Guidance on the appropriateness and complexity of the IT solution

Students of the information technology in a global society (ITGS) course are expected to—in consultation with a specified client—design, create and implement an IT product that meets the success criteria in criterion B and the requirements for complexity in criterion E (see the *Information technology in a global society guide*, January 2010). The following tables provide guidance on simple and complex products.

Before submitting their work for internal assessment, students must ensure that the copyrighted materials used in their product have met the copyright requirements.

The product must be submitted in the original format and alternative cross-platform formats, wherever possible. For example, a desktop publishing product may be submitted in Adobe InDesign format and must also be submitted as a PDF document.

From May 2013 all projects will require a screencast that demonstrates the product functioning and highlights the complex techniques that have been identified at the start of criterion E. The screencast does not need to be edited and is not counted as an advanced technique.

Multimedia

The project may be presented through a website, presentation, video or similar digital product or new technology.

Basic	Advanced (at least three appropriate techniques)
Navigation (internal and external links)	Proficient integration of the different elements of multimedia
Combining text and graphics	Non-simple editing of original sound
Use of tables or layers for layout	Non-simple editing of video clips
Use of headers, footers, watermarks or footnotes	Creation of original animation
Combining two software applications	Manipulated graphics
Six slides for a presentation	Links to underlying data (for example, database, mail merge)
	Navigation using frames and customized buttons
	Manipulation of codes such as HTML, XML, Java, JavaScript or Visual Basic to customize pages or improve functionality (see below)
	Cascading style sheets or schema
	Integration of components using advanced features from other applications
	Quality content captured for video using special hardware/software (such as external microphone, tripod, lighting or other special equipment)
	Precise timing of the components in a video (such as audio, music or video footage)

Examples of suitable products could include:

- a website for a local photographer (client) to increase revenue
- a video created for the Spanish teacher (client) to illustrate how Spanish is used in a particular city.

Products developed using web-based templates and Web 2.0 tools

Students must use techniques listed for other types of product to ensure the product is complex. There are three ways to achieve complexity.

- The template is used only as a “container” (product) and all of the complexity is achieved through the development of the content.
- The functionality of the template or the Web 2.0 tools have been extended through codes or other advanced techniques.
- A combination of both of the above approaches.

For example, in a product a student may use one advanced technique to increase the complexity of the web-based template or Web 2.0 tools, one advanced technique in creating a video and the third advanced technique in developing a spreadsheet.

Basic	Advanced (at least three appropriate techniques)
Organization of template structure such as merging and splitting cells Integration of other applications such as spreadsheets Integration of a range of different elements	Proficient integration of a range of different elements Use of editable sub-regions Use of advanced techniques or codes provided by the site Creation of original templates Integration of components using advanced features from other applications

Examples of suitable products could include:

- a wiki site for a particular curriculum topic that allows students to contribute to the site
- a blog made for the CAS coordinator to share successful CAS projects with the school community.

Desktop publishing (DTP)

The project may be presented through a desktop published document. Ideally, it should have at least 12 pages.

Basic	Advanced (at least three appropriate techniques)
Combining text and graphics	Manipulation of graphics to improve print quality
Use of tables for layout	Development of an original and unifying template
Use of headers, footers, watermarks or footnotes	Proficient use of typography
Combining two software applications	Proficient interrelationship of graphical elements, images and text
Single document	Links to underlying data (for example, mail merge)
12 pages	Integration of components using advanced features from other applications

Examples of a suitable topic could include:

- a DTP booklet for a history teacher (client) to give to 8th grade students (end-users) when they visit Florence.

Relational databases

Students must not use a template that comes with the product.

Basic	Advanced (at least three appropriate techniques)
Two related tables	Three or more related tables
Two forms	Macros
Two queries	Modules
Two reports	Subforms
Data validation	Complex queries/calculated fields
Three data types	SQL to develop a back-end database
Use of graphics	Use of graphics fields
	Proficient use of techniques to enable easy navigation such as menus or buttons
	Proficient design of reports and/or forms

Examples of a suitable topic could include:

- a database for a local garage owner (client) to assist in the efficient ordering of parts.

Spreadsheets

Students must not use a template that comes with the product.

In general, spreadsheets work better as a component of a larger product.

Basic	Advanced (at least three appropriate techniques)
Cell formatting	Multiple linked sheets
Macros	Pivot tables
Charts	Goal Seek
Basic functions (for example, IF, SUM, AVERAGE, MIN, MAX)	Scenarios
Validation	Nested functions
Screen layout	Customized macros
Appropriate protection	Forms
Printing a formatted page	Menu page with buttons
	Complex functions such as DATE, VLOOKUP, CONCATENATE

Code and programming tools

Students may wish to use programming tools as an advanced technique to increase the functionality of a product or to actually create the product.

It is recommended that products that are entirely programmed are only undertaken by students who have formally studied programming techniques.

Students are reminded that all products that involve programming **must** provide both access to the code and a functioning version that the moderator can access **either** on the CD-ROM/DVD **or** via the internet.

Moderators **are not** expected to download specialist software such as NetBeans to run the program.

Basic	Advanced (at least three appropriate techniques)
Formatting of layout	Arrays
Sequential processes	String handling
	File handling
	Subroutines, parameter passing
	Loops
	Object definitions
	Conditions
	GUI interface
	Integrates media: graphics, sound, video or animation

Examples of a suitable topic could include:

- a spreadsheet or database with the use of a code such as VB to increase functionality
- a php website (front end) with an SQL database (back end).