Paper No.: 601 (Core Paper-1)  
Paper Title: Computer Graphics  
Teaching Hours: 4 Hrs./Week  
Credits: 4

Prerequisite: Basic concepts of computer based animation, various objects and basic school geometry.

Aim: To make students understand and learn the geometrical processes on various shapes, objects & text.

Expected Outcome: Students will be able to understand and write algorithms for construction of various shapes like line, circle & ellipse, and also various processes on them.

1. Graphics Systems
   1.1. Application Areas of Graphics Systems  
       1.1.1. Presentation Graphics  
       1.1.2. Entertainment  
       1.1.3. Education & Training  
       1.1.4. Image Processing  
   1.2. Application Areas of Computer Graphics  
       1.2.1. Computer Graphics Files  
       1.2.2. Raster Graphics and Vector Graphics  
   1.3. Video Display Devices  
       1.3.1. Refresh CRT  
       1.3.2. Color CRT  
       1.3.3. LCD  
   1.4. Random Scan Display  
   1.5. Direct View Storage Tube  
   1.6. Introduction to graphic standards  
   1.7. Concepts of various objects: Point, Line, Circle, Ellipse and Polygons

2. Line generation
   2.1. Geometry of line  
   2.2. Frame Buffer  
   2.3. Line Drawing Algorithms  
       2.3.1. DDA Algorithm  
       2.3.2. VECGEN  
       2.3.3. Bresenham  
   2.4. Line Styles  
       2.4.1. Thick line  
       2.4.2. Line caps
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2.4.3. Thick line segments
2.5. Anti aliasing of line

3. **Polygons**
   3.1. Polygon Representation
      3.1.1. Polygon Inside Tests
      3.1.2. Even-odd method
      3.1.3. Winding number method
   3.2. Polygon Area Filling Algorithms
      3.2.1. Flood Fill
      3.2.2. Scan Line
      3.2.3. Boundary Fill
      3.2.4. Filling polygon with a pattern

4. **Geometric Transformations**
   4.1. Basic Transformations
      4.1.1. Scaling
      4.1.2. Translation
      4.1.3. Rotation about origin
      4.1.4. Rotation about Homogeneous Coordinates
      4.1.5. Shearing

**References:**

   Donald Hearn & M. Pauline Baker
   Prentice Hall India
2. Computer Graphics
   Harrington S
   Tata McGraw Hill
3. Computer Graphics
   Desai A.A
   PHI
   Mukherjee & Jana
   PHI
5. Interactive Computer Graphics
   Giloi W.K
   Prentice Hall India
   New Man W. & Sproul P.F.
   McGraw Hill
   Rogers D.F.
   McGraw Hill
Paper No.: 602 (Core Elective)  
Teaching Hours: 3 Hrs./Week

Paper Title: e-Commerce & Cyber Security  
Credits: 3

Prerequisite: Fundamental Knowledge of Networking, Web Applications & RDBMS.

Aim: To impart basic knowledge of e-Commerce, Cyber Security, Cyber Crime & Cyber Law.

Expected Outcome: The students will get the basic knowledge of e-Commerce, Cyber Security, Cyber Crime & Cyber Law and hence will help them in developing secured applications and will make them aware of various Cyber Laws.

1. **Introduction to e-Commerce**
   1.1. What is e-Commerce?
   1.2. e-Commerce Framework

2. **e-Commerce Consumer Applications**
   2.1. e-Commerce Organization Application
   2.2. Network for e-Commerce
   2.3. What is Information Way

3. **e-Commerce and World wide Web**
   3.1. e-Commerce application services
   3.2. Consumer to Business Transaction
   3.3. Business to Business Transaction
   3.4. Security on the web

4. **E-Commerce Security Issues**
   4.1. Secure Socket layer
   4.2. Types of electronic payment systems
       4.2.1. E Cash
       4.2.2. Electronic checks
       4.2.3. Smart cards and electronic payment system
       4.2.4. Credit cards and Debit Cards payment and their authentication

5. **Introduction to Cyber Crimes**
   5.1. Category of Cyber crimes
   5.2. Technical Aspects of Cyber Crimes
       5.2.1. Unauthorized access & Hacking
       5.2.2. Trojan, virus and worm Attacks
5.3. E-mail related crimes
  5.3.1. Email spoofing and Spamming
  5.3.2. Email bombing
  5.3.3. Denial of Service attacks
  5.3.4. A distributed denial of service (DoS) attack

6. Prohibited Actions on Cyber
  6.1. Pornography
  6.2. IPR violations: software piracy, copyright infringement, trademarks violations, theft of computer source code, patent violations
  6.3. Cyber Squatting
  6.4. Banking/Credit card Related crimes
  6.5. E-commerce/ Investment Frauds
  6.6. Defamation (Cyber smearing)
  6.7. Cyber Stacking

References:

1. Frontiers of of Electronic Commerce
   Kalakota and Whinstn
   Addition Wesley

2. Electronic Commerce : A Mangerial Prespective
   Efraim Turban, Jae Lee, David King, H.Michel Chung
   Addition Wesley

3. IT Encyclopedia.com Volume 8 : E-Commerce
   Parag Diwan & Sunil Sharma
   Pentagon Press

4. Cyber Crime in India
   By: Dr M Dasgupta
   ISBN : 8171772209

5. E-Commerce : An Indian Perspective, 3rd Edition
   Joseph
   PHI

6. Cyber Law and Crimes
   Barkha U, Rama Mohan
   ISBN : 9180087276

   Nandan Kamath
   ISBN : 8175347786

8. Email Hacking
   Ankit Fadia
   Vikas Publishing House Pvt. Ltd.
   Himalaya Publisher ISBN 8178662760 , 9788178662763
   Willey India Publication, Apr-2011

9. E-Commerce Concept, Models Strategies-2011
   G.S.V.Murthy Himalaya
   Macmillan India Ltd.

10. Cyber Security Understanding Cyber Crime, Computer Forensic and Legal Perspectives
    Nina Godbole, Sunit Belapur
    A.P.H Publishing Corporation ISBN
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Paper No.: 603 (Core Compulsory)  Practical Hours: 1 Hr./ 5 Students/Week
Paper Title: PROJECT  Credits: 14
Field Work Duration: Minimum 8 weeks.


Aim: The main objective is to make students acquire knowledge of analyzing and solving real world problems and hands on experience of software development life cycle.

Expected Outcome: Students will understand the complete process of software development life cycle and will be able to produce good applications of real world problems.

Guidelines for the project:

Duration of the Project Work should be TWO months. All the students will have to submit following reports to their respective examination centres.

1. The Joining Report (Once).
2. Project Title Report (Once).
3. Progress Reports (Fortnightly) signed by the guide & submitted to the internal guide in person.
4. Project Completion Certificate issued from the Organization where the project was done (in case the project is not done in the college/institute).

The student shall not be allowed to appear for the Final Examination if the student fails to submit the above mentioned documents.

Project Viva-voce will be conducted at the end of the semester.

Internal Evaluation: Minimum two faculties (preferably senior most) should be nominated by the Head of the Department or the senior most faculty in absence of the Head to evaluate the performance of the students presentation.
External Evaluation:
The evaluation should be as per the following break up:

1. Analysis: 25% weightage
2. Design: 25% weightage
3. Understanding of the Problem & Technology Used: 25% weightage
4. Presentation: 15% weightage
5. Project Report: 10% weightage

Guidelines to Calculate the Workload:
The load of the project will be calculated as 1 Hour/Week for every 5 students. In case of 60 students total work load per week will be 12 hours.
Paper No.: 604 (Foundation Compulsory)  
Practical Hours: 2 Hrs./Week  
Paper Title: Seminar on Information Technology Innovations & Trends  
Credits: 2

Objective: Information Technology is a constantly changing field. The idea of introducing this subject is to let students keep pace with the changing scenario of I. T.

During the lectures, faculty will help students to select the topic. The students will collect relevant information from various sources and prepare a presentation. During the class hours, students will present their presentation on the given topic. The faculty will access and help them to improve their presentation skills.

Aim:  
(i) To improve the communication and presentation skills.  
(ii) To let students update knowledge on latest & forthcoming technologies.  
(iii) Let students keep pace with new trends of Information Technology.

Expected Outcome: Students will be able to develop their presentation skills and will keep themselves updated with latest trends in Information Technology.

Guidelines for the seminar:

Students will prepare a presentation using ICT Tools and also submit hard copy of the presentation for Internal and External evaluation.

Evaluation:

External examiners who are appointed for Project evaluation will evaluate the Seminar Presentation, along with the project presentations and will be treated as External Evaluation.

Minimum two faculties (Preferably senior most) nominated by the Department Head or the Senior most faculty in absence of the Department Head will evaluate the performance of the students presentation and will be treated as Internal Evaluation.

The evaluation should be as per the following break up:
1. Selection of the Topic & Relevance: 20% weightage  
2. Understanding of the topic: 35% weightage  
3. Source of the topic: 10% weightage  
4. Presentation: 35% weightage
### TEACHING & EVALUATION SCHEME

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<th>No.</th>
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