

Long term planning grid IT

|                | <b>Autumn 1</b>   | <b>Autumn 2</b>   | <b>Spring 1</b>  | <b>Spring 2</b>  | <b>Summer 1</b>  | <b>Summer 2</b> |
|----------------|---|---|--|--|--|-----------------|
| <b>Year 13</b> | <p>Unit 17 the Internet of everything</p> <p>Duration of lessons: 16</p> <p>What will students learn:</p> <p>1.1 Things, i.e.:</p> <ul style="list-style-type: none"> <li>• physical objects</li> <li>• experiential interactions</li> <li>• aids to people</li> <li>• aids to society/community</li> <li>• machines</li> </ul> <p>1.2 Where the IoE is used</p> <p>1.3 Applications of the use of the IoE, i.e.:</p> <ul style="list-style-type: none"> <li>• body/health</li> <li>• home/garden</li> <li>• city/neighbourhood</li> <li>• industry</li> <li>• the environment</li> </ul> <p>1.4 Global impacts, i.e.:</p> <ul style="list-style-type: none"> <li>• positive</li> <li>• negative</li> <li>• cost savings</li> <li>• increased productivity</li> <li>• new sources of revenue</li> </ul> | <p>Unit 17 the Internet of everything</p> <p>Duration of lessons: 16</p> <p>What will students learn:</p> <p>Be able to repurpose technologies to extend the scope of the IoE</p> <p>2.1 Developments, i.e.:</p> <ul style="list-style-type: none"> <li>• body/health, e.g.: <ul style="list-style-type: none"> <li>o sensors, e.g. wearable thermometer</li> <li>o social safety wearables</li> <li>o Wi-Fi mattress cover</li> <li>o Bluetooth stethoscope</li> <li>o biometric patch</li> <li>o running analytics</li> <li>o Bluetooth weather sensor</li> <li>o Bluetooth maps for visually impaired</li> <li>o Bluetooth sunglasses</li> </ul> </li> <li>• home/garden, e.g.: <ul style="list-style-type: none"> <li>o smart air conditioner</li> <li>o Bluetooth tape measure</li> <li>o smart locks</li> <li>o smart lights</li> <li>o smart batteries</li> <li>o global location devices</li> </ul> </li> </ul> | <p>Unit 17 the Internet of everything</p> <p>Duration of lessons: 16</p> <p>What will students learn: Be able to present concept ideas for repurposed developments</p> <p>3.1 Business proposal, i.e.:</p> <ul style="list-style-type: none"> <li>• target audience</li> <li>• processing required</li> <li>• data to be exchanged</li> <li>• things</li> <li>• networking requirements</li> <li>• devices to be used</li> <li>• security issues</li> </ul> <p>3.2 Pitch, e.g.:</p> <ul style="list-style-type: none"> <li>• report</li> <li>• presentation</li> <li>• website/multimedia</li> </ul> <p>3.3 Feedback, e.g.:</p> <ul style="list-style-type: none"> <li>• stakeholders</li> <li>• developers</li> <li>• written</li> <li>• verbal</li> </ul> <p>3.4 Stakeholder considerations, i.e.:</p> | <p>Unit 17 the Internet of everything</p> <p>Duration of lessons: 16</p> <p>Students will be submitting their coursework for marking and feedback until their desired grade is achieved.</p> <p>The unit is 100% coursework.</p> | <p>Unit 17 the Internet of everything</p> <p>Duration of lessons: 16</p> <p>Students will be submitting their coursework for marking and feedback until their desired grade is achieved.</p> <p>The unit is 100% coursework.</p> | N/A             |

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|  | <ul style="list-style-type: none"> <li>• enhanced citizen experiences</li> </ul> <p>1.5 The four pillars of the IoE, i.e.:</p> <ul style="list-style-type: none"> <li>• people</li> <li>• data</li> <li>• process</li> <li>• things (devices and objects)</li> </ul> <p>1.6 People, i.e.:</p> <ul style="list-style-type: none"> <li>• students</li> <li>• members of society</li> <li>• connecting people in relevant ways</li> </ul> <p>1.7 People and how they connect, i.e.:</p> <ul style="list-style-type: none"> <li>• devices</li> <li>• social networks</li> <li>• wearables</li> </ul> <p>1.8 Converting data into information to allow people to make decisions</p> <p>1.9 Data, i.e.:</p> <ul style="list-style-type: none"> <li>• raw data</li> <li>• connected things (devices)</li> <li>• analysis</li> <li>• decisions</li> <li>• results</li> </ul> <p>1.10 Information gathering devices, i.e.:</p> <ul style="list-style-type: none"> <li>• computers</li> </ul> | <ul style="list-style-type: none"> <li>o Bluetooth measurement jars</li> <li>o Bluetooth flower pots</li> <li>o wireless water shutoff</li> <li>o Wi-Fi shopping lists</li> <li>o solar powered window blinds</li> <li>o Wi-Fi gas and carbon monoxide detectors</li> <li>• city/neighbourhood, e.g.:</li> <li>o real-time air traffic</li> <li>o smart signage</li> <li>o bicycle barometer</li> <li>o city dashboard</li> <li>o intelligent street lights</li> <li>o taxi locator</li> <li>o surveillance systems</li> <li>o wearable air quality sensor</li> <li>o smart urban furniture</li> <li>o connected car safety devices</li> <li>• industry, e.g.:</li> <li>o industrial smart helmet</li> <li>o smart glasses for warehouses</li> <li>o wireless pest monitoring</li> <li>o smart paving capturing kinetic energy</li> <li>o intelligent packaging</li> <li>o smart luggage/cargo</li> <li>o workforce driving monitors</li> </ul> | <ul style="list-style-type: none"> <li>• who benefits from the application?</li> <li>• how does society benefit?</li> <li>• how do companies benefit?</li> <li>• who will develop the application?</li> </ul> <p>3.5 Revision of proposal, i.e.:</p> <ul style="list-style-type: none"> <li>• analyse the feedback</li> <li>o identify types of problems</li> <li>o determine consistency of comments</li> <li>• decision on whether the proposal is still viable</li> <li>• make changes to proposal in line with feedback and viability considerations</li> </ul> <p>3.6 Possible success criteria (must be measurable), e.g.:</p> <ul style="list-style-type: none"> <li>• improved efficiency</li> <li>• increase in profits</li> <li>• increase in productivity</li> <li>• reduction in wasted time</li> </ul> |  |  |  |
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| <ul style="list-style-type: none"> <li>• smart phones</li> <li>• vehicles</li> <li>• other devices with sensors</li> </ul> <p>1.11 Process, i.e.:</p> <ul style="list-style-type: none"> <li>• delivery of information</li> <li>• delivery to whom</li> <li>• timing of processing</li> <li>• methods to deliver processed information</li> </ul> <p>1.12 Processing capabilities, i.e.:</p> <ul style="list-style-type: none"> <li>• local</li> <li>• server</li> <li>• big data technologies</li> <li>• cloud services</li> </ul> <p>1.13 Connectivity, i.e.:</p> <ul style="list-style-type: none"> <li>• wired</li> <li>• Wi-Fi</li> <li>• Bluetooth</li> <li>• local</li> <li>• cloud-based</li> <li>• data centre-based</li> <li>• radio-frequency identification (RFID)</li> </ul> <p>1.14 Networked connection, i.e.:</p> <ul style="list-style-type: none"> <li>• manageable</li> <li>• intelligent</li> <li>• secure</li> <li>• scalability</li> <li>• congestion</li> </ul> | <ul style="list-style-type: none"> <li>o connected e-paper displays</li> <li>o Wi-Fi cold storage monitoring</li> <li>o smart noise sensors</li> <li>o smart bottle labels</li> <li>o wireless calving alert sensors</li> <li>o real-time remote excavation</li> <li>• the environment, e.g.:             <ul style="list-style-type: none"> <li>o environmental monitoring</li> <li>o wildlife tracking</li> <li>o flood detection network</li> <li>o illegal deforestation monitoring</li> <li>o landslide detection systems</li> </ul> </li> </ul> <p>2.2 Feasibility study, i.e.:</p> <ul style="list-style-type: none"> <li>• identify new opportunities through investigative process</li> <li>• evaluation and analysis of the proposed concept proposal</li> <li>• evaluation of alternative proposals</li> <li>• market assessment</li> <li>• results and conclusions (e.g. whether to proceed or not)</li> </ul> | <ul style="list-style-type: none"> <li>• reduction in overhead costs</li> </ul> <p>How are students assessed:<br/>Coursework submission<br/>P,M D</p> |  |  |  |
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|  | <p>1.15 Security issues, i.e.:</p> <ul style="list-style-type: none"><li>• ownership of personal information</li><li>• unauthorised access and misuse of personal information</li></ul> <p>How are students assessed:<br/>Coursework submission<br/>P,M D</p> | <p>How are students assessed:<br/>Coursework submission<br/>P,M D</p> |  |  |  |  |
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