FIRST SEMESTER 2023-2024

Course Handout Part II

Date: 11/08/2023

In addition to part I (General Handout for all courses appended to the time table) this portion gives further specific details regarding the course.

Course No. : IS F311

Course Title : Computer Graphics Instructor-in-charge : Prof. Tathagata Ray

Scope and Objective of the Course

The course mainly covers Graphics I/O hardware, Generation of dot, lines, conics, curves, surfaces & polygons; Filling closed regions, 2D & 3D Graphics & Transformations, Windowing, Viewing & Clipping, Efficient algorithms, Solid Modeling, Color Models & Dithering, Visible surface detection, Rendering, Animation Techniques, Advanced modeling and Future directions.

The objective of the course is to

- Able to compute all the transformations used in a graphics pipeline.
- Able to compute all the required algorithms used in every phase of the graphics pipeline.
- Able to implement it in OpenGL.
- Able to implement and compute basic geometric modeling constructs.
- Able to calculate lighting models.

Text Book

T1: James D. Foley, A. Van Dam, S.K. Feiner, and J.F. Hughes, Computer Graphics: Principles and Practice in C, 2nd edition Pearson education.

Reference Books

R1: Sumanta Guha, "Computer Graphics through OpenGL, From Theory to experiments", 3rd Ed., CRC Press, 2019

R2: Rogers B., "Mathematical elements of Computer Graphics", Tata McGraw Hill, 2002.

R3: D. Hearn and M.P. Baker, Computer Graphics: C Version, Pearson Education, 2002.

Course Plan

| L.No. | Learning | Topics to be covered | Reference |
|-------|----------|----------------------|-----------|
|-------|----------|----------------------|-----------|

| Oterview of graphics systems - What, Why & Whete about Graphics, Hardware & Software, Input & Output Technology, Mathematical Complexity involved - Demonstration through some examples Ch. 1. Ch. 1. Ch. 1. Ch. 1. Ch. 2. Ch. 1. Ch. 2. Ch. 1. Ch. 2. Ch. | | Objectives | | to Text | | |
|--|-------|---------------------|--|-------------|--|--|
| Applications I/O Devices Input & Output Technology, Mathematical complexity involved - Demonstration through some examples 04-07 Fast algorithms to draw Lines, Conic, And filled regions 08-10 Concepts of 3D and OpenGL 11-13 How & why to manipulate objects 11-14 Mapping 2D from World to Screen and Foreshortening 11-20 Mapping 3D from World to Screen and Foreshortening 11-20 Drawing Smooth Curves & Surfaces 21-25 Drawing Smooth Curves & Surfaces 26-28 Representation of Solid Objects 29-33 Detection of Hidden portions 34-37 Perception of light and Color, Dithering Dithering Dithering Dithering Martix) Input & Output Technology, Mathematical complexity involved - Demonstration through some examples Input & Output Technology, Mathematical Chephology. Chephology. Chephology. Chephology. And Chephology. Chephology. Chephology. Chephology. And Eaglerithms for Drawing 2D Troe Raster Graphics Algorithms for Drawing 2D Troe Rational Cubic Polynomial Curves & Parallel Projection, Clipping in 3D (Perspective & Parallel Projection, Clipping against a Canonical View Volume, Clipping in Homogeneous Coordinates, and Mapping into a View-port 21-25 Drawing Smooth Curves & Surfaces Rational Cubic Polynomial Curves & R1: Ch 17, Ch 18.2 26-28 Representation of Solid Modeling (Representations, Operations, T1: Ch 12 29-33 Detection of Hidden Drations Ray Tracing) and Hidden Line elimination 34-37 Perception of light and Color, Models, Color Conversion & Interpolation, Dithering Matrix) 38-40 How to Shade | 01-03 | Definition | | | | |
| I/O Devices complexity involved - Demonstration through some examples | | Why to study | | Ch 4.4 | | |
| some examples 04-07 Fast algorithms to draw Lines, Conic, And filled regions 08-10 Concepts of 3D and OpenGL 11-13 How & why to manipulate objects 14-16 Mapping 2D from World to Screen World to Screen, and Foreshortening 17-20 Mapping 3D from World to Screen, and Foreshortening 21-25 Drawing Smooth Curves & Surfaces and Mapping into a View-port 21-25 Drawing Smooth Curves & Surfaces and Mapping into a View-port 21-28 Representation of Solid Modeling (Representations, Operations, Solid Modeling (Representations, Operations, Procedure), and Foreshortening 22-33 Detection of Hidden portions 34-37 Perception of light and Color, Dithering Matrix) 38-40 How to shade Sentar Graphics Algorithms for Drawing 2D Til: Ch 3.1-3.1-3.1-3.1-3.1-3.1-3.1-3.1-3.1-3.1- | | Applications | Input & Output Technology, Mathematical | R1: Ch 1, | | |
| Raster Graphics Algorithms for Drawing 2D dipolects: Lines, Circle, Ellipse, Parabola, And filled regions Hyperbola, Polygon & Filled Closed Objects R1: Ch 14 | | I/O Devices | complexity involved - Demonstration through | Ch2 | | |
| draw Lines, Conic, And filled regions And filled regions | | | | | | |
| And filled regions Hyperbola, Polygon & Filled Closed Objects R1: Ch 14 08-10 Concepts of 3D and OpenGL 11-13 How & why to manipulate objects Fransformations 12-14-16 Mapping 2D from World to Screen and Foreshortening World to Screen, and Foreshortening 21-25 Drawing Smooth Curves & Surfaces 21-25 Drawing Smooth Curves & Surfaces 21-25 Drawing Smooth Curves & Surfaces 21-25 Drawing Smooth Curves & Surfaces Sulfaces Representation of Solid Objects 22-28 Representation of Solid Modeling (Representations, Operations, Hidden portions Ray Tracing) and Hidden Line elimination 34-37 Perception of light and Color, Models, Color Conversion & Interpolation, Dithering Mand Foreshortening Matrix) 10-8-10 How to shade Rendering (Models, Physics, Shading Polygons & T1: Ch 16 | 04-07 | _ | | | | |
| 08-10 Concepts of 3D and OpenGL 11-13 How & why to manipulate objects 14-16 Mapping 2D from World to Screen 17-20 Mapping 3D from World to Screen, and Foreshortening 17-20 Drawing Smooth Curves & Surfaces Surfaces Surfaces 26-28 Representation of Solid Objects 26-28 Representation of Solid Objects 27-3 Detection of Hidden portions 34-37 Perception of light and Colors, Dithering Surfaces Reflection, Projection and Composite Transformations Introduction to 3D- Graphics & 3D Coordinate R1: Ch 2, 3 Geometry and Introduction of OpenGL 21-25 Surfaces Reflection, Projection and Composite Transformations Notation, Projection and Composite Transformations T1: Ch 5.5-5.8 R1: Ch 4, Ch 5 T1: Ch 5.4 Ch 3.11-3.12 R1: Ch 14 T1: Ch 5.4 Ch 3.11-3.12 R1: Ch 14 T1: Ch 6 R1: Ch 4 R1: Ch 14 T1: Ch 6 R1: Ch 14 T1: Ch 14 R1: Ch 14 T1: Ch 16 R1: Ch 17 Ch 18.2 T1: Ch 11 R1: Ch 17 Ch 18.2 T1: Ch 10 T1: Ch 10 T1: Ch 10 T1: Ch 13 R1: Ch 14 R1: Ch 17 Ch 18.2 T1: Ch 10 T1: Ch 13 R1: Ch 10 T1: Ch 13 R1: Ch 11 Dithering Matrix) T1: Ch 16 | | | " | | | |
| OpenGL 11-13 How & why to manipulate objects 12-14-16 Mapping 2D from World to Screen World to Screen and Foreshortening 17-20 Drawing Smooth Curves & Surfaces 21-25 Drawing Smooth Curves & Surfaces 22-28 Representation of Solid Objects 26-28 Representation of Solid Objects 29-33 Detection of Hidden portions 34-37 Perception of light and Colors 14-16 How & why to manipulate objects Solid Models, Color Conversion & Interpolation, Dithering 38-40 How to shade Geometry and Introduction of OpenGL 12 Day 3D Scaling, Translation, Rotation, Shear, Reflection, Projection and Composite T1: Ch 5.1 21-25 Mapping 2D from World to Screen, and Foreshortening of Parametric Line Methods) Viewing & Clipping in 2D (Cohen's and Parametric Line Methods) T1: Ch 5.4 Ch 3.11-3.12 R1: Ch 14 T1: Ch 6 R1: Ch 4 R1: Ch 4 R1: Ch 17 Ch 18.2 T1: Ch 12 R1: Ch 10 T1: Ch 12 R1: Ch 10 T1: Ch 13 R1: Ch 11 R1: Ch 11 R1: Ch 15 R1: Ch 10 T1: Ch 15 R1: Ch 16 | | And filled regions | Hyperbola, Polygon & Filled Closed Objects | R1: Ch 14 | | |
| 11-13 How & why to manipulate objects Reflection, Projection and Composite Transformations 14-16 Mapping 2D from World to Screen World to Screen and Foreshortening Surfaces Representation of Solid Objects 21-25 Drawing Smooth Curves & Surfaces Solid Modeling (Representations, Operations, Solid Objects) 26-28 Representation of Solid Objects 29-33 Detection of Hidden portions 34-37 Perception of light and Color, Dithering 17-10 Dithering 20 Cohen's and Charles, Projection, Clipping in 2D (Cohen's and Charles, Ch 5.4 Ch 3.11-3.12 R1: Ch 14 Ch 3.11-3.12 R1: Ch 15 R1: Ch 15 R1: Ch 15 R1: Ch 15 R2 Ch 3.11-3.12 R1: Ch 15 R1: Ch 15 R2 Ch 3.11-3.12 R1: Ch 15 R1: Ch 15 R2 Ch 3.11-3.12 R1: Ch 15 R1: Ch 15 R2 Ch 3.11-3.12 R1: Ch 15 | 08-10 | Concepts of 3D and | Introduction to 3D- Graphics & 3D Coordinate | R1: Ch 2, 3 | | |
| manipulate objects Reflection, Projection and Composite Transformations Transf | | OpenGL | Geometry and Introduction of OpenGL | | | |
| Transformations T1: Ch 5.5-5.8 R1: Ch 4, Ch 5 14-16 Mapping 2D from World to Screen World to Screen, and Foreshortening T1: Ch 5.4 Volume, Clipping in 3D (Perspective & Parallel projection, Clipping against a Canonical View Volume, Clipping in Homogeneous Coordinates, and Mapping into a View-port T1: Ch 14 T1: Ch 5.4 Ch 3.11-3.12 R1: Ch 14 T1: Ch 6 R1: Ch 4 Volume, Clipping in Homogeneous Coordinates, and Mapping into a View-port T1: Ch 11 Curves & Surfaces Surfaces Rational Cubic Polynomial Curves & Surfaces Rational Cubic Polynomial Curves & Solid Objects Geometry, and Interface) T1: Ch 11 R1: Ch 17 Ch 18.2 T1: Ch 10 T1: Ch 11 R1: Ch 17 Ch 18.2 T1: Ch 10 T1: Ch 11 R1: Ch 17 Ch 18.2 T1: Ch 10 T1: Ch 11 R1: Ch 12 R1: Ch 14 R1: Ch 14 R1: Ch 11 R1: Ch 11 R1: Ch 15 R1: Ch 10 R1: Ch 10 R1: Ch 11 R1: Ch 15 R1: Ch 10 R1: Ch 11 R1: Ch 15 R1: Ch 10 R1: Ch 11 R1: Ch 15 R1: Ch 10 R1: Ch 11 R1: Ch 15 R1: Ch 10 R1: Ch 11 R1: Ch 15 R1: Ch 10 R1: Ch 11 R1: Ch 15 R1: Ch 16 R1: Ch 14 R1: Ch 16 R1: Ch 14 R1: Ch 15 R1: Ch 14 R1: | 11-13 | | | | | |
| 14-16 Mapping 2D from World to Screen Parametric Line Methods) 17-20 Mapping 3D from World to Screen, and Foreshortening Projection, Clipping in 3D (Perspective & Parallel projection, Clipping against a Canonical View Volume, Clipping in Homogeneous Coordinates, and Mapping into a View-port 21-25 Drawing Smooth Curves & Surfaces Surfaces Rational Cubic Polynomial Curves & T1: Ch 11 Surfaces Rational Cubic Polynomial Curves & Ch 18.2 26-28 Representation of Solid Modeling (Representations, Operations, Ch 18.2 26-28 Representation of Solid Modeling (Representations, Operations, Hidden portions Ray Tracing) and Hidden Line elimination 34-37 Perception of light and Color, Dithering Matrix) 38-40 How to shade Rendering (Models, Physics, Shading Polygons & T1: Ch 16 | | manipulate objects | | | | |
| 14-16 Mapping 2D from World to Screen Parametric Line Methods) 17-20 Mapping 3D from World to Screen, and Foreshortening Projection, Clipping in 3D (Perspective & Parallel projection, Clipping against a Canonical View Volume, Clipping in Homogeneous Coordinates, and Mapping into a View-port 21-25 Drawing Smooth Curves & Surfaces Surfaces Surfaces Rational Cubic Polynomial Curves & T1: Ch 11 Surfaces Rational Cubic Polynomial Curves & Ch 18.2 26-28 Representation of Solid Modeling (Representations, Operations, Ch 18.2 29-33 Detection of Hidden portions Ray Tracing) and Hidden Line elimination 34-37 Perception of light and Color, Dithering Matrix) 38-40 How to shade Rendering (Models, Physics, Shading Polygons & T1: Ch 16 | | | Transformations | | | |
| 14-16 Mapping 2D from World to Screen Parametric Line Methods) 17-20 Mapping 3D from World to Screen, and Foreshortening Surfaces Surfaces Rational Cubic Polynomial Curves & Surfaces Rational Cubic Polynomial Curves & R1: Ch 14 17-25 R1: Ch 14 17-26 Drawing Smooth Curves & Surfaces Solid Modeling (Representations, Operations, Ch 18.2) 21-25 Representation of Solid Modeling (Representations, Operations, Ch 18.2) 26-28 Representation of Solid Modeling (Representations, Operations, Ch 18.2) 29-33 Detection of Hidden portions Ray Tracing) and Hidden Line elimination 34-37 Perception of light and Color, Dithering Matrix) 38-40 How to shade Rendering (Models, Physics, Shading Polygons & T1: Ch 16 | | | | | | |
| 14-16 Mapping 2D from World to Screen Parametric Line Methods) T1: Ch 5.4 Ch 3.11-3.12 R1: Ch 14 17-20 Mapping 3D from World to Screen, and Foreshortening Viewing & Clipping in 3D (Perspective & Parallel projection, Clipping against a Canonical View Volume, Clipping in Homogeneous Coordinates, and Mapping into a View-port R1: Ch 4 21-25 Drawing Smooth Curves & Surfaces Surfaces Rational Cubic Polynomial Curves & R1: Ch 17, Quadric Surfaces) Ch 18.2 26-28 Representation of Solid Objects Solid Modeling (Representations, Operations, Ch 18.2 29-33 Detection of Hidden portions Ray Tracing) and Hidden Line elimination T1: Ch 15 Ray Tracing Models, Color Conversion & Interpolation, Dithering Matrix Dithering Matrix 38-40 How to shade Rendering (Models, Physics, Shading Polygons & T1: Ch 16 T1: Ch 5.4 Ch 3.11-3.12 R1: Ch 6 R1: Ch 14 R1: Ch 15 R1: Ch 15 R1: Ch 16 R2: Ch 16 Ch 18.2 R1: Ch 17 Ch 18.2 R1: Ch 10 Ch 18.2 R1: Ch 11 Ch 18.2 R1: Ch 10 Ch 18.2 R1: Ch 11 Ch 18.2 R1: Ch 11 Ch 19.4 R1: Ch 12 Ch 19.5 R1: Ch 12 | | | | | | |
| World to Screen Parametric Line Methods) Ch 3.11-3.12 R1: Ch 14 17-20 Mapping 3D from World to Screen, and Foreshortening Ch 3.11-3.12 R1: Ch 14 T1: Ch 6 R1: Ch 4 T1: Ch 6 R1: Ch 4 Volume, Clipping against a Canonical View Volume, Clipping in Homogeneous Coordinates, and Mapping into a View-port T1: Ch 11 Curves & Surfaces Surfaces Surfaces Rational Cubic Polynomial Curves & T1: Ch 17, Quadric Surfaces) R1: Ch 17 R1: Ch 11 R1: Ch 11 R1: Ch 17 R1: Ch 11 R1: Ch 17 R1: Ch 15 R1: Ch 17 R1: Ch 15 R1: Ch 17 R1: Ch 15 R1: Ch 17 R1: Ch 16 T1: Ch 18 R1: Ch 17 R1: Ch 17 R1: Ch 17 R1: Ch 17 R1: Ch 18 R1: Ch 17 R1: Ch 18 R1: Ch 10 T1: Ch 10 T1: Ch 15 R2 T1: Ch 15 R3 T1: Ch 10 T1: Ch 15 R3 T1: Ch 15 R4 T1: Ch 10 T1: Ch 15 R4 T1: Ch 16 R1: Ch 10 T1: Ch 15 R4 T1: Ch 16 R1: Ch 10 T1: Ch 15 R4 T1: Ch 16 R5 R5 R5 R6 R1: Ch 10 R1: Ch 10 R1: Ch 15 R4 R1: Ch 11 R1: Ch 16 R1: Ch 16 R1: Ch 16 R1: Ch 16 R1: Ch 16 R1: Ch 17 R1: Ch 16 R1: Ch 17 R1: Ch 16 R1: Ch 17 R1: Ch 17 R1: Ch 16 R1: Ch 17 R1: Ch 16 R1: Ch 17 R1: Ch 16 R1: Ch 17 R1: Ch 1 | 1110 | 3.6 | | | | |
| R1: Ch 14 17-20 Mapping 3D from World to Screen, and Foreshortening Viewing & Clipping in 3D (Perspective & Parallel projection, Clipping against a Canonical View Volume, Clipping in Homogeneous Coordinates, and Mapping into a View-port R1: Ch 4 | 14-16 | | | | | |
| T1: Ch 6 World to Screen, and Foreshortening World to Screen, and Foreshortening Wolume, Clipping against a Canonical View Volume, Clipping in Homogeneous Coordinates, and Mapping into a View-port Wolume, Clipping in Homogeneous Coordinates, and Mapping into a View-port T1: Ch 11 Surfaces Rational Cubic Polynomial Curves & T1: Ch 11 R1: Ch 17, Quadric Surfaces Ch 18.2 | | World to Screen | Parametric Line Methods) | | | |
| World to Screen, and Foreshortening and Foreshortening and Foreshortening and Mapping in Homogeneous Coordinates, and Mapping into a View-port 21-25 Drawing Smooth Curves & Surfaces Surfaces Rational Cubic Polynomial Curves & T1: Ch 11 Surfaces Rational Cubic Polynomial Curves & Ch 18.2 26-28 Representation of Solid Modeling (Representations, Operations, Ch 18.2 29-33 Detection of Hidden portions Ray Tracing) and Hidden Line elimination 34-37 Perception of light and Color, Dithering Dithering Matrix) 38-40 How to shade Rendering (Models, Physics, Shading Polygons & T1: Ch 16 | 17-20 | Manning 3D from | Viewing & Clinning in 3D (Perspective & Parallel | | | |
| and Foreshortening Volume, Clipping in Homogeneous Coordinates, and Mapping into a View-port 21-25 Drawing Smooth Curves & Surfaces Surfaces Rational Cubic Polynomial Curves & R1: Ch 17, Quadric Surfaces) 26-28 Representation of Solid Modeling (Representations, Operations, Ch 18.2) 29-33 Detection of Hidden portions Ray Tracing) and Hidden Line elimination 34-37 Perception of light and Color, Dithering Matrix) 38-40 How to shade Rendering (Models, Physics, Shading Polygons & T1: Ch 16 | 17 20 | 11 0 | | | | |
| and Mapping into a View-port 21-25 Drawing Smooth Curves & Surfaces Surfaces Rational Cubic Polynomial Curves & T1: Ch 11 Curves & Surfaces Surfaces Surfaces Rational Cubic Polynomial Curves & R1: Ch 17, Quadric Surfaces) 26-28 Representation of Solid Modeling (Representations, Operations, T1: Ch 12 Solid Objects Geometry, and Interface) 29-33 Detection of Visible Surface Detection (Need & Algorithms, Hidden portions Ray Tracing) and Hidden Line elimination 34-37 Perception of light and Color, Models, Color Models (Light, half-toning, Color T1: Ch 13 And Color, Dithering Dithering Matrix) 38-40 How to shade Rendering (Models, Physics, Shading Polygons & T1: Ch 16 | | | | Tti, Cii i | | |
| 21-25 Drawing Smooth Curves & Surfaces Surfaces Surfaces Rational Cubic Polynomial Curves & T1: Ch 11 Surfaces Rational Cubic Polynomial Curves & T1: Ch 17, Quadric Surfaces) 26-28 Representation of Solid Modeling (Representations, Operations, T1: Ch 12 Geometry, and Interface) 29-33 Detection of Hidden portions Ray Tracing) and Hidden Line elimination 34-37 Perception of light and Color, Dithering Models, Color Conversion & Interpolation, Dithering Matrix) 38-40 How to shade Rendering (Models, Physics, Shading Polygons & T1: Ch 16 | | and roreshortening | | | | |
| Curves & Surfaces Surfaces Surfaces Rational Cubic Polynomial Curves & R1: Ch 17, Quadric Surfaces) Ch 18.2 Representation of Solid Modeling (Representations, Operations, T1: Ch 12 Geometry, and Interface) R1: Ch 17, Ch 18.2 Ch 18.2 Perception of Visible Surface Detection (Need & Algorithms, Ray Tracing) and Hidden Line elimination Ray Tracing) and Hidden Line elimination T1: Ch 15 Ray Tracing) and Hidden Line elimination T1: Ch 13 R1: Ch 17, Ch 18.2 R1: Ch 17, Ch 18.2 R1: Ch 17, Ch 18.2 R1: Ch 10 R29-33 Detection of light Ray Tracing) and Hidden Line elimination R34-37 Perception of light and Color, Models, Color Models (Light, half-toning, Color T1: Ch 13 R1: Ch 17, Ch 18.2 R1: Ch 17, Ch 18.2 R1: Ch 10 R1: Ch 15 R34-37 Perception of light and Color, Models, Color Conversion & Interpolation, R1: Ch 11 Dithering Matrix) R1: Ch 17, Ch 18.2 R1: Ch 10 R1: Ch 15 R1: Ch 15 R1: Ch 15 R1: Ch 15 R1: Ch 16 | 24.27 | D | 11 0 | | | |
| 26-28Representation of Solid Modeling (Representations, Operations, Solid ObjectsCh 18.229-33Detection of Hidden portionsVisible Surface Detection (Need & Algorithms, Ray Tracing) and Hidden Line eliminationT1: Ch 1534-37Perception of light and Color, DitheringLight & Color Models (Light, half-toning, Color And Color, Dithering Matrix)T1: Ch 1338-40How to shadeRendering (Models, Physics, Shading Polygons & T1: Ch 16 | 21-25 | | <u> </u> | | | |
| 26-28Representation of Solid Modeling (Representations, Operations, Solid ObjectsSolid Modeling (Representations, Operations, Geometry, and Interface)T1: Ch 1229-33Detection of Hidden portionsVisible Surface Detection (Need & Algorithms, Hidden portions)T1: Ch 1534-37Perception of light and Color, DitheringLight & Color Models (Light, half-toning, Color And Models, Color Conversion & Interpolation, Dithering Matrix)T1: Ch 1338-40How to shadeRendering (Models, Physics, Shading Polygons & T1: Ch 16 | | Curves & Surfaces | | • | | |
| Solid Objects Geometry, and Interface) R1: Ch 10 29-33 Detection of Hidden portions Ray Tracing) and Hidden Line elimination 34-37 Perception of light and Color, Dithering Dithering Dithering Matrix) 38-40 How to shade Rendering (Models, Physics, Shading Polygons & T1: Ch 16 | 26.26 | D | , | | | |
| 29-33Detection Hidden portionsVisible Surface Detection (Need & Algorithms, Ray Tracing) and Hidden Line eliminationT1: Ch 1534-37Perception of light and DitheringLight & Color Models (Light, half-toning, Color Models, Color Conversion & Interpolation, Dithering Matrix)T1: Ch 1338-40How to shadeRendering (Models, Physics, Shading Polygons &T1: Ch 16 | 26-28 | _ <u>+</u> | | | | |
| Hidden portions Ray Tracing) and Hidden Line elimination 34-37 Perception of light and Color, Models, Color Conversion & Interpolation, Dithering Dithering Matrix) 38-40 How to shade Rendering (Models, Physics, Shading Polygons & T1: Ch 16 | 20.22 | | | | | |
| 34-37 Perception of light and Color, Models, Color Conversion & Interpolation, Dithering Dithering Matrix) 38-40 How to shade Rendering (Models, Physics, Shading Polygons & T1: Ch 13 R1: Ch 11 R1: Ch 13 R1: Ch 11 | 29-33 | | , , , | 11: Cn 15 | | |
| and Color, Models, Color Conversion & Interpolation, R1: Ch 11 Dithering Dithering Matrix) 38-40 How to shade Rendering (Models, Physics, Shading Polygons & T1: Ch 16 | 24 27 | - | i C | T1. Ch 12 | | |
| Dithering Dithering Matrix) 38-40 How to shade Rendering (Models, Physics, Shading Polygons & T1: Ch 16 | 34-3/ | 1 - | \ 3 | | | |
| 38-40 How to shade Rendering (Models, Physics, Shading Polygons & T1: Ch 16 | | · · | _ | KI, CII II | | |
| | 38-40 | | , | T1: Ch 16 | | |
| | | surfaces and solids | Surface, & Shadows) | R1: Ch 11 | | |

Evaluation Scheme:

| E.C.NO | Evaluation | Duration | Weightage | Date & time | Nature of |
|--------|--------------------|----------|-----------|------------------------|-----------|
| | Component | (minute) | (%) | | component |
| 01 | Midterm | 90 | 30 | 13/10 - 9.30 - 11.00AM | Closed |
| | | | | | Book |
| 02 | Project | | 10 | TBA | Open Book |
| 03 | Coding Assignments | - | 20 | TBA | Open Book |
| | (10% pre mid sem | | | | |

| | grading) | | | | |
|----|---------------|-----|----|----------|-------------|
| 04 | Comprehensive | 120 | 40 | 18/12 FN | Closed book |

Chamber Consultation Hour: TBA

Notices: Will be displayed on the CMS. Specific instructions will be often given in the class only.

Makeup Policy: Makeup is highly discouraged for this course. Makeup will be given only in genuine cases and that too with prior notification only (following AUGSD rules). Makeup in Comprehensive Exam will be decided as per the guidelines issued by AUGSD.

Academic Honesty and Integrity Policy: Academic honesty and integrity are to be maintained by all the students throughout the semester and no type of academic dishonesty is acceptable.

Instructor- in-charge Tathagata Ray