FACULTY OF SCIENCE

SYLLABI

FOR

POSTGRADUATE DIPLOMA

IN

COMPUTER GRAPHICS & ANIMATIONS

(SEMESTER SYSTEM)

EXAMINATIONS 2012-2013

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OUTLINE OF THE SYLLABI AND COURSES FOR POST GRADUATE DIPLOMA IN COMPUTER GRAPHICS AND ANIMATION

SEMESTER I

<table>
<thead>
<tr>
<th>Paper Code</th>
<th>Paper Name</th>
<th>Lect. T P Hrs./Week</th>
<th>Exam. Marks</th>
<th>Int. Ass. Marks</th>
<th>Total Marks</th>
<th>Exam Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CGA-01</td>
<td>Fundamentals of Information Technology</td>
<td>3 1 80</td>
<td>20</td>
<td>100</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>CGA-02</td>
<td>Introduction to Graphics and Animation</td>
<td>3 1 80</td>
<td>20</td>
<td>100</td>
<td>3</td>
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<tr>
<td>CGA-03</td>
<td>Computer Graphics : Coreldraw</td>
<td>3 1 80</td>
<td>20</td>
<td>100</td>
<td>3</td>
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<tr>
<td>CGA-04</td>
<td>Adobe Photoshop</td>
<td>3 1 80</td>
<td>20</td>
<td>100</td>
<td>3</td>
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</tr>
<tr>
<td>CGA-05</td>
<td>Practical based on CGA-01 &amp; 02</td>
<td>5 50 25</td>
<td>75</td>
<td>4</td>
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</tr>
<tr>
<td>CGA-06</td>
<td>Practical based on CGA-03 &amp; 04</td>
<td>5 50 25</td>
<td>75</td>
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Total Marks: 550

SEMESTER II

<table>
<thead>
<tr>
<th>Paper Code</th>
<th>Paper Name</th>
<th>Lect. T P Hrs./Week</th>
<th>Exam. Marks</th>
<th>Int. Ass. Marks</th>
<th>Total Marks</th>
<th>Exam Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CGA-07</td>
<td>Computer Graphics : Advance Coreldraw</td>
<td>3 1 80</td>
<td>20</td>
<td>100</td>
<td>3</td>
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<tr>
<td>CGA-08</td>
<td>Adobe Flash</td>
<td>3 1 80</td>
<td>20</td>
<td>100</td>
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<tr>
<td>CGA-09</td>
<td>Adobe Illustrator</td>
<td>3 1 80</td>
<td>20</td>
<td>100</td>
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<tr>
<td>CGA-10</td>
<td>Autodesk 3D Max</td>
<td>3 1 80</td>
<td>20</td>
<td>100</td>
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<tr>
<td>CGA-11</td>
<td>Practical based on CGA-07 &amp; 08</td>
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<tr>
<td>CGA-12</td>
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<td>5 50 25</td>
<td>75</td>
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<tr>
<td>CGA-13</td>
<td>Project work</td>
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Total Marks: 650

Note: Pass Marks 40% in Theory, Internal Assessment and Practical separately
50% marks for project work
50% marks in aggregate to qualify the examinations.
POST GRADUATE DIPLOMA IN COMPUTER GRAPHICS AND ANIMATION

SEMESTER I

PAPER TITLE: Fundamentals of Information Technology

Max Marks: 80 (Th) + 20 (Int.)

Paper code: CGA-01
Time: 3 hours

Course Duration: 40 Lectures of one hour each

Note:
1. The Question Paper will consist of three Sections A, B and C comprising of total of NINE questions.
2. Examiner will set FOUR questions each in Sections A & B and ONE question in Section C. The Examiner will set 10 short answer type questions in Section C covering the whole syllabus.
3. The students are required to attempt FIVE questions in all by selecting TWO questions each from Section A & B and Section C is compulsory.
4. All questions carry equal marks.

SECTION – A

Basics of Computer
Introduction to computer (ALU, Memory, CU), booting process, introduction of the concepts-bit, byte, word, hardware, operating system, system and application software, machine, assembly and high level languages, Input output devices, Graphics input/output devices, Keyboard, Trackball, Joystick, Light Pen, Digitizer Tablets, Mouse, Touch Screen. Image Scanners, Vector and Raster graphics.

Operating systems – DOS, Windows and Unix.
Features of DOS, windows and Unix operating systems and their comparison. Internal and external commands, Concepts of window, menu, icon, opening, closing and resizing windows, creating folder, Using Start, control panel, recycle bin and online help, using windows explorer to manage files and directories.

Lectures (20)

SECTION – B

Memory and Disk Management
Primary and secondary memory: RAM, ROM, PROM, EPROM, Cache, extended and expanded memory. Removable and non-removable secondary memory: tapes, disks, CDROM, DVD. Organization of data on disks: Tracks, sectors, cylinders, heads, access time, seek time and latency time.

Installation and using application softwares : Understanding and using Ms-word, Ms-excel

Lectures (20)

Text Books:
PC Software made simple by R.K. Texali - Tata McGraw Hill

References Books:
Computers Todays by S.K. Basamlra, Galgotia Publications
PAPER TITLE: Introduction to Graphics & Animation

Paper code : CGA-02
Course Duration: 40 Lectures of one hour each

Max Marks: 80 (Th) + 20 (Int.)
Time: 3 hours

Note:
1. The Question Paper will consist of three Sections A, B and C comprising of total of NINE questions.
2. Examiner will set FOUR questions each in Sections A & B and ONE question in Section C. The Examiner will set 10 short answer type questions in Section C covering the whole syllabus.
3. The students are required to attempt FIVE questions in all by selecting TWO questions each from Section A & B and Section C is compulsory.
4. All questions carry equal marks.

SECTION – A

Introduction to Graphics and Animation:

Two dimensional Geometric Transformations and viewing : Basic transformations, Rotation, Scaling, Composite transformations, viewing pipeline, clipping operations

Lectures (20)

SECTION - B

Three dimensional concepts, transformations and Viewing : three dimensional display methods, three dimensional transformations, three dimensional viewing pipeline, viewing coordinates.

Animation: Concept of Animation, Basics of animation, Principle and use of animation in multimedia, effect of resolutions, pixel depth, image size on quality and storage. Overview of 2D and 3D animation techniques.

Lectures (20)

Text Books : 
1. Multimedia Magic by S. Gokul, BPB, 2009
4. Multimedia on a PC by Rain Sinclair 2008
5. Introduction to Computer Graphics by N Krishnamurthy 2009

References Books: 
2. Computer Graphics by Hearn and Baker, PHI. 2010
PAPER TITLE: Computer Graphics - Corel draw

Max Marks: 80 (Th) + 20 (Int.)

Paper code : CGA-03

Course Duration: 20 Lectures of one hour each

Time: 3 hours

Note:
1. The Question Paper will consist of three Sections A, B and C comprising of total of NINE questions.
2. Examiner will set FOUR questions each in Sections A & B and ONE question in Section C. The Examiner will set 10 short answer type questions in Section C covering the whole syllabus.
3. The students are required to attempt FIVE questions in all by selecting TWO questions each from Section A & B and Section C is compulsory.
4. All questions carry equal marks.

SECTION – A

Introduction: Introduction to Coreldraw, document info, working with toolbars, working with docker windows, using views, zoom, workspaces.

Customizing Options: Using Multiple workspaces, Customizing the Toolbars, Using Shortcuts, Saving Defaults, Setting File Backups

Basic Drawing: Selection techniques, objects locking, digger selection, working with: lines, freehand curves, ellipses, rectangles, grids, rulers, guidelines, and snapping to objects.

Lectures (20)

SECTION – B

Advanced Drawing: Working with curves, polygons, manipulating objects, working with nodes: adding, deleting, rotating and skewing.

Text work: creating artistic text, paragraph text, changing the typeface, type size, applying text effects, aligning text, adjusting spacing, shifting and rotating text, dedicated text editor.

Advanced text work: Using tabs, indents, linking frames, editing individual characters, working with text styles, fitting text to a path, searching text, checking spelling and grammar.

Styles and Templates: Introduction to styles and templates, creating a style, applying a style, copying properties, use of templates

Lectures (20)

Text Books :
1. Coreldraw in easy steps by Stepman 2009
2. Teach Yourself Coreldraw by Karlins David 2009
3. Coreldraw 5, 9, 12 for beginners by David Gray

References Books:
2. Mastering Corel-Draw by Altman, BPB. 2009
PAPER TITLE: Adobe Photoshop

Max Marks: 80 (Th) + 20 (Int.)

Paper code : CGA-04

Course Duration: 40 Lectures of one hour each

Note:
1. The Question Paper will consist of three Sections A, B and C comprising of total of NINE questions.
2. Examiner will set FOUR questions each in Sections A & B and ONE question in Section C. The Examiner will set 10 short answer type questions in Section C covering the whole syllabus.
3. The students are required to attempt FIVE questions in all by selecting TWO questions each from Section A & B and Section C is compulsory.
4. All questions carry equal marks.

SECTION – A

Introduction: Painting and editing: Opening a file, working with palettes, using the layers palette, using the painting editing tools, smudging a selection, saving palettes. Selections: Tool overview, selecting with the marquee moving a selection selecting with the magic wand tool, selecting with lasso tool, saving and loading selections, transforming a selection, adding a text, cropping the image.

Promotional piece: Creating and Viewing layers, rearranging layers, changing the mode of a layer, feathering a selection, defining and filling with a pattern, adding a layer effect to a type layer, patterning and saving files.

SECTION-B

Using Paths: Drawing paths with pen tool, storing a path, drawing curved paths, filling a path, combining straight and curved lines, making a path into a selection, Drawing a path around an artwork, transforming a path channels and masks: working with masks and channels, Using channels, coating a quick mask: Editing a quick mask, saving a selection as a mask, loading mask as a selection and using the replace colour comment, creating 3 gradient mask, applying filters to mask.

Advanced layer techniques: Working with layer masks, creating a clipping group, Adding adjustment layers, adjusting hue and saturation, removing layer masks, save layered files understanding colour making colour correction, using the navigations command, adjusting colour with the level command and the wires commands, making selective colour correction, lightening, darkening and saturating areas.

Text Books :
2. Photoshop element 2 the complete reference by Hirish gene 2nd edition
3. Photoshop CS4 – studio techniques by Ben Will more 2009
4. Desktop Publishing and Design by C Roger 2009
5. Designing Web Animations by Nicola Brown

References Books:
1. Photoshop 7 - Savvy by Romaniello, BPB.
2. Photoshop Web Graphics by Laurie Uriich 2009
3. Mastering digital photography and imaging, 2009
CGA-05 : PRACTICAL  based on CGA-01 & CGA-02

Max Marks: 75 (50 + 25)

Practical work – Assignments related with:
- Differentiation of Dos and Unix OS
- Windows XP (desktop, control panel, buttons and icons, administrative tools etc.),
- Working on word-pad, notepad,
- Drawing lines, circles, ellipses in Paintbrush
- Text editing in Microsoft-Word, Microsoft Excel,
- Making simple multi-media using Microsoft power-point.

CGA-06 : PRACTICAL based on CGA-03  & CGA-04

Max Marks: 75 (50 + 25)

Practical work – Assignments related with:
- Drawing lines, curves, circles, ellipses, polygons
- Create Illustrations pamphlets of any institute
- Create Magazine cover relating to Graphics.
- Creating Information Broacher of Schools
- Create various banners, logos, magazines (10 pages)
- Create collage of various photographs
- Personal Logo Assignment
- Personal Collage
- Clone Stamp Assignment
- Cinema Poster Designing
SEMESTER II

PAPER TITLE: Computer Graphics – Advance Corel draw

Max Marks: 80 (Th) + 20 (Int.)

Paper code : CGA-07
Course Duration: 40 Lectures of one hour each

Time: 3 hours

Note:
1. The Question Paper will consist of three Sections A, B and C comprising of total of NINE questions.
2. Examiner will set FOUR questions each in Sections A & B and ONE question in Section C. The Examiner will set 10 short answer type questions in Section C covering the whole syllabus.
3. The students are required to attempt FIVE questions in all by selecting TWO questions each from Section A & B and Section C is compulsory.
4. All questions carry equal marks.

SECTION – A

Layers: Introduction to layers, editing layers, setting up a master layer, moving, copying and locking layers, reordering layers

Tools and Techniques : The Outline tool: working with preset outlines. Setting outline widths, colours, styles. Creating line styles, applying outline arrows, editing arrows, Configuring various corners of the objects, applying calligraphic outlines, setting outline defaults, further outline options.

The Fill Tool : applying uniform fills, pattern fills, using two-colour pattern fills, full colour pattern fills, bitmap pattern fills, fountain fills, texture fills, interactive fills. Creating mesh fills, tiling fills interactively etc.

The Artistic Media Tool : using preset mode, brush mode, object sprayer mode.

The Interactive Tools: distorting objects, extruding objects, blending objects, interactive envelopes etc.

Lectures (20)

SECTION – B

Working with Images : Importing images, using the scrapbook, colouring a black and white bitmap, tracing bitmaps, cropping bitmaps, resizing, rotating, skewing images, bitmap special effects, colour styles, exporting images.

Printing and Publishing : Layout styles, setting the page size, specifying the background colour, adding a printable page frame, hiding the page border, using facing pages, setting the start page, inserting pages, going to specific pages. Printing components, using print styles, proofing aids, printing to a file, the bureau wizard, publishing to the internet.

Corel Rave: Introduction to corel rave, playing sample rave animations, working with the timeline docker, inserting hyperlinks, creating sprites and adding behaviors

Lectures (20)

Text Books :
2. CorelDRAW® 9 Bible (Paperback) by Deborah Miller
4. CorelDRAW X3 by Collectif
5. CorelDRAW 12 Unleashed.

References Books:
PAPER TITLE: Adobe Flash

Paper code : CGA-08
Course Duration: 40 Lectures of one hour each

Max Marks: 80 (Th) + 20 (Int.)
Time: 3 hours

Note:
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4. All questions carry equal marks.

SECTION-A


Lectures (20)

SECTION-B


Lectures (20)

Text Books:
1. Flash in Easy Steps, DreamTech Press, Nick Vandome 2009
2. Inside Flash, Technmedia, lody Keating, Fig Leaf Software 2010
3. Flash Web Design by Hillman 2009
4. Flash MX in easy step by nick 2009

References Books:
1. Flash Mx Professional 2010 by Unleashed, David Vogeleeer Matthew Pizzi
2. After Effect for Flash , Richard 2009
PAPER TITLE: Adobe Illustrator

Paper code : CGA-09
Course Duration: 40 Lectures of one hour each

Max Marks: 80 (Th) + 20 (Int.)
Time: 3 hours

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4. All questions carry equal marks.

SECTION-A

Graphics Overview - Raster graphics, Vector graphics, Printing graphics; Creating new drawings & opening old ones; Page set up - Rulers, grids and guidelines, Smart Guides, Smart guide preferences, One last guide to set; Selecting an object; Templates; Viewing your work - Document info, Annotating an object.

Illustrator's Design Tools - Grid, Artboard / Workspace, Bounding Box, Setting preferences / customizing, Keyboard Shortcuts, Saving your work, Exporting your work as a bitmap, Adobe Bridge, Special Focus, Toolbars - Default toolbar, Drawing, selecting/deselecting, moving objects & manipulating object center points, Shapes, Drawing lines, curves, arcs; Pen Tool Paths, Straight segments, Smooth points, Non-continuous curve;

Lectures (20)

SECTION-B

Working with layers - Compounding & breaking apart objects - Hiding and showing objects & layers - Layers, Color, Type & Appearance - Layers - Sub-layers - Template layers - Layer options; Isolation mode; Working with color - A word about color - Color aspects - Gradients - Transparency; Color options; Special painting and drawing tools; Spot & process color;

Working with Text / Type - Adding, selecting & manipulating text, Editing, Formatting, Fitting text to a curve or line, Fitting text to a shape, Wrapping text, Symbols & special characters, Spacing, kerning & leading, Spell checking, Anti-alias, Styles, Creating objects, graphs and symbols, learning how to select and edit, understanding colour, gradients and mesh. Putting illustrator to work: Using illustrator to organize objects, using creative strokes and fills with patterns, applying transformations and distortions, using path blends, compound paths and Masks.

Lectures (20)

Text Books:
1. Adobe Illustrator CS 4 Techmedia 2011
2. Illustrator in easy step by nick 2011

References Books:
3. Adobe Illustrator CS 3 CS 4, Techmedia 2009
4. After Effect for Illustrator, Richard 2009
PAPER TITLE: Autodesk 3D Max

Max Marks: 80 (Th) + 20 (Int.)

Paper code : CGA-10

Course Duration: 40 Lectures of one hour each

Time: 3 hours

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SECTION-A


Exploring the max interface: Interface Elements, Menus, Toolbar, Viewports, Command Panel, Lower Interface Gar Controls, Interacting With the Interface.

WORKING WITH THE viewports: 3D Space, Viewport Navigation Controls, Configuring the Viewports, Viewport backgrounds.

Working with objects: Creating Primitive Objects, Primitive Object Types, Selecting Objects And Setting Object Properties, Cloning Objects.

LECTURES (20)

SECTION-B

Transforming objects: Moving, Rotating and Scaling Objects, Using Pivot Points, Grids and Snap Options.

Modifiers: Exploring the Modifier Stack, Exploring Modifier Types, Using Instanced 'Modifiers.

Animation and rendering: Animation: About Key Frame Set Key Animation Mode. The Track View-Dope Sheet, Rendering: Rendering Options. The Render Scene Dialog, The Render frame Window, Rendering for Animation.

LECTURES (20)

Text Books:
1. 3Ds Max 5, DreamTech Press, Prof. Sham Teckoo 2009
2. Introducing 3Ds Max 9 by H K Shoni 2009
3. Mastering 3Ds Max by Cat woods 2008
4. 3Ds Max 7 fundamentals, Teb Broadman 2009

References:
1. 3Ds Max 5 Bible, Kelly L. Murdock, Willey Pub. Inc. 2009
2. 3Ds Max 5 Fundamentals
3. 3Ds Max 9 Bible by Mudrock
4. Mastering Autodesk 3Ds Max 2010 by Mark Gerhard
CGA-11 : PRACTICAL based on CGA-07 & CGA-08  

Practical work – Assignments related with:
- Create any web applications
- Making Masks, Making Posters
- Create any character
- Create any corporate presentations using adobe flash
- Create advertisement of display graphical device.

Max Marks: 75 (50 + 25)

CGA-12 : PRACTICAL based on CGA-09  

Practical work – Assignments related with:
- Create any web applications
- Create any corporate presentations using adobe illustrator
- Mask Making, Gradients and Blends
- Making Logos, Making Posters,
- Making Clip Arts, Animate Fishie
- Create advertisement of display graphical device.
- Create layout designs using Adobe Illustrator

Max Marks: 75 (50 + 25)

CGA-13 : PROJECT WORK : (using any graphics and animation tool specified in syllabus)  

Project must be taken up from the real life examples like :
- Science Project related to Physics / Chemistry
- Story Narration for Kids.
- Interactive Kindergarten tutorial
- Animate flame of candle.
- Create simple cartoon character
- Any other relevant projects.

Max Marks: 100

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