

EBU5303

Multimedia Fundamentals

Introduction

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Who am I ?

*My name is Marie-Luce
Bourguet*

*I live in London and
in Tokyo*

*I speak English, French
and Japanese*

I have a daughter

*I love running, travelling,
and reading*



*I am Year 3 Academic
Advisor*

*I am director of the
Multimedia
Programme*

*I will teach you
two modules*

*I hope the classes
will be thought
provoking and
interactive!*

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Welcome to the Multimedia Programme !

Year 3 Sem 1

- EBU5303: Multimedia Fundamentals
- EBU6018: Advanced Transform Methods

Year 3 Sem 2

- EBU6230: Image and Video processing
- EBU6305: Interactive Media and Production

Year 4 Sem 1

- EBU7405: 3D Graphics Programming Tools
- EBU7240: Computer Vision

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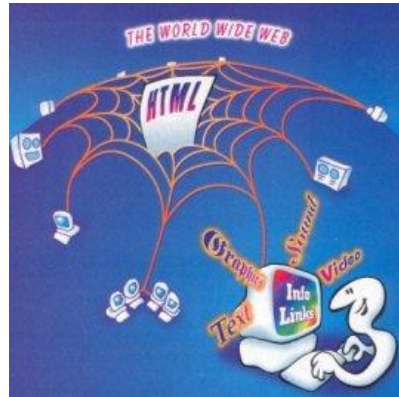
Multimedia - what's that?

(Interactive) multimedia is the integration of digital media including combinations of electronic text, graphics, moving images, and sound, into a structured digital computerised environment that allows people to interact with the data for appropriate purposes.

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World Wide Web

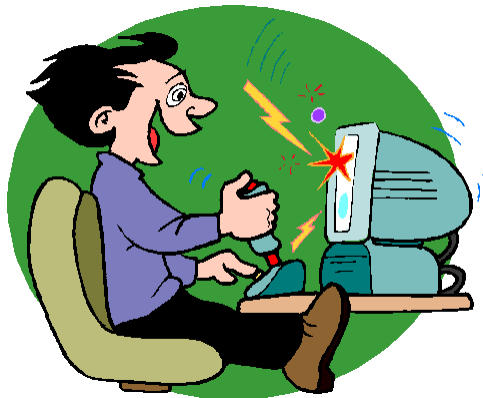
- World Wide Web



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Digital Games

- World Wide Web
- Computer games
- Online games
- Video games



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Interactive Television

- World Wide Web
- Computer games
- Online games
- Video games
- **Interactive television**



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Mobile Telephony and Apps

- World Wide Web
- Computer games
- Online games
- Video games
- Interactive television
- **Mobile telephony**



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E-Commerce

- World Wide Web
- Computer games
- Online games
- Video games
- Interactive television
- Mobile telephony
- **E-Commerce**



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Electronic Literature

- World Wide Web
- Computer games
- Online games
- Video games
- Interactive television
- Mobile telephony
- E-Commerce
- **Electronic literature**



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Augmented and Virtual Reality

- World Wide Web
- Computer games
- Online games
- Video games
- Interactive television
- Mobile telephony
- E-Commerce
- Electronic literature
- **Augmented and Virtual Reality**
- Etc.



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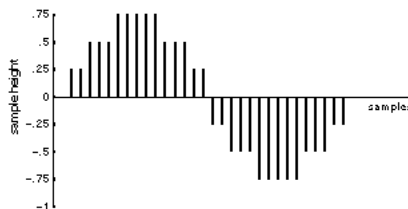
What is this module about?

- This module is an introduction to the **representation**, **analysis** and **processing** of digital multimedia.
- It covers topics such as:
 - sampling and quantization,
 - colour models,
 - 2D graphics and animation, sound, image and video representations,
 - compression and encoding, elements of psychoacoustics, elements of vision, JPEG, MPEG,
 - Elements of digital broadcasting.

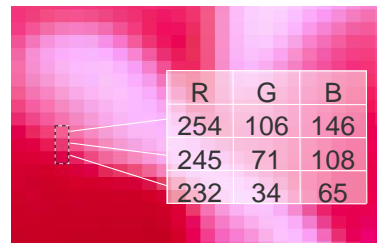
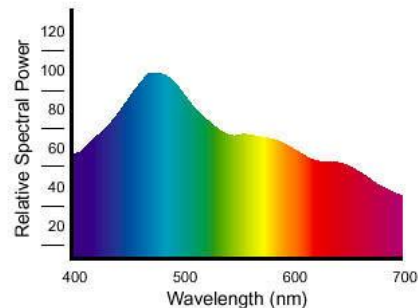
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EBU5303 Week 1 (this week)

- Introduction
- Digitisation
- Colour models
- Image representations

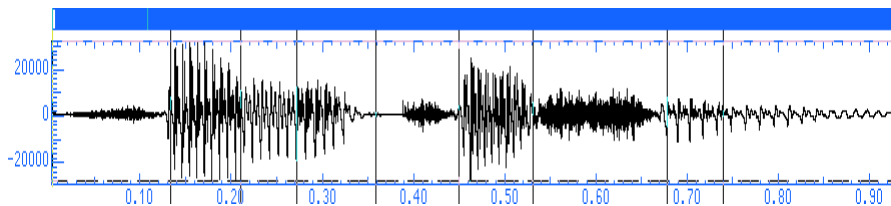
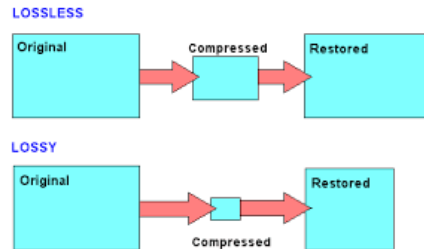


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EBU5303 Week 2

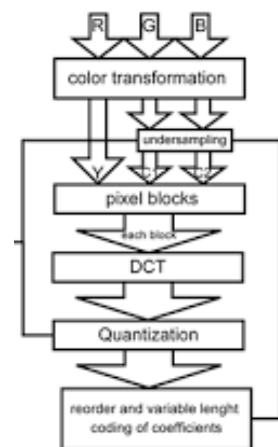
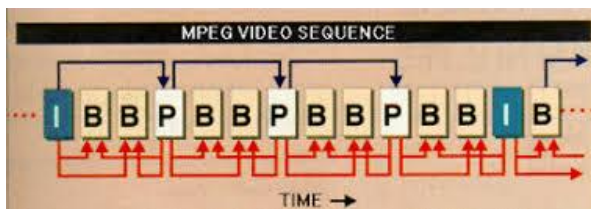
- Video / sound
- Lossless compression
- JPEG



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EBU5303 Week 3

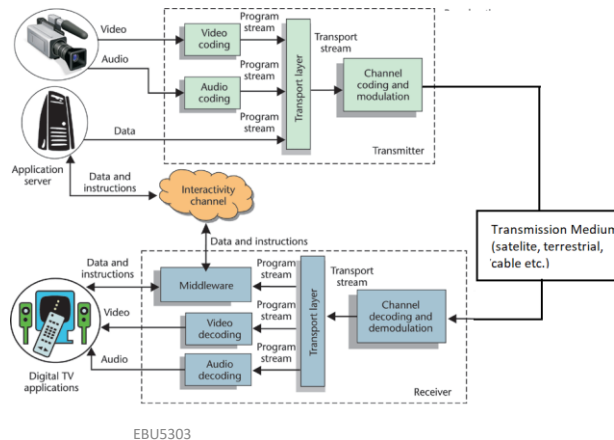
- MPEG
- Perceptual Encoding



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EBU5303 Week 4

- Digital Broadcasting
- Revisions



Friday split sessions

- Fridays will be dedicated to exercises.
- Class split by alphabetical order.
 - Session 1: TBD
 - Session 2: TBD

EBU5303 Assessment

- In class tests: 20% of the final mark
 - Class Test in week 11 (10% weight of total mark)
 - Class Test in week 15 (10% weight of total mark)
- Final exam: 80% of the final mark
 - Written, Closed book, 2 hours, 4 questions; Each question carries 25 marks roughly covering content of 1 week
- A minimum total mark of 40% is required to pass this module.
- A minimum total coursework (class tests) mark of 30% is required to pass this module.

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Warning

- Information on the slides is only intended to support the lectures.
- You must come to lectures and take notes
- You must come to exercise classes and participate
- You must use the interactive content on QMplus
- You are advised to read the recommended books on the topic

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Questions and Exercises



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Recommended books

The Science of Digital Media, by J. Burg

<http://burg.cs.wfu.edu/the-science-of-digital-media/>

Digital Multimedia, by Chapman & Chapman

Publisher: John Wiley & Sons; 3rd edition (20 Feb. 2009)

ISBN-10: 0470512164 / ISBN-13: 978-0470512166

Fundamentals of Multimedia (Texts in Computer Science),
by Ze-Nian Li, Mark S. Drew, Jiangchuan Liu

Publisher: Springer; 2nd ed. 2014 edition (23 April 2014)

ISBN-10: 3319052896 / ISBN-13: 978-3319052892

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