabus and parameters of the course under the guidance of supervising faculty.

### REFERENCE

1. Match moving: The Invisible Art of Camera Tracking: Tim Dobbert
2. The Art and Science of Digital Compositing: Ron Brinkmaan
3. The Filmmaker's Handbook: Steven Ascher and Edward Pincus

<b>COMP. COURSE</b>	<b>Code - 23U6CJAVE5</b>	<b>Type: PRACTICAL</b>	<b>No. of Credits</b>	<b>No. of Contact Hrs</b>
<b>SEMESTER 6</b>	<b>Title - DEMO REEL PRESENTATION</b>		<b>4</b>	<b>54</b>

### OBJECTIVES

Demo reel presentation is intended to assist the student to prepare for a job interview. Student will have to present his/her demo reel which is a culmination of their original works or of their area of expertise. The faculty will share tips and strategies to create an engaging demo reel and to face a job interview successfully. The demo reel should be in video format or a website or in print format. The student is free to use his/her individual creative style to present the final demo reel.

### COURSE OUTCOMES

CO 1. Take Part in an interview

CO 2. Create a successful demo reel

CO 3. Discuss the importance of self-promotion

### MODULE 1

Preparing for an Interview: Research the organization, compare your skills and qualifications to the job requirements, prepare responses, Plan what to wear, Plan what to bring, Pay attention to nonverbal communication, Follow up. How to write a successful media CV?

### MODULE 2

What is a demo reel? Tips to create a successful demo reel: Keep it short, Make it specific, Choose a style (Collage or samples), Put your best work first, Your work only, Slate it - Include contact details at the start or the end of the demo reel, Showcase your involvement, Highlight impressive clients, Emphasize technical ability, Before and after shots of their work, Be mindful of aspect ratios, Say "No" to copyrighted music, Cut to the beat, Don't repeat footage, Quality control, Online all the time, DVDs for delivery, Label with contact info, Active and accessible, Show your personality, Ask a critic

### MODULE 3

Discuss the importance of self-promotion. Getting visibility: YouTube, Video, Social Media, Blogs, Web page, Business cards, Job portals Etc.

### REFERENCE

1. Interview: How to Master Interviews and Stand Out Among Your Peers: Stefan Anderson
2. Success in Interview: Anand Ganguly

### WEBSITE REFERENCE

<https://www.premiumbeat.com/blog/top-20-tips-for-creating-a-successful-demo-reel/>

<https://careerservices.princeton.edu/undergraduate-students/interviews-offers/preparinginterviews>

<https://www.kent.ac.uk/careers/cv/mediacv.htm>

<https://www.bbc.co.uk/academy/production/article/art20130702112136472>