

## Information and Communication Technology (ICT)

<b>Course Description</b>	<p><b><u>Years 7-8-9</u></b></p> <p>This course is designed to provide experience of computing and IT fields to students.</p> <p>A high-quality computing education equips pupils to use computational thinking and creativity to understand and change the world. Computing has deep links with mathematics, science, and design and technology, and provides insights into both natural and artificial systems.</p> <p>The core of computing is computer science, in which pupils are taught the principles of information and computation, how digital systems work, and how to put this knowledge to use through programming.</p> <p>Building on this knowledge and understanding, pupils are equipped to use information technology to create programs, systems and a range of content.</p> <p>Computing also ensures that pupils become digitally literate – able to use, and express themselves and develop their ideas through, information and communication technology – at a level suitable for the future workplace and as active participants in a digital world.</p>
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<b>Course Aims</b>	<p><b><u>Years 7-8-9</u></b></p> <p>The main objective is to empower, and to create independent, inquisitive thinkers who can apply IT tools creatively.</p> <ul style="list-style-type: none"><li>• to understand the fundamental principles and concepts of computer science and data representation</li><li>• have the ability to analyse problems in computational terms</li><li>• practical experience of writing computer programmes in order to solve problems</li><li>• evaluate and apply new or unfamiliar information technology analytically to solve problems</li><li>• become responsible, creative confident and competent users of information and communication technology</li></ul>
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<p><b>Course Content</b></p> <p>(Major Concepts and Areas Covered)</p>	<p><b><u>Year 7</u></b></p> <p><b>Theory:</b></p> <p><b>Computer System:</b> block diagram, IPO cycle, advantages and disadvantages of computerised information system over manual information system</p> <p><b>Storing data:</b> primary and secondary memories, removeable and non-removeable storage devices, types of memories.</p> <p><b>Application software:</b> general purpose and customised software</p> <p><b>Internet:</b> websites, homepage, internet options, cyber safety, research techniques and citations.</p> <p><b>Manual Input Devices:</b> keyboard, mouse, scanner, microphone, joystick, etc</p> <p><b>Output Devices:</b> monitor, printer and types, plotter , speaker etc</p> <p><b>Practical:</b></p> <p><b>Publisher:</b> designing brochures, newsletters and designs required for publications</p> <p><b>Microsoft Word:</b> creating and formatting the document, labels, header and footer, mail merge, online docs, creating websites with word</p> <p><b>Microsoft PowerPoint:</b> transition, hyperlinks, buttons, custom animations.</p> <p><b>Ms Logo:</b> Forward, Backward, Left Turn, Right Turn, Pen up, Pen down, Repeat</p> <p><b>Ms Excel:</b> Formatting, Formulas (Sum, Average, Product, Max, Min, Count, Countif, Sumif, Goal seek, lookup) Charts, Paste special, hyperlinks</p> <p><b>Photostory:</b> Interface, tools, storymaking</p> <p><b>Project :</b> One project which includes all component learnt.</p> <p><b><u>Year 8</u></b></p> <p><b>Theory:</b></p> <p><b>Direct Input Devices:</b> OCR, OMR, MICR, Bar Code Scanner and examples</p> <p><b>System Software:</b> OS, Main Functions, Types of OS, Translator- Compiler, Interpreter and Assembler</p> <p><b>User Interface:</b> Types- GUI, CUI and MDI, Designing a user interface</p> <p><b>Computer Crime:</b> hackers, viruses, identity theft, spam and protection against these crimes</p> <p><b>Computer Control:</b> robots and its control using Lego</p> <p><b>Health and Safety:</b> features of a healthy environment, health problems, RSI, eye strain, backache, designing a healthy and safe environment.</p> <p><b>Practical:</b></p> <p><b>Flash:</b> Timeline, Interface, Layers, Animation, Motion and Shape tweening and animation movies</p> <p><b>Movie Maker:</b> Use of Windows movie maker and digital movies with music</p>
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	<p>and text</p> <p><b>Photoshop(Basic):</b> interface, selection tools, changing images and background</p> <p><b>Front Page:</b> web page, web site, designing a website, home page, hyperlinks, marquee, working with text and images.</p> <p><b>Project:</b> One project which includes all the components learnt.</p> <p><b>Year 9</b></p> <p><b>Theory:</b></p> <p><b>System Life Cycle:</b> five main stages, analysis, design, testing, implementation and maintenance</p> <p><b>Networking:</b> advantages, disadvantages, types of network, hardware and software requirements</p> <p><b>Models and Simulations:</b> simulations, virtual realities, models in spread sheet, goal seeks</p> <p><b>Computer Graphics:</b> CAD, 2D and 3D graphics, CAM</p> <p><b>Applications of ICT:</b> in education, supermarket, GPRS, medicine, banks, web services</p> <p><b>Communication:</b> email, conferencing, fax, online classes</p> <p><b>Practical:</b></p> <p><b>Photoshop:</b> filters, selection tools, design tools, layers, image transformation, morphing</p> <p><b>Google Sketch Up:</b> CAD, tools, models designs and walk through</p> <p><b>Scratch:</b> interface, tools, designing interfaces, programming coding</p> <p><b>Front Page:</b> web page, web site, designing a website, home page, hyperlinks, marquee, working with text and images.</p> <p><b>Project :</b> One project which includes all component learnt.</p>
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<p><b>Outcomes of the Course</b></p>	<p><b>Year 7</b></p> <p>Students will become confident users of Microsoft office and will be able to integrate applications in one task.</p> <p><b>Year 8</b></p> <p>Students will become confident users of Adobe Suite with digital storytelling and will be able to integrate applications in one task.</p> <p><b>Year 9</b></p> <p>Students will become confident in image editing, computer aided designing and website development and will be able to extend their knowledge using programming skills.</p>
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<b>Delivery and Methodology</b>	<p><b><u>Years 7-8-9</u></b></p> <p>A variety of teaching methods are used to develop students critical, analytical, problem solving and creative skills using group work, individual tasks, research and integration and get hands-on experience on a range of software applications to their enhance practical skills.</p>
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<b>Additional Expectations</b>	<p><b><u>Years 7-8-9</u></b></p> <p>Students are advised to maintain their notebooks and files</p>
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<b>Assessment Objectives</b>  (Specifications and Standards)	<p><b>AO1: Knowledge and understanding</b> Students shall be able to recall, select and communicate knowledge and understanding of ICT.</p> <p><b>AO2: Skills and application:</b> Students shall be able apply knowledge, understanding and skills to produce ICT-based solutions.</p> <p><b>AO3: Analysis and evaluation:</b> Analyse, evaluate, make reasoned judgements and present conclusions.</p>
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<b>Scheme of Assessment</b>  (Evaluation of Student Performance)	<p><b><u>Years 7-8-9</u></b></p> <p>Formative assessment will be carried out through a variety of tasks assigned by the teachers. Pupils will be set individual targets for development and improvement after formative assessments. Each term there will be summative assessments which will consist of a written and practical test covering the learning objectives studied that term. Each term a project will be set which will be marked against criteria discussed with students.</p> <p>Approximate weighting of assessment objectives for qualification:</p>
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	<p>AO1: 40 % AO2: 30 % AO3: 30 %</p> <p>Weighting of formative and summative assessments (Y7-9):</p> <p>Formative (progressive) assessments: Before midterm: 20% After midterm: 20% Midterm Examination: 30% Final Examination: 30%</p>
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<b>Grading Policy</b>	<p><b><u>Years 7-8-9</u></b></p> <p>All assessment is criterion referenced and aligned to learning objectives as outlined in the teacher's term projections. Teachers mark work on the basis of mark schemes made in collaboration with colleagues of the same year group.</p> <p>Formative assessments may be given a mark, a grade or a comment. It values teacher judgement and informs the learner about strengths and areas of development. All summative assessments are graded on a scale as published in the whole school assessment policy.</p> <p>90-100%: A* 80-89%: A 75-79%: B+ 70-74%: B 65-69%: C+ 60-64%: C 55-59%: D+ 50-54%: D 0-49%: F</p>
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