FIT2012
Digital media authoring

Unit Guide

Semester 2, 2009

The information contained in this unit guide is correct at time of publication. The University has the right to change any of the elements contained in this document at any time.

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FIT2012 Digital media authoring - Semester 2, 2009

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Introduction

Welcome to FIT2012 Digital Media Authoring for Semester 1, 2009. This 6 point unit is part of the Multimedia Applications major of the Bachelor of Information Technology and Systems degree. The unit has been designed to provide you with an understanding of the principles and practices of programming within a multimedia authoring environment. It explores developing applications using the current version of Flash and ActionScript 3.0.

Unit synopsis

This unit provides a focus on specialist tools and techniques that are used for developing content-rich interactive multimedia systems. This unit will cover fundamental multimedia principles, practical development processes, the integration of mixed-media assets, interactive design and programming for digital media and different technologies for product deployment. Students will create content-rich interactive CD-ROM products using industry standard authoring tools and will gain an understanding of the role of digital media within the broader technology environment.

Learning outcomes

At the completion of this unit students will have a theoretical and conceptual understanding of:

1. information technology and the software tools as they relate to (and are used in) multimedia systems;
2. the Macromedia Flash and Macromedia Director authoring environments for CD-ROM, DVD-ROM and web based systems development;
3. codecs and compression techniques associated with digital video, images and sound and the appropriate application of these for use in ROM development;
4. the formal process undertaken for preparing and documenting the various development stages of a multimedia system;
5. how to achieve a range of special effects which are commonly required for advanced interactive design in multimedia systems;
6. fundamental programming techniques and how to carry this knowledge across multiple languages.

At the completion of this unit students will have developed attitudes that enable them to:

1. outline strengths and weaknesses of information technology in the context of the development and use of multimedia systems;
2. make informed decisions on the most appropriate blend of tools and technologies to support a given multimedia system requirement and formulate constructive criticism within the construct of critical analysis.

At the completion of this unit students will have the skills to:

1. apply advanced interactive design techniques to a multimedia system using time/frame based authoring environments;
2. use a blend of industry standard multimedia tools and products;
3. write code to assist in advanced system interaction with the programming languages Lingo and ActionScript;
4. further enhance and refine user interface and navigational design and creativity skills in multimedia systems;
5. specify an appropriate toolset for developing and supporting advanced features/functionality in a multimedia system.
At the completion of this unit students will have developed the teamwork skills needed to build confidence in formal presentation techniques presenting personal ideas, research concepts and developmental progress and discuss and share developmental processes and techniques within an informal populated environment.

Contact hours

4 x contact hrs/week (comprising 2 hrs lecture, 2 hrs tutorial) plus 8 hrs/week self-directed study, project/assignment work.

Workload

Broadly the time required to complete this topic is shown in the following table, but note this is just a rough indication. You may need to spend more time on some activities depending on your background and knowledge. In addition, you need to spend extra time on assignments and review.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attending lectures and reviewing notes</td>
<td>3 hours</td>
</tr>
<tr>
<td>Doing activities in lab classes</td>
<td>2 hours</td>
</tr>
<tr>
<td>Readings</td>
<td>3 hours</td>
</tr>
<tr>
<td>Contact (e-mail, consultation, etc.)</td>
<td>30 minutes</td>
</tr>
<tr>
<td>Total</td>
<td>8 hours 30 minutes</td>
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</tbody>
</table>

Unit relationships

Prerequisites

FIT1012

Prohibitions

IMS2402, MMS2402

Relationships

FIT2012 Digital Media Authoring is a core unit in the Bachelor of Information Technology and Systems - Major in Multimedia. It is a pre-requisite for FIT2016 Human Computer Interaction for Multimedia, FIT3039 Studio 1, FIT3033 Principles of Educational Multimedia.
Teaching and learning method

This unit will be delivered via a 2 hour lecture and a 2 hour laboratory class each week.

Lectures will be used to present and explain programming principles and practices within the context of the authoring environment of Flash.

Laboratories will be used for practical experience in the development, coding, testing and debugging of the functions specific to the authoring environment.

Timetable information

For information on timetabling for on-campus classes please refer to MUTTS, http://mutts.monash.edu.au/MUTTS/

Tutorial allocation

On-campus students should register for tutorials/laboratories using the Allocate+ system: http://allocate.cc.monash.edu.au/

Unit Schedule

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
<th>Study guide</th>
<th>References/Readings</th>
<th>Key dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Overview of the Unit, Overview of Flash Basics, Game Development &amp; Design Principles</td>
<td>Assignment Overview &amp; Documentation, Drawing tools and techniques, Appropriate organisation of timeline</td>
<td>Green: 1 and 2</td>
<td>Complete Lab tasks</td>
</tr>
<tr>
<td>2</td>
<td>Flash Symbols, ActionScript Basics, Navigation &amp; Events</td>
<td>Applying interactive affordance in Flash, Navigation working with buttons, Drop Menus, MovieClip behaviour and hierarchy</td>
<td>Green: 3 and 4; Shupe: 1, 2 &amp; 5</td>
<td>Complete Lab tasks</td>
</tr>
<tr>
<td>3</td>
<td>Flash Animation Basics</td>
<td>Animation in Flash Using Tweening Techniques, Motion Guides and Masks</td>
<td>Green: 6, 7 &amp; 8</td>
<td>Submit completed Game Specification Document</td>
</tr>
<tr>
<td>4</td>
<td>Using Flash Components, Input and Form Elements</td>
<td>Create a basic component-based form, Accept input from components and store in variables</td>
<td>Green: 11</td>
<td>Complete Lab tasks and Demonstrate Splash Animation</td>
</tr>
<tr>
<td>5</td>
<td>Scripted Animation, MovieClip objects</td>
<td>Linking objects to MovieClips, using the Flash Display List feature, conditional programming</td>
<td>Shupe: 4, 7, 8 &amp; 9</td>
<td>Complete Lab tasks and Demonstrate Options Selections</td>
</tr>
<tr>
<td>6</td>
<td>Reading from text and XML files), using variables to track data, random numbers</td>
<td>Using externally loaded SWF content, Load data from text and XML files, exploring Flash's built-in random function</td>
<td>Green: 13; Shupe: 14</td>
<td>Complete Lab tasks and Submit Navigation / Graphic Game Prototype</td>
</tr>
<tr>
<td>Week</td>
<td>Topic</td>
<td>Description</td>
<td>Assignments</td>
<td>Notes</td>
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<tr>
<td>7</td>
<td>Flash object oriented design, Introduction to custom classes</td>
<td>Planning and creating an external class, Public/private methods and variables</td>
<td>Shupe: 3 &amp; 6</td>
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<td></td>
<td></td>
<td></td>
<td>Complete Lab tasks and Demonstrate Randomisation</td>
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<tr>
<td>8</td>
<td>Exploring keyboard events, Using Movie Clips to Change States</td>
<td>Capturing keyboard events, Moving objects with the keyboard, collision detection</td>
<td>Shupe: 3 &amp; 10</td>
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<td></td>
<td></td>
<td></td>
<td>Complete Lab tasks</td>
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<td>9</td>
<td>Advanced ActionScript Techniques, Arrays, Strings and Saving Data</td>
<td>Using arrays, random numbers, text formatting and saving data in context by building simple applications</td>
<td>Green: 6; Shupe: 4, 6 &amp; 10</td>
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<td></td>
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<td></td>
<td>Complete Lab tasks and Demonstrate Data Tracking</td>
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<tr>
<td>10</td>
<td>Using Sound Objects and Video in Flash</td>
<td>Basic use of externally loaded streaming content (background music and effects), FLV video with Flash Video components</td>
<td>Green: 5 &amp; 10; Shupe 11 &amp; 12</td>
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<td></td>
<td></td>
<td></td>
<td>Complete Lab tasks</td>
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<td><strong>Mid semester break</strong></td>
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<td>11</td>
<td>Optimising Flash for Web and CD Publishing</td>
<td>Demonstrating using a Pre-loader, Programming Checklist, Debugging and Tweaking Game Code</td>
<td>Green 15; Shupe 13</td>
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<td></td>
<td>Demonstrate Music and Sound Effects</td>
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<tr>
<td>12</td>
<td>Publishing Flash Movies - CSS, HTML</td>
<td>Additional web publishing techniques</td>
<td>Green 6, 12 &amp; 14; Shupe 13</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Submit completed Game Development Project</td>
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<tr>
<td>13</td>
<td>Revision</td>
<td>Student Game Demonstrations</td>
<td></td>
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Unit Resources

Prescribed text(s) and readings

**Foundation Flash CS4 for Designers**
By Tom Green, David Stiller
Friends of Ed (2009)

**Learning ActionScript 3.0 - A Beginner's Guide**
By Rich Shupe with Zevan Rosser
O'Reilly (2008)

See also: "Recommended Reading" below for a list of recommended references.

Text books are available from the Monash University Book Shops. Availability from other suppliers cannot be assured. The Bookshop orders texts in specifically for this unit. You are advised to purchase your text book early.

Recommended text(s) and readings

Required software and/or hardware

All software required for use in this unit can be accessed from allocated campus laboraties/tutorial rooms.

The software used in this unit consists of:

- Adobe Flash CS4 Professional
- Adobe Photoshop CS4
- Adobe Illustrator CS4

30 Day Trial/Evaluation versions of the named software can be dowloaded for personal use if neccessary from the following websites:

- http://www.adobe.com/

Equipment and consumables required or provided

Students may use the facilities available in the computing labs. Information about computer use for students is available from the ITS Student Resource Guide in the Monash University Handbook. You will need to allocate up to 8 hours per week for use of a computer, including time for newsgroups/discussion groups.

Study resources

Study resources we will provide for your study are:

available on the FIT2012 web site on MOODLE. It will host lecture slides, weekly lab requirements and assignment specifications. In addition, supplementary resources may also be posted.
Assessment

Overview

Examination: 40%
Practical Assignments: 60%

Faculty assessment policy

To pass a unit which includes an examination as part of the assessment a student must obtain:

- 40% or more in the unit's examination, and
- 40% or more in the unit's total non-examination assessment, and
- an overall unit mark of 50% or more.

If a student does not achieve 40% or more in the unit examination or the unit non-examination total assessment, and the total mark for the unit is greater than 44% then a mark of no greater than 44-N will be recorded for the unit.

The unit is assessed with one major assignment with 3 major project milestones and 5 minor project milestones (60%) and a three hour closed book examination (40%). To pass the unit you must:

- achieve no less than 40% of the possible marks in the exam
- achieve no less than 40% of the possible total marks for the unit's total non-examination assessment (ie: game assignment)
- achieve no less than 50% of possible marks

If a student does not achieve 40% or more in the unit examination or the unit non-examination total assessment, and the total mark for the unit is greater than 44% then a mark of 44-N will be recorded for the unit.

Assignment tasks

Assignment coversheets

Assignment coversheets are available via "Student Forms" on the Faculty website: http://www.infotech.monash.edu.au/resources/student/forms/

You MUST submit a completed coversheet with all assignments, ensuring that the plagiarism declaration section is signed.

Assignment submission and return procedures, and assessment criteria will be specified with each assignment.

- Assignment task 1

  Title:
  Game Development Project
  Description:
  The practical project will be based on the Flash CS4 authoring environment covered during the semester.

  From the following game scenarios, select one to develop for your major assessment task. It is important that you select carefully because the Game Design Specifications will be required by Week 3 and a complete navigational/graphical prototype will be required by Week 6. This is to
ensure that you have an appropriate amount of time to implement the programming aspects of the
game, and to assist in time management of the project.

- Variation on a "Make a Beetle" Game (suitable for novice programmers)
- Variation on a "Hunt the Hurkle" Game (suitable for intermediate programmers)
- An Educational Tutorial and Quiz Application (suitable for advanced programmers)

The **Game Design Specification** documentation is designed to outline and organise the
development process of the project. Appropriate headings are provided as a guide to what you
should include in the design specifications for your selected game project. Be aware that part of
your final assessment will include how well you develop your project in accordance to what you
stipulate in this document. In other words, a small but completed project will score very well as
opposed to a large incomplete one!

The **Navigation/GUI Prototype** will demonstrate how you have structured your game and show
the majority of your interface design. The game components DO NOT have to function for this
prototype as dummy data and/or game components can be used to show the overall look-and-feel
of the game. The prototype should include a clearly defined internal structure on the time line (as
demonstrated in labs), clearly show the main screen elements of the game, and an example of each
major screen of the game. [NOTE: the individual screen elements are only there to show their
position on the screen and DO NOT have to function at this stage. All that is required is a complete
screen layout with appropriate design suited to the game you are developing.]

The final part of this assessment is the submission of a **functional game**, developed according to
the game specification documents submitted in Week 3. Each scenario includes 5 common
components for must also be successfully integrated into the final game. These will also be covered
in the weekly lab tasks conducted throughout the semester and will be assessed separately but are
an integral part of your final mark. These components cover the basic functions or features required
to make the game have at least an elementary level of interaction. Additionally, you must
successfully integrate the 3 project enhancements as described under the individual game scenarios.
These enhancements cover a range of graphic, animation, audio and programming options to allow
students to target their strengths and apply them accordingly.

Weekly tasks will be available to download from MOODLE. It is expected that students will
download the materials relevant to each week's activity. Working through each activity will give
students an understanding of various techniques and their suggested application, however, it will be
up to the each individual student to determine how to best implement these techniques to best suit
their needs.

**Weighting:**
60%

**Due date:**
By 4pm Thursday of the specified week

**Remarks:**
Full details are available in the DMA Unit Outline 09-2 document that is available for download
from the MOODLE site.

**Examination**

- **Weighting:** 40%
  - Length: 3 hours
  - Type (open/closed book): closed book
  - Remarks:
The end-of-unit examination will be a test of knowledge on all aspects of the unit from conceptual theories, practical development, interactive design principals and practical developmental tools and techniques. The questions will be drawn from a variety of sources including the textbook, lectures and lab notes.

See Appendix for End of semester special consideration / deferred exams process.

Due dates and extensions

Please make every effort to submit work by the due dates. It is your responsibility to structure your study program around assignment deadlines, family, work and other commitments. Factors such as normal work pressures, vacations, etc. are not regarded as appropriate reasons for granting extensions. Students are advised to NOT assume that granting of an extension is a matter of course.

Students requesting an extension for any assessment during semester (eg. Assignments, tests or presentations) are required to submit a Special Consideration application form (in-semester exam/assessment task), along with original copies of supporting documentation, directly to their lecturer within two working days before the assessment submission deadline. Lecturers will provide specific outcomes directly to students via email within 2 working days. The lecturer reserves the right to refuse late applications.

A copy of the email or other written communication of an extension must be attached to the assignment submission.

Refer to the Faculty Special consideration webpage or further details and to access application forms: http://www.infotech.monash.edu.au/resources/student/equity/special-consideration.html

Late assignment

Assignments received after the due date will be subject to a penalty of 10% per day (including weekend days).

Assignments received later than one week after the due date will not be accepted for assessment unless prior (alternate) arrangements have been made with the unit Lecturer due to special circumstances.

Return dates

Students can expect assignments to be returned within two weeks of the submission date or after receipt, whichever is later.
Appendix

Please visit the following URL: http://www.infotech.monash.edu.au/units/appendix.html for further information about:

- Continuous improvement
- Unit evaluations
- Communication, participation and feedback
- Library access
- Monash University Studies Online (MUSO)
- Plagiarism, cheating and collusion
- Register of counselling about plagiarism
- Non-discriminatory language
- Students with disability
- End of semester special consideration / deferred exams