

KS4 Curriculum Overview: ICT

Rationale: For Year 11

The curriculum intent for Y11 is that students will apply the skills learnt in year 10 to the coursework assignment set by OCR Cambridge Nationals. Students will work on R070 Using Augmented Reality to present information coursework. Augmented Reality (AR) has made it possible to present information so that users can see more detail in items/ products with 2D or 3D images and can place the item digitally in their surroundings. AR provides increased engagement, interaction and a richer user experience. Businesses in different sectors such as IT, architecture, retail and hospitality, education and government are presenting information and/or products in a digital world using a range of digital devices. Augmented Reality software development kits (SDK) are used to create the AR product for different contexts. In this unit students will learn the basics of Augmented Reality (AR) and the creation of a model prototype product to showcase how it can be used appropriately for a defined target audience to present information. Students will also learn the purpose, use and types of AR in different contexts and how they are used on different digital devices. Students will develop the skills to be able to design and create an AR model prototype, using a range of tools and techniques. Students will also be able to test and review their AR model prototype.

Term / Length of Unit	Outline	Assessment	Home Learning	Resources	vocabulary/ reading strategy
Y11 Autumn	R070: Using Augmented Reality to present information 1.1 Purpose and uses of Augmented Reality (AR) 1.2 Types of Augmented Reality (AR) and user interaction 1.3 Devices used with Augmented Reality (AR) 2.1 Planning and design considerations Purpose and user requirements	OCR Set assessment. Have to have secure accounts. Students to work on solving independently	Online eRevision topic 1 Online eRevision for topic 2 Online eRevision for topic 3 Online eRevision for topic 4	Topic 1 Augmented reality PPT Purpose and Uses of Augmented Reality What is reality worksheet 1 1.2 Types of Augmented Reality 1.3 Devices used with Augmented Reality Home furniture design ideas (ikea.com) Design process for creating an AR recipe app (YouTube) Designing an AR dashboard (YouTube) Use of augmented reality in education (YouTube) Topic 2	Augment reality Markers Trigger Layers Testing Pre teaching vocabulary Model subject specific-reading

	<p>Target audience</p> <p>Content</p> <p>Assets Audio</p> <p>Charts and graphs</p> <p>Hyperlink/Weblink</p> <p>Photograph(s) /Image(s)</p> <p>Text</p> <p>Video</p> <p>Triggers Object recognition / Marker-based</p> <p>Location (GPS) based / Markerless</p> <p>Superimposition</p> <p>Layers / User Interaction Action flow</p> <p>Static</p> <p>Interactive</p>			<p>2.1 Planning and Design Considerations</p> <p>Learn more about triggering augmented reality experiences with AR markers (linkedin.com/pulse)</p> <p>Top tools to build augmented reality mobile apps (infoq.com)</p> <p>What a Race: the world's first live augmented reality race with the 2018 Acura TLX -(YouTube)</p> <p>Live Texturing of Augmented Reality Characters from Colored Drawings (YouTube)</p> <p>2.2 Design Tools</p> <p>Guide to Flowchart Symbols, from Basic to Advanced (gliffy.com)</p> <p>3 Basic Types of Mind Maps (edrawsoft.com)</p> <p>How to create great mood boards (YouTube)</p> <p>Mind map software summary</p> <p>Flowchart software (lucidchart.com)</p>	
	<p>2.2 Design Tools</p> <p>Tools used to design the content and action flow for an AR product</p> <p>Flowcharts</p> <p>Mind Maps</p> <p>Mood boards</p> <p>Storyboards</p> <p>Visualisation diagrams</p> <p>Wireframes</p>				

				<p>Ten best online flowchart software of 2021 (thedigitalprojectmanager.com)</p> <p>Storyboarding and wireframing (part 1) (couseara.org)</p> <p>Visualisation diagrams (lakelandscomputing.com)</p> <p>What is a wireframe and how to design them: a beginners guide (designshack.net)</p> <p>Flowchart software (lucidchart.com)</p> <p>Ten best online flowchart software of 2021 (thedigitalprojectmanager.com)</p> <p>Ten tools for creating infographics and visualisations (moz.com)</p> <p>Wireframe software (mockflow.com)</p> <p>Wireframe software (balsamiq.com)</p> <p>Topic 3 Creating an Augmented Reality model</p> <p>Prototyping designing software (balsamiq.com)</p> <p>Design and prototyping tool for web and mobile apps (justmind.com)</p>	
	<p>3.1 Augmented Reality (AR) model prototype Characteristics Not full product Confirms functionality Confirms aesthetics Has access to real data</p> <p>3.2 Triggers</p>				

	<p>Trigger characteristics Must be unique Should not contain</p> <ul style="list-style-type: none"> o blurred images o too much text o too much blank space <p>Object recognition / Marker-based Location based / Markerless</p> <p>☐ Superimposition</p> <p>3.3 Layers / user interaction</p> <p>Single and multiple layers Access to layers Static Interactive</p> <ul style="list-style-type: none"> o Swipe o Click/select o Voice <p>3.4 information output</p> <p>Audio Chart(s) and graph(s) Hyperlink(s)/Weblink(s) Photograph(s) /Image(s) Text Video(s)</p> <p>4.1 Testing</p> <p>How to carry out testing of an AR model prototype Technical testing User testing</p> <p>Using a test plan Test number What is being tested Expected result Actual result Remedial action</p>			<p>A design platform (figma.com)</p> <p>Transformative collaboration (invisionapp.com)</p> <p>Different types of prototypes (reforge.com)</p> <p>How to create triggers for augmented reality (YouTube)</p> <p>Image recognition that triggers augmented reality (ted.com)</p> <p>9 essential terms you need to know in augmented and virtual reality (industry.com)</p> <p>How to make an AR app in 6 minutes (YouTube)</p> <p>Topic 4 Testing User testing design process (maze.co) Technical testing (pentalogy.com) Review strategy and effective reviews (mindtools.com)</p>	
--	--	--	--	--	--

			<p>homework - research into what IoT is used at home.</p> <p>Online eRevision for topic 6 Assessment</p>	<p>What is the internet of things? (wired.co.uk)</p> <p>What is the internet of things (IoT)? (ibm.com)</p> <p>IoT – internet of things (YouTube)</p> <p>What is IoT (internet of things)? (YouTube)</p> <p>The four pillars of IoT (open.edu)</p> <p>6.2 Application areas in everyday life Complete workbook</p> <p>The 9 most important applications of the Internet of Things (fractal.com)</p> <p>Real world IoT applications in different domains (edureka.co)</p> <p>Top uses of IoT (jigsawacademy.com)</p> <p>Internet of things on IBM cloud (ibm.com)</p> <p>Topic 6 Assessment</p>	
--	--	--	--	---	--

Y11 Summer	Any improvement on R070 Exam preparation R050	Students will work on improvements on R070 to get a higher mark. Assignment set by OCR from start of year. Assessment R050	Exam papers Exam Questions	Dependent on feedback from moderator. Action made based on that. Revision resources based on R050 Workbook A, B, C and D	Audience Demographics smart city Telematic Internet of Everything Modelling exam questions Pre teaching
------------	--	--	-------------------------------	--	---