



**Year 10**

**Syllabus**

**Version 2**

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## Learning Outcomes

LO	Level 3	Level 2	Level 1
1	Modify primitives by joining methods and create a complex <b>3D model</b> using various textures.	Create a model using various primitives to make up a new model and use multiple textures	Open the application and create one primitive and apply a texture.
2	Create and edit an existing <b>sound</b> wave in a new innovative manner and export it in WAV format.	Recognise peaks and different sections of a soundwave. Apply noise reduction effects on a recorded sound clip.	Open the application, open a sound file and modify it and save it.
3	Autonomously <b>research</b> and make a presentation of multiple slides on the effect of the <b>digital divide</b> .	Independently create a presentation on the digital divide with multiple slides.	Create a simple presentation on basics of lack of resources with supervision.
4	Autonomously <b>research</b> and make a presentation of multiple slides on the effect of <b>AI and humans</b> .	Independently create a presentation on AI with multiple slides	Create a simple presentation on AI with supervision.
5	Can perform simple <b>data analysis</b> through built-in functions of an electronic spreadsheet such as finding totals, average, minimum and maximum values.	Can present data in an electronic spreadsheet and use it to perform simple arithmetic operations automatically.	Can present data formatted in tabular form.

## Topics and Learning Outcomes in C3.4

Topics	LO
3D Modelling	1 I can create a 3D-model using open source software, e.g. Google Sketchup™ which will include: The modification of primitives; The combination and subtraction of two primitives; The application of materials.
Sound Editing	2 Abiding to data protection and copyright laws I can use an open source sound editing application e.g. Audacity to perform the following tasks: Read a sound wave, apply an effect on a soundwave to reduce noise, cut pieces of a sound wave to create a new sound wave.
Digital Divide	3 I can present ways how to reduce the digital divide e.g. reducing information poverty, create awareness about information censorship and provide global access to resources.
Robotics and AI	4 I can demonstrate in any chosen medium the shifting characteristics of Robotics and AI (Artificial Intelligence) in the film industry throughout time.
Data Processing	5 I can present textual and numeric data in an electronic way. I can use a spreadsheet application to perform automatic calculations using simple arithmetic operations ( + , - , * , / ); using built-in functions to find the total, average, maximum, minimum of a list of values.

**Coursework 1: Edit a Sound file**

**Coursework 2: Create a 3D model**

## 1. 3D Modelling

1. I can create a 3D-model using open source software, e.g. Sketchup™ which will include: The modification of primitives; The combination and subtraction of two primitives; The application of materials.

Topics to be covered /Skill Set	Sub-topics
Open the application and create one primitive and apply a texture.	Change model Length Units to: mm, cm, m. Use shape tools to draw: rectangle, circle. Change camera views: Standard Views, Orbit, Pan, Zoom, Zoom Extents. Use Undo/Redo. Use Select tool. Use Push/Pull tool to create 3D object: box, cylinder. Use the Paint tool to apply: colour, texture.
Create a model using various primitives to make up a new model and use multiple textures	Use Line tool. Use Erase tool to erase lines and edges. Use Move tool to move and copy selected entities. Use Offset tool. Divide Line. Select all connected geometry. Group objects to make: a group, a component.
Modify primitives by joining methods and create a complex 3D model using various textures.	Use of arc tool Use of Tape Measure tool Use of Scale/Stretch tool Use the Move tool to move, stretch, copy and array selected entities.

## 2. Sound Editing

- Abiding to data protection and copyright laws I can use an open source sound editing application e.g. Audacity to perform the following tasks: Read a sound wave, apply an effect on a soundwave to reduce noise, cut pieces of a sound wave to create a new sound wave.

Topics to be covered /Skill Set	Sub-topics
Open the application, open a sound file and modify it and save it.	Import a sound file into a new project. Select a section of the clip. Select entire clip. Edit clip using cut, delete, copy, paste. Save the project.
Recognise peaks and different sections of a soundwave. Apply noise reduction effects on a recorded sound clip	Select and play part of a sound clip. Add new track Mute/Solo track Apply Fade in, Fade out effects.
Create and edit of an existing sound wave in a new innovative manner and export it in MP3 format.	Apply noise reduction on a clip. Generate silence on a clip. Apply effects like: Amplify, Change Pitch, Change Speed, Reverse Export as wav.

## 3. Digital Divide

- I can present ways how to reduce the digital divide e.g. reducing information poverty, create awareness about information censorship and provide global access to resources.

Topics to be covered /Skill Set	Sub-topics
3.1 Define the term Digital Divide.	Give examples to demonstrate an understanding of the digital divide.
3.2 Understand how the digital divide can be overcome or reduced.	List measures to reduce the digital divide.

## 4. Robotics and Artificial Intelligence (AI)

4. I can demonstrate in any chosen medium the shifting characteristics of Robotics and AI (Artificial Intelligence) in the film industry throughout time.

Topics to be covered /Skill Set	Sub-topics
Define the term Artificial Intelligence	
Understand how AI changed the film industry	

## 5. Data Processing

5. I can present textual and numeric data in an electronic way. I can use a spreadsheet application to perform automatic calculations using simple arithmetic operations (+, -, \*, /); using built-in functions to find the total, average, maximum, minimum of a list of values.

Topics to be covered /Skill Set	Sub-topics
Present data in a table using a spreadsheet application.	Open a spreadsheet application. Identify a spreadsheet. Identify rows and columns. Locate cells using cell references.
Manipulating the contents in a spreadsheet	Change the size of columns and rows to fit the contained data. Insert, move, delete rows and columns.
Manipulating cells	Enter data in cells. Understand that a cell can take only one data element: a cell may contain a label, a value or a formula. Enter data in cells: labels or numeric values. Format cells: bold, italic, underline, font colour, font size, cell fill colour. Apply borders to cells. Align data in cells: Left, Centre, Right Format cells to display numbers correct to a specific number of decimal places. Format cells to display currency.

Formulas	<p>Create formulas using cell references and arithmetic operators (+, -, *, /).</p> <p>Use cell references rather than numbers in formulas.</p> <p>Understand and use relative cell referencing in formulas.</p> <p>Copy formulas that contain relative cell references.</p>
Functions	<p>Understand how to refer to a range of adjacent cells when using functions.</p> <p>Use built-in functions to calculate the sum, average, maximum and minimum values of a given range of cells.</p>
Prepare for Printing	<p>Change spreadsheet orientation: Landscape, Portrait.</p> <p>Turn on, off display of gridlines for printing purposes.</p> <p>Preview a spreadsheet before printing.</p> <p>Change the number of copies to be printed.</p> <p>Print a selected cell range from a spreadsheet.</p> <p>Print the entire spreadsheet.</p>