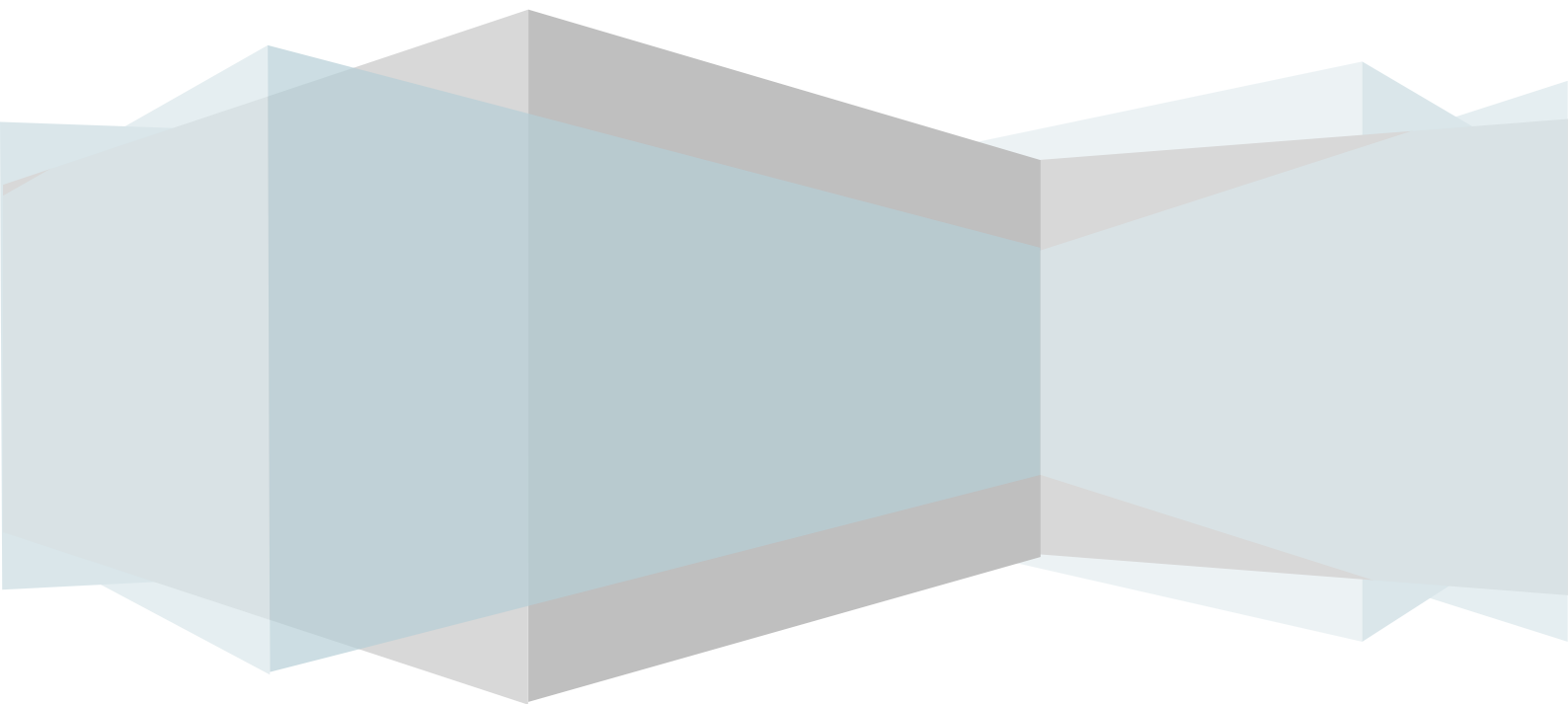


International Education Awards



Diploma in Applied ICT *Syllabus*

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Introduction

Background

This course has been designed to overcome what we see as deficiencies in many ICT courses, e.g.

- Courses may not reflect the interests of the students but instead reflect what the examiners consider important.
- Assessment gets in the way of learning.
- Students learn to use a variety of software and hardware at home to a sophisticated level without any input from ICT teachers.
- While capable of working at a sophisticated level in the real world, at school students may be made to carry out tasks that are both unrealistic and simplistic.
- Students may be restricted in what they do by the facilities available and the knowledge and interests of their teachers.
- Students may be encouraged to do projects that are of no interest to them, merely because they will gain marks.
- Students with excellent ICT skills capable of producing work of near professional quality may be unable to achieve top grades. This may be due to a reluctance to carry out detailed documentation or due to examinations failing to ask them questions on their topics of expertise.
- Creativity is given little reward.
- Courses need updating as a result of changing technology.
- While most students enjoy working with ICT, courses offered in schools can be demotivating.

To free students from these restrictions, this course has been designed with a flexible structure allowing schools and students to be free to pick and choose what best suits their needs.

Aims

The intention of this course is to encourage students to:

- demonstrate their ICT capability rather than reveal what they cannot do.
- use ICT skills to solve real-life problems.
- aim for the highest standards possible.
- work independently.
- work collaboratively where appropriate
- use their imagination and creativity
- challenge themselves

Who is this course for?

The course is designed to:

- be suitable for students at Key Stage 4 (KS4) or those studying the International Baccalaureate (IB) Middle Years Programme (MYP) while giving students the opportunity to challenge themselves at higher levels up to General Certificate of Education (GCE) A level and IB Diploma.
- offer maximum flexibility. Centres that already have examples of good practice in place should be able to use this course without having to make fundamental changes to the way they teach.
- be taken by **all** students so teachers will need to take care to ensure that a suitable level of challenge is provided to students of all abilities and interests.
- allow a variety of teaching methods. While being ideal for teachers wishing to make use of innovative modern teaching methods teachers wishing to use more traditional teaching methods.

Course content

ICT covers a vast range of hardware and software topics. With the rate at which technology changes the available hardware and software topics constantly change. What may have been considered core knowledge and skills five years ago may no longer be considered so today.

Because of this, the syllabus does not specify any particular content. This allows teachers to design their own course.

Students are expected to reflect on ethical considerations of their work, e.g. use of copyright material, privacy issues, etc.

For those who need advice and guidance on designing course content, suggested schemes of work may be found in the Teachers' Guide. Additional support will be available on the IEA website www.ieaward.com or by contacting IEA directly.

Assessment

Method

In order to allow students to be free to take risks and explore new ideas *it is essential that assessment does not get in the way of creativity*. Students should not be burdened with *unnecessary and irrelevant documentation*.

1. There will be *no examination*.
2. Students will be assessed by carrying out a project which should demonstrate capabilities in at least **two** areas of ICT based competence.
3. Students should be given the opportunity to conduct projects in any field they choose. If the equipment and expertise available in school are not appropriate for the project, students should be encouraged to look outside school for assistance. IEA will build a list of appropriate mentors who may be contacted by students.
4. To obtain the highest grades students **must** work with people outside school.
5. All projects must be designed to solve a specific problem and not just be an exercise to demonstrate skills.
6. Projects may be demonstrated in a variety of ways, e.g.:
 - a. Written documentation
 - b. Presentation to peers
 - c. Presentation to teachers, visiting experts or examiners
 - d. Video or other multimedia presentation
 - e. An "ICT Fair" where students set up booths where they can demonstrate their work and answer questions.

Marking

1. Projects will be assessed internally.
2. Students must submit their work with the marks *they* expect to be awarded together with references to where evidence may be found to justify their marks.
3. All work to be marked must be made available in the student's ePortfolio on the IEAward website.
4. Supervisors and/or other mentors should moderate the students' marks and submit the marks to the IEAward website.
5. To ensure consistency in assessment, centres will be expected to carry out their own internal moderation.
6. Centres should keep their own copies of all work submitted for at least one year.

Moderation

1. The exam board will select a sample of projects from each centre for moderation.
2. The work from 20% of the students from each centre will be moderated in the first instance.
3. Further projects may be selected for moderation as required.

Project choices

1. Students should be encouraged to choose a real and original project.
2. Teachers should assist students in choosing a realistic and appropriate project.
3. To achieve the highest levels students must carry out a project that demonstrates considerable originality or innovation.

Monitoring progress

1. Students will need to spend some time working on projects away from their supervisor. They will need to produce documentation to explain the work they have done. This should be recorded in the online journal on the IEAward website.
2. Supervisors will need to monitor progress carefully to ensure students produce their own work.
3. Where teachers feel unable to judge a project due to it using unfamiliar software or techniques steps should be taken to find a suitably qualified person to advise them. Should none be available centres should contact IEA for advice.

Group Work

1. For any real project students will need to work with other people, not just write it for themselves.
2. When students carry out group work for assessment they will need to make it clear what each member of the group was responsible for. For this purpose a group work form will be available online for each member of the group to complete.

Assessment framework

All project work will be assessed within a framework consisting of 7 strands or learning objectives, each to be assessed on a scale of 0 to 4.

The strands are:

1. Planning and research
2. Technical skill
3. Originality and creativity
4. Evaluation
5. Communication
6. Commitment and involvement
7. Fitness for purpose

Full details of the rubric can be found in [appendix 1](#).

Students will need to look carefully at the rubric with their supervisors to decide what needs to be done in their chosen project(s) to achieve the various levels.

Interpreting the rubric

Level 1 Descriptor

At this level:

- Candidates are expected to demonstrate an understanding of basic features of the software used as outlined on the IEA website. Candidates may have made use of techniques demonstrated in the classroom but may not have extended their knowledge any further.
- A project should involve the use of at least two different software packages.
- Candidates should identify some simple objectives.
- Candidates should carry out some basic planning.
- Candidates should make some attempt to evaluate their work.

Level 2 Descriptor

At this level:

- Candidates are expected to demonstrate an understanding of the standard features of the software used as outlined on the IEA website. A candidate is not expected to use all features listed but it should be clear that they are able to apply a range of tools in the context of the project.
- Candidates should identify clear and valid objectives.
- Candidates should show evidence of research and planning.
- Appropriate plans should be drawn up in preparation for implementation.
- Candidate should demonstrate the ability to communicate their project clearly, explaining their method of solution.
- Candidates should be able to make a meaningful evaluation of their work outlining strengths, weaknesses and suggested improvements.
- Candidate's project should show that they have met the objectives outlined in the planning.
- Candidate's complete project and their learning journal should demonstrate that they have been fully engaged in the process.

Level 3 Descriptor

At this level:

- Candidates **MUST** carry out projects on behalf of a real end user, preferably someone from outside school/family.
- Candidates are expected to demonstrate an understanding of the advanced features of the software as outlined on the IEA website. A candidate is not expected to use all features listed but it should be clear that they are able to apply a range a tools in the context of the project.
- Candidates should give clear evidence that they have worked in collaboration with the end user to identify clear and valid objectives.
- Candidates should carry out research to see if any existing solutions that are available. These should be evaluated.
- Candidates should show evidence of extensive planning and that the plans have been approved by the end user.
- Candidates should be able to able to communicate and justify their methods of solution, including, where appropriate, discussion of alternative methods they may have considered.
- The candidate should describe research carried out and other methods used to overcome problems encountered.
- Candidate should demonstrate the ability to communicate their project clearly and in detail.
- Candidates should be able to make a meaningful evaluation of their work outlining strengths, weaknesses and suggested enhancements and that they have engaged the end user in this evaluation.

- It should be clear that there has been a continual process of development, feedback and amendment in collaboration with the end user.
- The candidate's project should be fully and appropriately tested to show that it meets the objectives outlined in the planning stage.
- Candidate's complete project and their learning journal should demonstrate that they have managed both the project and their own learning.

Level 4 Descriptor

Any candidate who exceeds the expectations of a level 3 will be awarded a level 4.

Levels of achievement

The Diploma will be awarded at a number of levels.

Foundation

Students at this level will be able to use software to carry out a variety of tasks.

*Students need to achieve **level 1** or higher on **all** strands but must achieve **level 2** or higher on the **technical skills** strand.*

Standard

Students at this level will be able to demonstrate good use of software to carry out a variety of tasks.

*Students need to achieve at least **level 2** on **each** of the strands.*

Advanced

Students at this level will be able to demonstrate an ability to use a range of software at an advanced level and be able to carry out extended pieces of work to solve a real problem for a real client.

*Students need to achieve at least **level 3** on **each** of the strands.*

Innovator

Students at this level will have demonstrated all that is necessary to gain the advanced award but in addition they will be able to carry out an extended piece of original work that shows great innovation in the application of skills.

*Students need to achieve **level 3** or higher on **each** of the strands and **level 4** on the **originality/creativity** strand.*

The Diploma

To reflect the wide range of topics that students will undertake the diploma will be issued showing the topics covered in the projects and the levels obtained.

The diploma will display the level the student has achieved in each of the 7 strands.

A student must show technical ability in at least two different strands of ICT, each of which will be graded. Students need to obtain at least two 3s to achieve the standard level and at least two 4s to achieve the advanced level.

E.g.

Derek Chan has been awarded The ICT Diploma Advanced Level

Graphics software

Video

Website creation

Enrolment

Students enrolling for the course would normally be expected to do so through an approved IEAward centre. Where no centre is available students may contact IEA for assistance.

Teaching

Preparation

By the time students choose their projects they should have been exposed to as many different applications as practical in ICT or other lessons, e.g.

- Using spreadsheet/database to manipulate data, solve problems and represent data graphically
- Making creative use of graphics software
- Creating animations
- Creating a video
- Using sound and other audio/visual software
- Creating and maintain a website
- Creating and running publications in print or online using websites or podcasts
- Creating and maintaining a data driven website
- Using music software to create original music or arrange existing music
- Writing programs to create games/solve problems
- Using any other appropriate software

Study materials

1. To enable students to have access to the widest range of study materials to match their interests, study materials will be made available online on the IEAward website and be accessible to all centres taking part in the course.
2. Teachers, supervisors, students and others, e.g. ICT professionals, journalists, etc will be invited to submit suitable materials to be included on the website.
3. These materials would include:
 - a. Reference articles
 - b. Tutorials
 - c. Tests
 - d. Examples of good work
 - e. Videos – these could be videoed lessons or demonstrations of projects.
4. A wide range of study materials should appear online allowing students access to a range of options that would not otherwise be available to them in one school.

Lesson plans

1. Teachers are encouraged to make all lesson plans and study materials available online for the benefit of other schools and students.
2. Sharing of resources and expertise is essential to allowing students develop their capabilities and to allow them to work on topics their own teachers may not be able to support. This may take the form of:
 - a. Visiting experts, e.g. teachers from other schools, ICT professionals
 - b. Video conferencing
 - c. Chat rooms and forums
 - d. Conferences
 - e. Visits to other schools and ICT establishments

Recommendations

1. Schools may choose to deliver the course as they wish. It would be possible for students to enter projects for the diploma without attending discrete ICT lessons if properly monitored. However, in order to give students maximum support it is recommended that they should have at least 1 hour per week in discrete ICT lessons. (2 hours where specific time in others lessons cannot be allocated.)
2. It is likely that, in any class, students could be working on a wide range of different activities and different levels. To assist classroom management it is recommended that class sizes should be relatively small, e.g. less than 20, although this may vary between schools according to facilities and available teacher support.
3. If schools are to allow true innovation sufficient funding should be available to buy extra hardware and software to enable students to pursue their topics of interest.
4. While traditional teaching approaches would allow students to obtain satisfactory grades for their work teachers should consider more innovative approaches to enable students to develop as independent learners.
5. Money should also be available to pay for externally run courses and workshops or to organise visits to other schools.

Appendix 1 - IEAward Assessment Rubric

Level	Planning and Research	Technical Competencies	Originality and creativity	Evaluation	Communication	Commitment and involvement	Fitness for purpose
0	Level 1 is not achieved.	Level 1 is not achieved.	Level 1 is not achieved.	Level 1 is not achieved.	Level 1 is not achieved.	Level 1 is not achieved.	Level 1 not achieved
1	Basic evidence of planning and research is offered.	Student has made basic use of the standard features of the software tools.	Project demonstrates a basic level of creativity, original elements or solutions.	Evaluation is basic , offering some consideration of strengths and weaknesses	Communication is basic	Student displays a basic level of commitment to the task	Project shows basic fitness for purpose.
	The student has made some attempt to carry out planning and research but this is either incomplete or inadequate.	There is little evidence that the student has tried to extend their skills beyond those taught in class. Tools may have been used inappropriately or inefficiently.	The student has shown some originality in their ideas, design or method of solution. N.B. an exact copy of existing software, animation or video may show technical excellence but cannot be given credit for creativity unless the student attempts to extend or parody the original ideas.	There is some attempt to evaluate the effectiveness of the solution. Discussion of the successes and limitations of the project are present but maybe superficial.	The project may have major omissions or may be poorly presented making it hard to follow what the student has done. Reasons for decisions taken are not explained. There may be a significant number of errors in terms of grammar, spelling or general use of English.	The student generally focuses on the task appropriately but may miss deadlines. Engagement with supervisors, peers and end users may not always be appropriate.	The project partially succeeds in achieving what it set out to do but may be incomplete, have problems that prevent it from working or be inappropriate for the task.
2	Planning and research is good	Student makes good use of the standard features of the software.	Student demonstrates good levels of creativity and originality.	Evaluation is good , being realistic and complete.	Communication is good	Student displays good commitment to the task	Project shows good fitness for purpose.
	There is evidence using appropriate media to show planning has been carried out. Description and overview of the required system is well presented and clear. Specific objectives have been outlined. Some consideration has been given to ethical issues.	The student has used software efficiently and effectively demonstrating a good knowledge of the available tools. The student has identified problems and has carried out appropriate research to solve them.	The student gives a reasoned explanation of their decision making processes throughout the project.	The successes and limitations of the project are discussed in the context of the project objectives. Appropriate improvements and developments are suggested and specific examples are given.	The student communicates effectively using appropriate media. The project is well presented, well organised, has no major omissions and it is easy to follow what the student has done. Grammar, spelling and use of English are generally correct.	The student is well organised, adheres to deadlines and continued engagement is fully illustrated in the use of the student's log.	The end user's specifications have been fully addressed and the majority have been successfully achieved. Evidence of appropriate testing has been provided.
3	Planning and research is very good	Student makes very good use of the software by appropriate use of more advanced features.	Student demonstrates very good levels of creativity and originality throughout. Student attempts to reflect on creative and original aspects of the project.	Evaluation is very good and reflects the needs of the end user.	Project communication reflects end user needs	Student commitment and involvement in the task has been very good . Student has reflected and documented their own learning	Project shows very good fitness for purpose.

Appendix 1 - IEAward Assessment Rubric

Level	Planning and Research	Technical Competencies	Originality and creativity	Evaluation	Communication	Commitment and involvement	Fitness for purpose
	There is evidence using appropriate media to show that complete planning and analysis has been carried out. Discussions with end user are reported in detail. Specific objectives have been outlined. Description and overview of the required system is well presented and clear and shows a clear understanding of ethical issues.	The student has used software efficiently and effectively. There is clear evidence that the student has knowledge of a range of advanced features and has used them appropriately. The student has identified problems and has detailed the research carried out to solve them.	The project is based on an original idea or the student has shown originality in their method of solution. The student shows awareness of what is original about their work and why.	The successes and limitations of the project are discussed in detail in the context of the project objectives. Appropriate improvements and developments are described. Evaluation and improvement should be a continuous cycle in the development of the project.	The student communicates effectively using appropriate media. The project is well presented, well organised, has no major omissions and it is easy to follow what the student has done. Throughout the project the student shows an awareness of the needs of the end user. Grammar, spelling and use of English are generally correct.	The student is well organised, adheres to deadlines and continued engagement is fully illustrated in the use of the student's journal. The journal shows evidence of appropriate feedback from end users on a regular basis and provides evidence that the student has taken responsibility for independent learning.	The end user's specifications have been fully addressed and have been successfully achieved. The end user has provided proof of the success of the project. Evidence of planned testing against specifications has been provided where appropriate.
	Student presents a professional analysis of project outcome giving clear evidence of systematic collaboration with end user.	Student makes full and sophisticated use of appropriate software tools. Final project uses software to professional standards.	Student justifies and documents creative and original aspects of the project through all stages. Project reflects innovative approach or solution.	Evaluation shows an appreciation of the extent to which the outcome achieves a professional standard.	Communication to end user, through all stages of development is clear and professional .	Student demonstrates a professional approach to documenting their engagement in the task, their own learning, their initiative and leadership during the task.	Professional quality project is produced
4	There is evidence using appropriate media to show that complete planning and analysis has been carried out. Discussions with end user are reported in detail and the user's specifications are clear. The analysis is sufficiently comprehensive to pass onto a third party to carry out the implementation. The student shows a clear understanding of ethical issues.	There is clear evidence that the student has knowledge of a range of advanced features and has used them appropriately. Evidence should be provided by a suitable professional that the student's knowledge and skills are equivalent to that of a professional and should make it clear at what level the student is working.	The student shows awareness of other products of a similar nature and is able to illustrate practical differences between their work and any comparable products.	A thorough analysis of the project outcomes has been carried out to explain the successes and limitations. Appropriate improvements and developments are described in detail and in collaboration with the end user.	The project constitutes a complete report of the work done, decisions made and the reasoning behind the decision making. The project is detailed, well presented, well organised and easy to follow. All changes to the original design are noted and explained in detail. Grammar, spelling and use of English are generally correct. Throughout the project the student shows an awareness of the needs of the end user.	The learning journal reflects a high standard of self motivation and reflects the student's ability to work independently and yet cooperatively, e.g. the student has arranged meetings, site visits and other opportunities to carry out research in their own time.	The product should be of marketable quality. In the case of a software product there is evidence that the end user makes use of the product on a regular basis. In the case of a video or similar there must be evidence that the product has been used in a professional environment, e.g. at a film festival other than one organised by schools.