SRI VENKATESWARA UNIVERSITY
B.Com. Computer Applications & B.Com Computer Applications with Business
Analytics, BA Computer Applications &B.Sc. Computer Applications
III Year – V Semester (Under CBCS W.E.F. 2020-21)
Course**-6D: MULTIMEDIA TOOLS AND APPLICATIONS**
(Skill Enhancement Course (Elective), 5 credits)

Learning Outcomes:
Upon successful completion of the course, a student will be able to:

1. Gain knowledge on the concepts related to Multimedia.
2. Understand the concepts like image data representation and colour modes.
3. Understand the different types of video signals and digital audio.
4. Know about multimedia data compression types and audio compression standards
5. Know about basic video compression techniques.

Syllabus: (Total hours: 75 including Theory, Practical, Training, Unit tests etc.)

Unit-1: Introduction to multimedia: 12Hr
1. What is Multimedia?
2. Components of Multimedia System
3. Multimedia and Hypermedia
4. Multimedia Authoring metaphors
5. Multimedia Production
6. Multimedia Presentation
7. Automatic Authoring

Unit-2: Image Data Representations and color models: 12Hr
1. Color science Human vision Image data types:
2. 2.Black & white images
   2.1 1-bit images (Binary image)
   2.2 8 -bit (Gray -level images)
3. Color images
   3.1 24-bit color images
   3.2 8-bit color images
4. Color models

Unit-3: Fundamental concepts in video: 12Hr
1. Types of Video Signals
   1.1 Analog Video
   1.2 Digital Video

Basics of Digital Audio:
2. What is Sound?
   2.1 Digitization of Sound
2.2 Quantization and Transmission of Audio
  2.2.1 Pulse code modulation
  2.2.2 Differential coding of audio
  2.2.3 Predictive coding

Unit-4:

Multimedia Data Compression: **13Hr**
        1. Introduction
        1.1 Basics of Information Theory
        1.2 Lossless Compression Algorithms
           1.2.1 Fix-Length Coding
           1.2.2 Run- length coding
1.2.4 Dictionary- based coding
        1.3. Variable Length Coding
         1.3.1 Huffman Coding Algorithm

Audio Compression standards:
        2. Introduction
           2.1 Psychoacoustics model
        2.2 MPEG Audio

Unit-5: Basic Video Compression Techniques: **11Hr**
        1. Introduction to Video compression
        2. Video compression standard H.261
        3. Video compression standard MPEG-1

Text Books:
Fundamentals of Multimedia by Ze-Nian Li & Mark S. Drew. Publisher: Prentice Hall
Reference Books:
1. An introduction to digital multimedia by Savage, T. M. and Vogel, K. E. 2008.
2. Digital Multimedia by Nigel Chapman & Jenny Chapman. 2009.
Online Resources: https://ksuit342.wordpress.com/lectuers/
https://www.tutorialspoint.com/multimedia

Recommended Co-Curricular Activities (participation: total 15 weeks):
(Co-curricular activities shall not promote copying from textbook or from others work and shall encourage self/independent and group learning)
  A. Measurable
    1. Assignments (in writing and doing forms on the aspects of syllabus content and outside the syllabus content. Shall be individual and challenging)
    2. Student seminars (on topics of the syllabus and related aspects (individual activity))
    3. Quiz (on topics where the content can be compiled by smaller aspects and data (Individuals or groups as teams))

4. Study projects (by very small groups of students on selected local real-time problems pertaining to syllabus or related areas. The individual participation and contribution of students shall be ensured (team activity))

B. General
   1. Group Discussion
   2. Others

RECOMMENDED CONTINUOUS ASSESSMENT METHODS:

Some of the following suggested assessment methodologies could be adopted;

1. The oral and written examinations (Scheduled and surprise tests),
2. Closed-book and open-book tests,
3. Programming exercises,
4. Observation of practical skills,
5. Efficient delivery using seminar presentations,
6. Viva voce interviews.
7. Computerized adaptive testing, literature surveys and evaluations,
8. Peers and self-assessment, outputs form individual and collaborative work

Suggested Software

1) Image Editing – GIMP
2) Audio Editing – Audacity
3) Video Editing – video pad
4) NCH software tools.

Course-6D: **Multimedia Tools and Applications; Lab (Practical) Syllabus (15 Hrs.)**

(Since, the proposed SECs are connected to Computer Programming/Software Tools and Skill enhancement, the students need to get exposure on the syllabus content by practicing on the computer even though there is no formal assignment of credits and laboratory hours for practical sessions. So, as part of the Co-curricular activities and continuous assessment, students should be engaged in practicing on computer for at least 15 hours per semester.)

1. Editing images using GIMP
2. Improve the Quality of your Image in GIMP
3. Create an impressive background in GIMP
4. Applying Shadow & Highlight effects in images
5. Black& white and color photo conversion.

Note: The list of experiments need not be restricted to the above list. *Detailed list of Programming/software tool based exercises can be prepared by the concerned faculty members.*

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Computer Applications &B.Sc. Computer Applications
III Year – V Semester (**Under CBCS W.E.F. 2020-21)
Course-6D: MULTIMEDIA TOOLS AND APPLICATIONS
MODEL QUESTION PAPER

SECTION - A (Total 15 marks)
Answer any FIVE Questions   5×3 = 15 Marks

1.
2.
3.
4.
5.
6.
7.
8.
9.
10.

SECTION - B (Total 60 marks)
Answer any FIVE Questions   5×12 = 60 Marks

11.
12
13.
14.
15.
16.
17.
18.
19.
20.

Note: Must Give Two 3 Marks Questions and Two 12 Marks Questions from each Unit.

B.Com CA, B.Com CA with Business Analytics, B.Sc CA & BA CA

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B.Com. Computer Applications & B.Com Computer Applications with Business Analytics,
BA Computer Applications & B.Sc. Computer Applications
III Year – V Semester (Under CBCS W.E.F. 2020-21)
Course**-7D: DIGITAL IMAGING**
(Skill Enhancement Course (Elective), 5 credits)
Learning Outcomes:
Upon successful completion of the course, a student will be able to:

1. Gain knowledge about Types of Graphics, Types of Objects and Types of video editing tools
2. Show their skills in editing and altering photographs for through a
basic understanding of the tool box.
3. Gain knowledge in using the layers.
4. Gain knowledge in using the selection tools, repair tools.
5. Gain knowledge in using selection tools, applying filters and can show their skills.

Syllabus: (Total hours: 75 including Theory, Practical, Training, Unit tests etc.)

UNIT-I   **12 Hrs**
1. Types of Graphics
        1.1 Raster vs Vector Graphics
2. Types of Objects
        2.1 Audio formats
        2.2 Video formats
        2.3 Image formats
        2.4 Text document formats
3. Types of video editing
4. Different color modes.
5. Image Scanner
        5.1 Types of Image Scanners

UNIT-II   **12 Hrs**
1. What is GIMP?
2. GIMP tool box window
3. Layers Dialog
4. Tool Options Dialog
5. Image window
6. Image window menus

UNIT-III   **12 Hrs**

Improving Digital Photos

      1.1 Opening files

           1.1.1 Rescaling saving files

      1.2. Cropping

      1.3. Brightening & Darkening

      1.4. Rotating

      1.5. Sharpening

Introduction to layers

      2. What is layer?

           2.1. Using layer to add text

           2.2. Using move tool

           2.3. Changing colors

           2.4. Simple effects on layers

           2.5 Performing operations on layers

           2.7 Using layers to copy and paste

UNIT-IV   **12 Hrs**

Drawing:

      1.1 Drawing lines and curves

      1.2 Changing colors and brushes

      1.3 Erasing

      1.4 Drawing rectangles, Circles and other shapes

      1.6 Outlining and filling regions

      1.7 Filling with patterns and gradients

Selection:

      2.1 Working with selections

      2.2 Select by color and fuzzy

      2.3 Select Bezier paths

2.5 Modifying selections with selection modes

UNIT-V   **12 Hrs**

Erasing and Touching Up:

1.1 Dodge and burn tool

      1.3 Clone tool

      1.4 Sharpening using convolve tool

      1.5 Correcting Color Balance

Filters:

      2.1 Filters

         2.1.1 Blur

         2.1.2 Enhance

         2.1.3 Noise Filters

References:

Textbook: Beginning GIMP from Novice to professional by Akkana Peck,

           Second Edition, Apress

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1. Designing a Visiting card
2. Design Cover page of a book
3. Paper add for calling tenders
4. Design a Pamphlet
5. Brochure designing
6. Titles designing
7. Custom shapes creation
8. Image size modification
9. Background changes
10. Texture and patterns designing

Note: The list of experiments need not be restricted to the above list. *Detailed list of Programming/software tool based exercises can be prepared by the concernedfacultymembers.*

Draft Syllabus prepared by:
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