Module Information

<table>
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<tr>
<th>Module Title</th>
<th>Video Processing and Multimedia</th>
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<tr>
<td>Module Code</td>
<td>DSP2525</td>
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1. MODULE SUMMARY

Aims and Summary

This module intends to prepare students for development and implementation of various video processing and multimedia concepts. In this module, students will be able to choose suitable video processing algorithms and implement them for multimedia applications. They will be trained to analyse and implement various texts, audio, image and video compression techniques and also will be trained to develop and implement applications like motion estimation and multimedia security.

Module Size and Credits

- Module size: Single
- CATS points: 10
- ECTS credits: N/A
- Open / restricted: Restricted
- Availability on/off campus: On Campus/Off campus
- Total student study hours: 100
- Number of weeks: 5 weeks Full-time or 8 weeks Part-time.
- Department responsible: Department of Electronics and Electrical Engineering
- Academic Year: 2012

Entry Requirements (pre-requisites and co-requisites)

Normally to be qualified for entry to the Postgraduate Engineering Programme

Excluded Combinations

None

Composition of Module Mark (including weighting of components)

Full-time / Part-time: 50% Examination and 50% Assignment

Pass Requirements

A minimum of 40% marks in the examination and a minimum of 40% marks in the assignment and overall 40% marks are required for a pass

Special Features

80% attendance in theory and 80% attendance in laboratory are required. It is likely that considerable time will be spent in School facilities outside of normal timetabled class time.

Courses for which this module is mandatory

M.Sc. [Engg.] in Digital Signal and Image Processing

Courses for which this module is a core option

2. TEACHING, LEARNING AND ASSESSMENT

Intended Module Learning Outcomes
After undergoing this module, students should be able to:
1. Explain the concepts and applications related to video and multimedia processing
2. Analyse, Select, model and Implement text, audio, image and video compression algorithms
3. Analyse and implement motion estimation and compensation algorithms
4. Proficiently use MATLAB to develop algorithms for video processing and multimedia applications

Indicative Content

Lectures


g. 3D video processing – 3D videos, 4D image/video sequences, applications of 3/4D video sequences, algorithms for processing 3D/4D video sequences, compression techniques, object detection and tracking techniques

Laboratory Practice based on MATLAB

1. Text Compression
2. Audio Compression
3. Image Compression
4. Video Compression
5. Motion Estimation

Teaching and Learning Methods
1. Theoretical Knowledge
a. Face to face lectures

2. Laboratory Practice (Skills)

3. Application Orientation and Problem Solving
a. Reading
b. Research
c. Written Examination
d. Assignment Solving and Documentation

Method of Assessment

Part-A
Examination [50% Weightage]
1. Viva/Presentation on a specified topic............................................ (10%)
2. Student performance on classroom tests.............................................. (10%)
3. Written examination............................................................................(30%)

Part-B
Assignment [50% Weightage]
Students are required to submit a word processed assignment report.

<table>
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<tr>
<th>Assessment</th>
<th>Learning Outcomes</th>
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<tbody>
<tr>
<td>Part A</td>
<td></td>
<td>X</td>
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<tr>
<td>Part B</td>
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Both examination scripts and assignment reports will be double marked.

Re-assessment
A minimum of 40 % marks in the examination and a minimum of 40% marks in the assignment are required for a pass in the module.
A student failing in any one of the components or both is considered as FAIL in the module. A failed student is required to retake the module at the next opportunity. A maximum of 3 attempts including the original are allowed.

Date of Last Amendment
November 2011
3. MODULE RESOURCES

Essential Reading

1. Module Notes

Recommended Reading

Books


Journals

- IEEE Transactions on Multimedia
- International Journal of Computers and Applications
- International Journal of Computer Vision
- Journal of Real Time Imaging

Web-Sites

- http://www.yuvsoft.com/ (accessed on 18th January 2012)

4. MODULE ORGANISATION

Module Leader

Name          B.N. Shobha
Room          B402-32
Telephone number  080-4906 5555 (Ext. 2318)
E-mail        shobha@msrsas.org

Date and Time of Examination

As per the timetable

Subject Quality and Approval Information

Subject Quality Group / Subject Board: Electronics and Electrical Engineering
Subject Assessment Board: Postgraduate Engineering and Management Programmes
Shortened title: Multimedia