T. Y. B. C. A. Semester 6

Effective From: June 2013.

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

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 :

1	Computer Graphics, Second Edition	Donald Hearn & M. Pauline Baker	Prentice Hall India
2	Computer Graphics	Harrington S	Tata McGraw Hill
3	Computer Graphics	Desai A.A	PHI
4	Computer Graphics: Algorithms & Implementations	Mukherjee & Jana	PHI
5	Interactive Computer Graphics	Giloi W.K	Prentice Hall India
6	Principles of Interactive Computer Graphics	New Man W. & Sproul P.F.	McGraw Hill
7	Procedural Elements for Computer Graphics	Rogers D.F.	McGraw Hill

T. Y. B. C. A. Semester 6
Effective From: June 2013.

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
7	Law Relating to Computers Internet and E-Commerce : 2009 Edition: Fourth	Nandan Kamath	ISBN : 8175347786
8	Email Hacking	Ankit Fadia	Vikas Publishing House Pvt. Ltd.
9	E-Commerce Concept, Models Strategies-2011	G.S.V.Murthy Himalaya	Himalaya Publisher ISBN 8178662760 , 9788178662763
10	Cyber Security Understanding Cyber Crime, Computer Forensic and Legal Perspectives	Nina Godbole, Sunit Belapur	Willey India Publication, Apr-2011
11	Ethical Hacking Guide to Corporate Security	Ankit Fadia	Macmillan India Ltd.
12	Cyber Crime	Bansal S.K	A.P.H Publishing Corporation ISBN

			9788176484178
13	Cyber Law – E-Commerce & M-Commerce	Ahmed Tabrez	APH Publisher Corportion ISBN 8176483834.
14	E-Security Electronic Authentication and Information System Security	Sundeep Oberoi	TMH
15	Cyber Law Simplified	Vivek Sood	TMH, ISBN 0070435065.

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Effective From: June 2013.

Paper No.: 603 (Core Compulsory) **Practical Hours: 1 Hr./ 5 Students/Week**
Paper Title: PROJECT **Credits: 14**
Field Work Duration: Minimum 8 weeks.

Prerequisite: **Knowledge of Operating System, Computer Networking, Software Engineering, Database, Application Development Tools, Web Designing Related Tools, Computer Languages.**

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.

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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.

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Effective From: June 2013.

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 f the topic: 35% weightage
3. Source of the topic: 10% weightage
4. Presentation: 35% weightage

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TEACHING & EVALUATION SCHEME

No.	Course Type	Subject	Credit	Hrs./ Week	Internal Marks	External Marks	External Exam Duration	Total Marks
601	CORE	Computer Graphics	4	4	30	70	3 Hrs	100
602	CORE Elective	e-Commerce & Cyber Security	3	3	30	70	3 Hrs	100
603	CORE	Project	14	1 Hr / Week / 5 Students	120	280		400
604	Foundation compulsory	Seminar	2	2	30	70		100
	Foundation Elective	To be Selected from the list (eg NCC/NSS/Saptdhara	2	2				
TOTAL			25		210	490		700