UNIVERSITY of CAMBRIDGE
International Examinations

External Evaluation of the European Baccalaureate

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Annexes to the External Evaluation of the European Baccalaureate

Annexes to the External Evaluation of the European Baccalaureate Draft Report

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1.9.1 Doc 1.1

Report on the comparative study of the EB curriculum: French Language II

The EB French Language II syllabus for Years 6 and 7 is a very traditional one in the classic francophone mould. It is heavily literary in emphasis, to the extent that all the assessment tasks in the papers considered are based in some way on literary texts. The tasks stress the importance of the analysis of literary material and the production of formal, reasoned, structured argument in the French tradition.

As such, it is very different in content and emphasis from both the IB Diploma French B Higher Level course and the OCR A level, which are clearly language courses designed to promote first and foremost language acquisition and communicative skills. In both the IB and the A level courses, it is perfectly possible to undertake very little or no literary study at all, although both offer it as an option, and teachers are encouraged to ensure that students are exposed to high-quality texts during the course as an aid to their own powers of expression.

A comparison of the stated objectives of the courses makes this distinction and difference of emphasis clear:

The first of the **IB Language B Higher Level** objectives is to *'communicate clearly and effectively in a wide range of situations'.* The second is to *'understand and use accurately oral and written forms of the language that are essential for effective communication in a range of styles and situations.'* Its other objectives concentrate largely on delivering and receiving the 'message', and it is not until the final objective that '*awareness of, and sensitivity to, the culture(s) related to the language*' is mentioned. Nowhere is there any specific mention of literary study.

Similarly, the first two of the Specification Aims of the **OCR A level** are to '*develop understanding of the spoken and written forms of the foreign language from a variety of registers*' and '*to communicate confidently, clearly and effectively in the foreign language through both the spoken and written word, using increasingly accurate, complex and varied language*.' The penultimate aim is to '*develop critical insight into, and contact with, the contemporary society, cultural background and heritage of countries or communities where the foreign language is spoken*'. Again there is no specific mention of literary study.

The Specific Aims of the **EB Language II** programme are introduced by a statement that Language II studies are vital in providing the student with the means of access to European culture in its diversity, and (in a European School context) of being able to follow Human Sciences courses being taught in Language II. The stated aims are then to develop the ability of students to communicate effectively in both the spoken and written language, and to understand 'messages' (both spoken and written) of all kinds, including literary and cultural. When it comes to the specific objectives for Years 6 and 7 (the relevant years for this report), however, the only objectives mentioned are to '*maîtriser la pratique de l'argumentation*', *'développer une réflexion abstraite, critique et ouverte aux cultures européennes'*, and *'développer un commentaire qui prenne en compte les spécificités littéraires*'.

In this sense, the EB course aims to do very different things from the other two (which share a good deal of common ground), which makes any comparative evaluation open to the criticism of not comparing like with like. The emphases of the EB course are so different that there is no merit in speculating as to how the IB or A level candidates would have fared on it, or of how the EB students would have fared on a course much more obviously orientated towards language acquisition.

The EB programme is also very different from the other two in the narrowness of its range of assessment tasks, as well as the narrowness of its source materials and stimuli.

That said, the standards of language achieved in the sample scripts evaluated are not dissimilar and the level of French produced by the candidates on the different courses – even if they are writing in response to very different stimuli, on very different subjects and, it would appear, with very different objectives in mind – bears comparison.

The courses are all demanding in their own ways – the EB 'way' being very significantly different from the IBD or A level 'way'. Inevitably, there is a wide range of achievement within the cohorts, ranging from the very limited to the very polished, but many of candidates from each of the programmes under comparison demonstrate an ability to handle the language and the ideas expressed effectively, with a good range of vocabulary and idiom and, in the case of the best candidates, with impressive levels of fluency and accuracy whichever course they have followed.

Michael Featherstone
August 2008

1.9.1 Doc 1.1

Mapping Table – European Baccalaureate / OCR A Level and IBD
Subject: FRENCH LANGUAGE II

Syllabus compared: OCR GCE A level

1. Complete the first column with a detailed list of the topic areas covered in the European Baccalaureate syllabus.
2. Insert a tick, or similar, to show where the topic is covered by the comparator specification – please delete option columns if there are no options.
3. Include comments to describe where a topic is covered in greater depth in one or other specification, where possible estimate how much time it would take to deliver the extra depth.

EB syllabus content	Present in core of comparator	Present in optional unit …	Covered in greater depth in EB	Covered in greater depth in OCR A level
There is very little laid down that could be described as 'syllabus content' or 'topic' areas' in the EB syllabus. What is given is a number of desired skills or competencies to be developed and assessed				
Listening and Speaking: Hold a conversation at a sophisticated language level Adapt to registers of language Present an argument, refute and convince	✓ ✓ ✓		✓ (in a formalised way)	Doubtful how much variety of register actually exists in EB (assessments in particular)
Reading Understand a variety of texts and media Read for overview whole literary works Read and analyse literary works, particularly those prescribed for study on the set list for the year	✓ (much wider variety)	✓ ✓	✓ (literary texts only) ✓ ✓	✓ (non-literary texts and other sources)
Writing Produce a written argument using the structure "introduction, development,	✓ (written argument yes, but less concern for		✓ (in a formalised way)	

conclusion” Produce a written narrative following the required criteria (tense, person, tone, language level etc. Carry out activities linked to the set works	set structure) ✓ (written narrative yes, but less emphasis on ‘required criteria’)	 ✓	 ✓	

Content included in OCR GCE A level French (comparator syllabus) but not in EB syllabus

Please list any topics that are included in the A Level specification but not in the EB syllabus.

1. The topic areas from which teachers are expected to select material and on which students are assessed cover a wide range of issues from contemporary French society and culture: e.g. the media, the arts, sports and pastimes, travel, daily life, the environment, education, law and order, politics, education, human interest news items etc. This applies not only to the set non-literary topics in the Culture and Society paper but to the course in general. This is in very marked contrast to the EB programme, where the source material is largely of a literary nature, requiring for the most part ‘literary’ responses.

2. There is an emphasis on a variety of authentic sources of material and language – notably, contemporary newspaper and magazine articles.

3. There is a published list of set literary texts to be studied if the student wishes to take that option in the Society and Culture paper, and set literary topics if the student wishes to take that option, but there is no obligation to incorporate literary study. This is in very marked contrast to the EB programme.

4. There is a published list of grammatical points which candidates are expected to be able to recognise and/or handle.

5. There is a far wider range of assessment exercises: multiple-choice, gap-filling, non-verbal answers, sentence completion, definitions, ‘true or false’ exercises, word substitution, matching statements with items from the text etc.

6. Some questions and answers are in English, and there is a requirement to be able to transfer meaning from French into English and *vice versa*.

7. There is an emphasis on a range of material to be communicated and the target audience, and therefore on appropriate register.

8. There are specific listening comprehension tests.

9. There is a general emphasis on language acquisition, ‘message’ and communication.

10. Synoptic element.

11. Comparison Table for comparison of assessment models

Use this table to make direct comparisons between the syllabuses in the following areas:

1. structure of the assessment model, including the format of assessment for the specification/syllabus
2. whether coursework is assessed, the kinds of coursework assessed and contribution to overall grade
3. whether oral assessment is part of the assessment model, and the extent and format of oral assessment
4. whether the assessment model is unit-based or requires candidates to take a synoptic view of the topics, and to what extent

NOTE: the prose commentary on the assessment models should draw attention to significant differences in the requirements for the European baccalaureate and A Level or IB.

	European Baccalaureate	**OCR GCE A Level**
Assessment structure, format and timings	Language II is one of the compulsory elements which make up the five components of the EB. An overall average of 60% is the basic requirement for the award of the EB. The percentage for each subject is calculated as follows: **40% Preliminary Mark**, teacher assessed, made up of two elements: a) **15%** as an arithmetical average of two end-of semester marks awarded by the class teacher for class work in each of the two semesters in Year 7. b) **25%** awarded on the basis of written class examinations at the end of the first semester (end of January) in Year 7. Examinations the same length as in the external terminal written EB examination. **36% mark from the externally set terminal Written Examination**, based on Year 7 syllabus, but also testing knowledge gained in previous years (particularly Year 6). Scripts marked first by candidate's teacher and then by external examiner. **The Language II written exam** lasts three hours (four in the case of Advanced Language II [*approfondissement*]). All texts, instructions and questions in target language. All answers in target language. No dictionaries. **The Language II written exam** is based	Unlike the EB and IBD, there is no requirement at A level to study even one language, let alone a second one. Candidates are therefore those who have chosen to take this subject, rather than having to do so in order to qualify for a diploma. Assessment is by means of 6 units of assessment (3 at AS level). At **GCE A level**, candidates take the following units/components: **1.** **Speaking** (either externally marked, internally marked and externally moderated, or conducted by a visiting examiner): 15 mins – **15%** **Role play** set in business or domestic context: 5 mins following 20 minutes of preparation based on stimulus passage in English. **15 marks.** **Presentation and discussion of topic**: 10 mins (2-3 mins of prepared presentation on subject of candidate's own choosing related to society or culture) followed by 7-8 mins of discussion with examiner. Short notes and/or illustrative material may be brought to the examination. **45 marks.** **2.** **Listening, reading and writing 1 :** externally marked. 90 mins – **20%.** **Section 1:** **Short listening texts** (e.g. news items, items of general interest, advertisements), not requiring productive use of target language : **20**

	on a literary passage giving rise to: ▪ three comprehension questions – **20 marks** ▪ two interpretation questions – **40 marks** ▪ an essay question - a choice of two, only one of which is chosen by the candidate. In the paper provided for comparison, one essay consisted of inviting candidates to write a newspaper article describing the event related in the literary text. The other choice consisted of a topic of a general literary nature in which candidates were invited to give examples from the set texts which they had studied and from personal reading – **40 marks.** The 'corrigé' (suggested correct or model answer) provides markers with outlines of the elements to be expected and rewarded in Comprehension and Interpretation exercises, but no indication of how the marks are to be awarded. There is an assessment grid indicating the criteria for marks to be awarded in the Essay. **<u>The Advanced Language II (*approfondissement*) paper</u>** is based on a literary passage giving rise to: ▪ Five questions of an analytical nature on the text – 5 x 10 = **50 marks** ▪ A literary essay based on the set texts studied and on personal reading (choice of two subjects of which the candidate chooses only one) - **50 marks** The 'corrigé' provides markers with outlines of the elements to be expected and rewarded in the question on the text, but no indication of how the marks are to be awarded. A very general indication of elements to be expected and rewarded in the Essay is also provided. 15 marks are available for giving precise examples from text studied or personal reading, 10 marks for putting forward a reasoned argument based on the subject, 20 marks for constructing a	**marks** **Comprehension of reading text** requiring non-verbal responses : **10 marks** **Section 2: The world of work** **Listening text**, with exercises requiring both non-verbal responses and answers in French. **20 marks** **Reading:** extract from a letter or memo for gist translation into English. **20 marks** **Writing:** letter or fax in response to either listening text or reading text. **10 marks**. **3.** **<u>Reading and writing:</u>** externally marked. 90 mins – **15%** **Reading**: two texts to test comprehension not involving productive writing in French. **15 marks** **Writing**: response to a written text, summarising main points and offering personal response. **30 marks** **Cloze test**: multiple choice gap-filling to test candidates' awareness of given grammatical points. **15 marks** **4.** **<u>Speaking and reading:</u>** externally marked. Conducted either by teacher (tapes sent to external assessor) or visiting examiner. 15 mins **– 15%** **Discussion:** 5-6 mins **20 marks** Candidates have 20 mins to prepare responses to short written stimulus in French and to engage in discussion with examiner. **General conversation:** 10-12 mins **40 marks** Candidates discuss with examiner current issues associated with target country/community. Candidate offers three topics, examiner chooses one or two. Candidates may bring short notes in French. **5.** **<u>Listening, reading and writing 2:</u>** externally marked. 165 mins – **20%** **Listening: 25 marks** One or two extended listening tests.

	well developed, structured essay, and 5 marks for expression (language, spelling etc.). There is no separate Listening Comprehension test.	Questions and answers in French **Reading comprehension: 45 marks** One or two extended reading texts. Some exercises involve non-verbal answers or answers in English to English questions. One of the questions in French requiring French answers or other tasks in French (e.g. completing sentences, definitions, etc.) **Writing in French and Transfer from English: 10 marks** Candidates transfer meaning of an English text of 300-400 words into French. (Involves a guided summary of specified parts of the text to which candidates add own opinion.) **6.** **<u>Culture and Society:</u>** either as a externally marked written examination (120 mins) or as coursework – **15%** **<u>Either:</u>** ***Written paper option: 60 marks*** Three sections. Candidates answer two questions, which may come from either one or two sections. (300-500 words in French) **Set Literary Texts:** two questions on each of eight set texts, one a commentary, the other an essay. Candidates may not choose both questions on one text. No texts to be brought to the examination room. **Literary Topics:** one question on each of six set literary topics (e.g. Love in Literature). Candidates are free to choose their own texts. **Non-Literary Topics** Two questions on each of eight set non-literary topics (e.g. *La jeunesse en France*) OCR indicates in advance which two of a list of sub-topics within a broad topic area will be tested (e.g. *conflit des générations; les loisirs*) ***<u>Or:</u>*** ***Coursework option: 60 marks*** (teacher marked and standardised by Centre, external postal moderation) Candidates submit one long piece (1200-1400 words) or two short pieces (600-700 words) in French on topics or texts of their choice related to France.

		No dictionaries allowed in any external assessment or in preparation time for speaking tests. Listening tests by means of personal stereos with rewind facility or language laboratory. The usual sequence and timing of taking the above units is the first three in the first year of the course (leading to an AS level) and the remaining three in the second year, but alternative sequences are acceptable. Units may be re-taken. Broad topic areas are published (all relating to the target-language country), indicating the areas from which reading and listening material will be drawn. A list is published of grammatical structures which candidates may be expected to recognise or use. Grade Boundary UMS marks are published for all units. Grade descriptors are published for each of the elements (speaking, reading and listening, writing, cultural component) at Grades A, C and E. Broad **Assessment Objectives** are published, relating to candidates' ability to: ▪ understand and respond, in speech and writing, to both spoken and written French; ▪ demonstrate knowledge prescribed grammar and syntax and apply it accurately; ▪ demonstrate knowledge and understanding of aspects of French society. **<u>Assessment Criteria</u> are published in the form of grids for the various components, describing the levels to be attained for the award of each mark. In some tests, detailed and specific point-by-point mark-schemes are used instead.**
Coursework assessment	None in the conventional sense of items submitted specifically as 'coursework', although the Preliminary Mark reflects the standard of work produced throughout the course.	See **Culture and Society** coursework option above – component 6 in first section.

Oral examination	**<u>24% mark from Oral Examinations</u>**, based on Year 7 syllabus, but also testing knowledge gained in previous years (particularly Year 6). Examination lasts 20 minutes (following 20 minutes' preparation time, during which notes may be made). Topics determined by drawing lots. Examination conducted by two examiners: the candidate's teacher and an external examiner. Marks awarded by each examiner on a scale of 0-10, including half-marks: the final mark is the arithmetical average of the marks awarded by the two examiners (teacher and external).	See **Speaking Tests** above: components 1 and 4 in first section.
Synoptic assessment	None specified, other than saying that the terminal examination at the end of Year 7 will draw on / test knowledge gained in previous years (particularly Year 6). The essay questions in the terminal Written Examination invite candidates to draw on their knowledge of other set texts from the course and on other personal reading.	Yes, specifically in the Speaking and Reading Test and the Listening, Reading and Writing 2 Test (components 4 and 5 above).

1.9.1 Doc 1.1

Mapping Table – European Baccalaureate / OCR A Level and IBD **Subject: FRENCH**

Syllabus compared: IBD Language B French Higher Level

4. Complete the first column with a detailed list of the topic areas covered in the European Baccalaureate syllabus.
5. Insert a tick, or similar, to show where the topic is covered by the comparator specification – please delete option columns if there are no options.
6. Include comments to describe where a topic is covered in greater depth in one or other specification, where possible estimate how much time it would take to deliver the extra depth.

EB syllabus content	Present in core of comparator	Present in optional unit …	Covered in greater depth in EB	Covered in greater depth in IBD
There is very little laid down that could be described as 'syllabus content' or 'topic' areas' in any of the three syllabuses under consideration. What is given is a number of desired skills or competencies to be developed and assessed				
Listening and Speaking: Hold a conversation at a sophisticated language level Adapt to registers of language Present an argument, refute and convince	✓ ✓ ✓		✓ (in a formalised way)	Doubtful how much variety of register actually exists in EB (assessments in particular)
Reading Understand a variety of texts and media Read for overview whole literary works Read and analyse literary works, particularly those prescribed for study on the set list for the year	✓ (much wider variety)	✓ ✓	✓ (literary texts only) ✓ ✓	✓ (non-literary texts and other sources)
Writing Produce a written argument using the	✓ (written argument		✓ (in a formalised way)	

structure “introduction, development, conclusion” Produce a written narrative following the criteria required (tense, person, tone, language level etc. Carry out activities linked to the set works	yes, but less concern for set structure) ✓ (written narrative yes, but less emphasis on ‘required criteria’)	 ✓	 ✓	

Content included in IBD French B HL (comparator syllabus) but not in EB syllabus

Please list any topics that are included in the IBD specification but not in the EB syllabus.

12. The topic areas which form the material for exercises on which students are assessed cover a wide range of issues of general interest from contemporary French society and culture. This is in very marked contrast to the EB programme, where the source material is largely of a literary nature, requiring for the most part 'literary' responses.

13. There is also a wide range of stimuli and an emphasis on a variety of authentic and up-to-date sources of material and language – notably, contemporary newspaper and magazine articles and websites.

14. Teachers are encouraged to ensure that students are exposed to high-quality texts during the course as an aid to their own powers of expression, but there is no obligation to incorporate literary study, and it is largely unassessed, although one text in Paper 2 is a literary one. This is in very marked contrast to the EB programme.

15. There is a far wider range of assessment exercises: multiple-choice, gap-filling (cloze tests), non-verbal answers, sentence completion, definitions, picture or cartoon stimuli, word substitution, matching statements with items from the text etc.

16. There is an emphasis on a range of material to be communicated and the target audience, and therefore on appropriate register.

17. There is a general emphasis on language acquisition, 'message' and communication.

Comparison Table for comparison of assessment models

Use this table to make direct comparisons between the syllabuses in the following areas:

6. structure of the assessment model, including the format of assessment for the specification/syllabus
7. whether coursework is assessed, the kinds of coursework assessed and contribution to overall grade
8. whether oral assessment is part of the assessment model, and the extent and format of oral assessment
9. whether the assessment model is unit-based or requires candidates to take a synoptic view of the topics, and to what extent

NOTE: the prose commentary on the assessment models should draw attention to significant differences in the requirements for the European baccalaureate and A Level or IB.

	European Baccalaureate	**International Baccalaureate Diploma**
Assessment structure, format and timings	Language II is one of the compulsory elements which make up the five components of the EB. An overall average of 60% is the basic requirement for the award of the EB. The percentage for each subject is calculated as follows: **<u>40% Preliminary Mark</u>**, teacher assessed, made up of two elements: a) **15%** as an arithmetical average	A second language is one of the compulsory elements which make up the six components of the IB Diploma (in addition to the requirement for an Extended Essay, a course in the Theory of Knowledge and participation in the CAS programme). This language can be studied can be studied at: ▪ A1 level (mother tongue equivalent in the case of students

	of two end-of semester marks awarded by the class teacher for class work in each of the two semesters in Year 7. b) **25%** awarded on the basis of written class examinations at the end of the first semester (end of January) in Year 7. Examinations the same length as in the external terminal written EB examination. **<u>36% mark from the externally set terminal Written Examination</u>**, based on Year 7 syllabus, but also testing knowledge gained in previous years (particularly Year 6). Scripts marked first by candidate's teacher and then by external examiner. **<u>The Language II written exam</u>** lasts three hours (four in the case of Advanced Language II [*approfondissement*]). All texts, instructions and questions in target language. All answers in target language. No dictionaries. **The Language II written exam** is based on a literary passage giving rise to: ▪ three comprehension questions – **20 marks** ▪ two interpretation questions – **40 marks** ▪ an essay question - a choice of two, only one of which is chosen by the candidate. In the paper provided for comparison, one essay consisted of inviting candidates to write a newspaper article describing the event related in the literary text. The other choice consisted of a topic of a general literary nature in which candidates were invited to give examples from the set texts which they had studied and from personal reading – **40 marks.** The 'corrigé' (suggested correct or model answer) provides markers with outlines of the elements to be expected and rewarded in Comprehension and Interpretation exercises, but no indication of how the marks are to be awarded. There is an assessment grid indicating the	who effectively have two mother tongues; a heavily literary course); ▪ A2 level (high level of language competence, including usually at Higher Level some who are 'bilingual' and/or who may study other subjects in this language); ▪ B level (students with perhaps 4 or 5 years' experience of learning the target language in the case of Higher Level students but who have not yet reached A2 level); ▪ *ab initio* level. The second language can be studied at either Higher or Standard Levels (with the exception of *ab initio* which be taken at only Standard Level). The B Higher level being used as the comparator in this study focuses on language acquisition up to quite a sophisticated level, well beyond that which is achieved at *ab initio* level. In reality, particularly perhaps in an international environment, some of those who take it can be pretty competent speakers of the language. Three subjects have to be studied at Higher Level. Each of the six components is scored on a 1-7 scale, regardless of whether it is studied at Higher or Standard level. There are three bonus points available for the Extended Essay and Theory of Knowledge components. A total of 24 points is needed pass the Diploma, with minimum scores required in the subjects taken at Higher Level. *<u>Assessment</u> is criterion-referenced, not norm-referenced. Candidates are assessed in relation to their performance against identified criteria or 'descriptors'. In everything other than the Reading element of Paper 1 (for which there is a paper-specific mark-scheme) candidates' work is assessed according to established assessment criteria and mark-band descriptors. For each assessment criterion, six descriptors are defined, denoting achievement levels 0-10. Teachers and markers identify the descriptor which most adequately conveys the achievement level attained by the candidate's work. They then decide whether the work should be placed at the top of that band or at the bottom of it. Only whole numbers are*

	criteria for marks to be awarded in the Essay. **<u>The Advanced Language II (*approfondissement*) paper</u>** is based on a literary passage giving rise to: ▪ Five questions of an analytical nature on the text – 5 x 10 = **50 marks** ▪ A literary essay based on the set texts studied and on personal reading (choice of two subjects of which the candidate chooses only one) - **50 marks** The 'corrigé' provides markers with outlines of the elements to be expected and rewarded in the question on the text, but no indication of how the marks are to be awarded. A very general indication of elements to be expected and rewarded in the Essay is also provided. 15 marks are available for giving precise examples from text studied or personal reading, 10 marks for putting forward a reasoned argument based on the subject, 20 marks for constructing a well developed, structured essay, and 5 marks for expression (language, spelling etc.). There is no separate Listening Comprehension test.	*used. It is stressed that the descriptors should not be seen as marks or percentages, and that it is inappropriate to think in terms of a pass/fail boundary when applying descriptors. Neither should it be assumed that a group of candidates being assessed will follow any particular distribution pattern.* **<u>Written Component</u>** (externally set and assessed at the end of the course): Two written papers of 90 mins: **<u>Paper 1: Text handling: 40%</u>** **Reading** (questions based on written non-literary texts of different lengths and levels of difficulty): **27%** All texts and questions in target language. All answers in target language. All texts have different communicative purposes. At least one text is literary in nature. No dictionaries. Variety of reading skills assessed. Various types of exercises involved – e.g. multiple choice, true or false, gap-filling, matching summary sentences with different sections of the text, identifying related ideas from different parts of the text, matching words or phrases from the text with definitions etc. **Written response** (short writing exercise in response to written texts): **13%** Candidates attempt one task only. A minimum of 100 words required. Candidates required to manipulate language and information given in source text and integrate them in a response intended for a specific audience. Direct copying from the text not rewarded – candidates need to adapt the original text and integrate it appropriately in their response. Candidates need to use language appropriate to the specific type of text. Typical exercises: letter of application; report/diary of events, producing a guide/brochure etc. Types of texts and exercises not replicated in Paper 2. **<u>Paper 2: Written Production</u>: 30%** All answers in target language. No dictionaries. A minimum of 400 words required (250 words at Standard Level) – no upper word limit, but quality more important

		than quality. Choice of six tasks – only one to be attempted. Tasks are varied, requiring candidates to identify the communicative purpose(s) of the task in order to use language appropriate to the type of text and the intended audience. Subjects of a non-literary nature, except one at Higher Level which presents an opportunity for candidates to draw on any reading which they have undertaken. There is no separate Listening Comprehension test. All texts, instructions and questions in French. All answers to be written in French.
Coursework assessment	None in the conventional sense of items submitted specifically as 'coursework', although the Preliminary Mark reflects the standard of work produced throughout the course.	None, although the Interactive Oral Activity is assessed from work done in this area throughout the course.
Oral examination	**<u>24% mark from Oral Examinations</u>**, based on Year 7 syllabus, but also testing knowledge gained in previous years (particularly Year 6). Examination lasts 20 minutes (following 20 minutes' preparation time, during which notes may be made). Topics determined by drawing lots. Examination conducted by two examiners: the candidate's teacher and an external examiner. Marks awarded by each examiner on a scale of 0-10, including half-marks: the final mark is the arithmetical average of the marks awarded by the two examiners (teacher and external).	**<u>Oral Component</u>** (internally assessed by teacher, recorded, and externally moderated): **30%** Assessment takes place during the final year of the course. Involves an element of response to the spoken language (e.g. conversational exchanges and/or response to oral material from TV, radio etc.) Consists of two elements: **<u>Individual Oral</u>** (10 mins) **15%:** Three sections: **Interview part 1** (3-4 mins) – previously prepared presentation based on support material of candidate's choice (advised by teacher) reflecting some element of the culture studied during the course. **Interview part 2** (3-4 mins) – follow-up questions from teacher and discussion. **Part 3** (3-4 mins) – general discussion on a wide variety of potential issues, not specifically based on what the candidate has studied during the course. Candidates allowed to bring brief working notes (10 short points approx) into the interview room. These are for reference only and must not be read out as a prepared speech. **<u>Interactive Oral Activities</u>: 15%** Candidates are assessed by their teacher on one interactive oral activity which has

		taken place during the course. The activity may be based on a range of material in the target language (advertisements, literary texts, films, recordings etc) and must be related to the culture studied. These may involve whole-class activities (e.g. debate, or presentation to the class of a particular topic followed by whole-class discussion) or smaller group/pair activities (e.g. discussion, role-play, exchanges of information based on written or visual stimuli.) This element of the oral is not recorded or externally moderated.
Synoptic assessment	None specified, other than saying that the terminal examination at the end of Year 7 will draw on / test knowledge gained in previous years (particularly Year 6). The essay questions in the terminal Written Examination invite candidates to draw on their knowledge of other set texts from the course and on other personal reading.	None specified, but the Extended Essay may provide an opportunity in this respect.

1.9.1 Doc 1.2

Mapping Table – European Baccalaureate

Subject: French

Syllabus compared Leaving Certificate

7. Complete the first column with a detailed list of the topic areas covered in the European Baccalaureate syllabus.
8. Insert a tick, or similar, to show where the topic is covered by the comparator specification – please delete option columns if there are no options.
9. Include comments to describe where a topic is covered in greater depth in one or other specification, where possible estimate how much time it would take to deliver the extra depth.

EB syllabus content	Present in core of comparator	Present in optional unit …	Present in optional unit …	Covered in greater depth in EB	Covered in greater depth in LC…
There is very little laid down that could be described as 'syllabus content' or 'topic' areas' in the EB syllabus. What is given is a number of desired or competencies to be developed and assessed.					
Listening and speaking: Hold a conversation at a sophisticated language level Adapt to registers of language Present an argument, refute and convince	✓ ✓ ✓			✓ ✓	'Sophisticated level' not specified in LC * EB assessments viewed used only formal register LC requires that pupils be able to 'state and defend personal opinions
Reading: Understand a variety of texts and media Read for overview whole literary works Read and analyse literary works, particularly those prescribed for study on the set list for the year	✓ ✓			 ✓	* Only literary texts are listed in EB syllabus. LC specifies 'mass media and more accessible literature' While reading whole literary texts is stated as desirable in the syllabus, it is rarely done in practice. Extracts are relied upon by most teachers.

Writing: Produce a written argument using the structure 'introduction, development, conclusion' Produce a written narrative following the required criteria – tense, person, tone, language level etc. Carry out activities linked to the set works	✓ ✓			✓ ✓	Coherent expression of personal opinions but no set structure required Informal narrative only with no set criteria

Content included in Leaving Cert French (comparator syllabus) but not in EB syllabus

Please list any topics that are included in the LC specification but not in the EB syllabus

18. The LC syllabus is organised around a series of behavioural objectives, grouped around themes and related activities, e.g. engaging in discussion, dealing with emergencies, buying goods and services etc. Each theme has an accompanying list of performance targets, e.g. in a discussion, 'insisting that something is true, denying, contradicting, negotiating a compromise' etc. Linguistic skills and grammatical and structural elements to be acquired are listed in conjunction with these themes.

19. Language awareness is a stated behavioural objective. Pupils are expected to learn about language in general from target language material.

20. Cultural awareness, which is defined as 'learning in the target language about the present-day culture associated with the target language'. There is a list of general performance targets, activities and themes in the area of cultural awareness, e.g. 'outlining in broad terms the principal links between the target language community and Ireland.' 'Understanding, describing and discussing in general terms issues that transcend cultural divisions', e.g. ethnic minorities, health and lifestyle, the third world etc.

Comparison Table for comparison of assessment models

Use this table to make direct comparisons between the syllabuses in the following areas:

10. structure of the assessment model, including the format of assessment for the specification/syllabus
11. whether coursework is assessed, the kinds of coursework assessed and contribution to overall grade
12. whether oral assessment is part of the assessment model, and the extent and format of oral assessment
13. whether the assessment model is unit-based or requires candidates to take a synoptic view of the topics, and to what extent

NOTE: the prose commentary on the assessment models should draw attention to significant differences in the requirements for the European baccalaureate and A Level or IB.

	European Baccalaureate	**Irish Leaving Certificate French**
Assessment structure, format and timings	Language II is one of the compulsory elements which make up the five components of the EB. An overall average of 60% is the basic requirement for the award of the EB. The percentage for each subject is calculated as follows: **<u>40% Preliminary Mark</u>**, teacher assessed, made up of two elements: a) **15%** as an arithmetical average of two end-of semester marks awarded by the class teacher for class work in each of the two semesters in Year 7. b) **25%** awarded on the basis of written class examinations at the end of the first semester (end of January) in Year 7. Examinations the same length as in the external terminal written EB examination. **<u>36% mark from the externally set terminal Written Examination</u>**, based on Year 7 syllabus, but also testing knowledge gained in previous years (particularly Year 6). Scripts marked first by candidate's teacher and then by external examiner. **<u>The Language II written exam</u>** lasts three hours (four in the case of Advanced Language II [*approfondissement*]). All texts, instructions and questions in target language. All answers in target language. No dictionaries. **The Language II written exam** is based on a literary passage giving rise to:	• Study of a language other than English and Irish is not compulsory but there is a high uptake of French in LC. • Assessment is based on the work covered throughout the candidates' six years in secondary school. • All elements of the examination are based on the syllabus content. • All examinations are externally set by the State Examinations' Commission. All candidates in the State sit the same examination. • There is no continuous assessment. All assessment is by means of a terminal examination. An oral examination is conducted in March or April of 6th year and a written paper and aural test in June of the same year. • There is no internal assessment. All assessment is carried out by external markers. In the case of the written and aural examination, complete anonymity of both candidate and examiner is maintained. • No dictionaries or other aids are permitted in the examination. • The examination is set at two levels, higher and ordinary. Candidates do not have to opt finally for one or other level until the day of the written examination. The format is similar at both levels (e.g. same cd in listening test) but questions and assessment criteria are more demanding at higher level. **The following is a description of the higher level examination:**

	▪ three comprehension questions – **20 marks** ▪ two interpretation questions – **40 marks** ▪ an essay question - a choice of two, only one of which is chosen by the candidate. In the paper provided for comparison, one essay consisted of inviting candidates to write a newspaper article describing the event related in the literary text. The other choice consisted of a topic of a general literary nature in which candidates were invited to give examples from the set texts which they had studied and from personal reading – **40 marks.** The 'corrigé' (suggested correct or model answer) provides markers with outlines of the elements to be expected and rewarded in Comprehension and Interpretation exercises, but no indication of how the marks are to be awarded. There is an assessment grid indicating the criteria for marks to be awarded in the Essay. **The Advanced Language II (*approfondissement*) paper** is based on a literary passage giving rise to: ▪ Five questions of an analytical nature on the text – 5 x 10 = **50 marks** ▪ A literary essay based on the set texts studied and on personal reading (choice of two subjects of which the candidate chooses only one) - **50 marks** The 'corrigé' provides markers with outlines of the elements to be expected and rewarded in the question on the text, but no indication of how the marks are to be awarded. A very general indication of elements to be expected and rewarded in the Essay is also provided. 15 marks are available for giving precise examples from text studied or personal reading, 10 marks for putting forward a reasoned argument based on the subject, 20 marks for constructing a well developed, structured essay, and 5 marks for expression (language, spelling etc.).	**Written paper: duration 2 hrs 30 mins - 220 marks (55%)** **Section I, reading comprehension - two passages, each worth 60 marks (15%)** Questions to be answered in French test specific areas of comprehension and the awareness of different levels of meaning within the text. There are normally one or two multiple choice questions. In other questions, candidates are required to manipulate the target language only where this is required for the sense of the answer. One or two questions also test language awareness and grammar. A question on each passage, to be answered in English, tests global comprehension and awareness of stylistic aspects of the text. **Passage 1** is normally a passage of current journalistic French. **Passage 2** is a modern literary extract. **Section II, written production (100 marks, 25%) –** one compulsory question (40 marks 10%), choice of (a) or (b), which link with the subject matter of the two comprehension passages, (synopticity). 100 words, no penalty for excess. Two other questions to be chosen from three, (each worth 30 marks, 7.5%). All three have (a) or (b) options. 75 words, again no penalty for longer answers. Range of topics of interest to examination cohort age group. One option has English/Irish language stimulus.Varied formats range from diary entries to emails to formal letters. Some are 'donnez vos réactions' questions. Marks are divided evenly for communicative ability and language accuracy **Listening test (80 marks, 20%) – duration 40 mins approximately.** Takes place after a ten minute break at end of the written paper. All question and answers in English or Irish.

	There is no separate Listening Comprehension test.	
Coursework assessment		There is no continuous assessment. All assessment is by means of a terminal examination.
Oral examination		**Oral examination (100 marks, 25%).** All candidates take the same oral examination. In the case of candidates who eventually opt for the ordinary level examination, the oral mark is converted to a mark out of 20% of the total. The oral test takes the form of a 13 minute (approx) conversation with a visiting examiner appointed by the SEC. Candidates may opt to discuss a document (newspaper article, photograph, book etc.) during this conversation. Marks are divided evenly for communicative ability and language accuracy
Synoptic assessment		See section on written production.

General Comments

Comparison of outcomes Leaving Certificate and European Baccalaureate

A comparison of the attainments of candidates in these two examinations is extremely difficult for the following reasons:

- In LC the oral examination carries 25 % of the marks and I have no information on the oral performance of the candidates whose scripts I received in either examination.
- In LC the listening test is worth 20%. There is no listening test in EB.
- I received no top category LC scripts (**A** grade i.e. 85% +)
- Only an overall mark was provided for the EB scripts. There was no breakdown of the marks awarded for individual questions.
- The written papers are so different in nature that comparison of results is not really possible. The EB examination is almost exclusively literary in nature. It requires analysis and comment on both unseen and set texts at a very high level. This does not form part of the LC examination.
- The EB examinations last a total of 7 hours. The LC written paper is only 2.5 hours.

In light of the above comments I can make only very general observations on the outcomes of the two examination systems.

EB candidates, even some of the weaker ones, seem to have a much higher level of fluency, a richer vocabulary and more idiomatic French than their LC counterparts. Their ability to set forward an argument and to comment on literary texts is also much more advanced.

It must be remembered that LC candidates are examined in seven or eight subjects and therefore the same depth and specialisation in each subject is not required of them as is required of candidates in other systems who proceed to their final examination with fewer subjects.

1.9.1 Doc 1.3

Comparison of outcomes EB –LC
Leaving Certificate and European Baccalaureate

A comparison of the attainments of candidates in these two examinations is extremely difficult for the following reasons:

- In LC the oral examination carries 25 % of the marks and I have no information on the oral performance of the candidates whose scripts I received in either examination.
- In LC the listening test is worth 20%. There is no listening test in EB.
- I received no top category LC scripts (**A** grade i.e. 85% +)
- Only an overall mark was provided for the EB scripts. There was no breakdown of the marks awarded for individual questions.
- The written papers are so different in nature that comparison of results is not really possible. The EB examination is almost exclusively literary in nature. It requires analysis and comment on both unseen and set texts at a very high level. This does not form part of the LC examination.
- The EB examinations last a total of 7 hours. The LC written paper is only 2.5 hours.

In light of the above comments I can make only very general observations on the outcomes of the two examination systems.
EB candidates, even some of the weaker ones, seem to have a much higher level of fluency, a richer vocabulary and more idiomatic French than their LC counterparts. Their ability to set forward an argument and to comment on literary texts is also much more advanced.
It must be remembered that LC candidates are examined in seven or eight subjects and therefore the same depth and specialisation in each subject is not required of them, as is required of candidates in other systems, and who proceed to their final examination with fewer subjects.

1.9.1 Doc 1.4

Mapping Table – European Baccalaureate /and Swedish Upper Secondary Standards

Subject: French
Coverage compared: Swedish Upper Secondary Standards

1 The first column is a detailed list of the topic areas covered in the European Baccalaureate syllabus.
2 Insert a tick, or similar, to show where the topic is covered by the comparator specification – please delete option columns if there are no options.
3 Include comments to describe where a topic is covered in greater depth in one or other specification, where possible estimate how much time it would take to deliver the extra depth.

EB syllabus content	Present in Swedish standards	Covered in greater/ less depth in EB	Covered in more/ less depth in the Swedish standards for stage 4 (out of 7)
Oral work	Yes	Oral proficiency is not dealt with separately in the EB syllabus for French L 2, Cycle 6-7, hence difficult to know whether the goal for argumentation ("Maîtriser la pratique de l'argumentation") refers to oral production and interaction. However, if so, this goal is set higher than for French, stage 4, in the Swedish syllabus.	The goals for oral production and interaction in the Swedish syllabus for stage 4 do not reach beyond the personal sphere and do not include argumentation. "Students should be able to actively take part in discussions on familiar subjects, and with the help of different strategies communicate effectively; … be able to orally relate and describe something which they have seen, heard, experienced or read, as well as express and give their reasons for how they understand a topic that is of personal importance"
Reading			
Writing from different periods	Yes	Literary texts covered in more depth in EB	No emphasis on literature from different periods, but rather on fairly simple, what can be inferred to be reasonably contemporary, literature; "Modern languages, stage 4, broadens the language ability and contains different variants of the language. *Students read and understand simple literature*, and develop their ability to communicate orally and in writing."
Play by Shakespeare			
One pre-20th century text			
Variety of works from different genres	Yes	Covered in more depth in EB	Texts from different genres; "Students should be able to read and assimilate the

			contents of relatively simple literature and other narratives, descriptions and texts putting forward arguments in subjects with which they are familiar".
Thematic work Year 7			
Personal reading programme			
Other literatures	Yes		"Students should have knowledge of everyday life, society and cultural traditions in some countries where the language is spoken, as well as be able to make comparisons with their own cultural experiences".
Writing			
Write accurately	Yes		No specific focus on written accuracy in the goals for French, stage 4; however, the ability to master formal aspects of language is mentioned in the general part of the syllabus for languages as a prerequisite for communicative competence.
Write effectively to instruct, describe, argue, explore, entertain	Yes	Covered in more depth in EB	To be awarded a pass mark for Stage 4 French (i.e. the minimal requirement for this stage), students should be able to "express themselves understandably in writing and write, e.g., both personally in simple language about experiences and thoughts, and also short reports of simple narratives and articles." For the higher grade levels a certain adaptation to different audiences (and purposes) is required.
Write with understanding of Literarure and critical sources	No		
Describe rhetorical devices	No		
Plan and draft in limited time	Yes		Required in examinations in both EB and the Swedish system.
Write Summaries	No		
Knowledge about Language			
Theoretical Frameworks	Yes		" …the ability to master the form of a language, i.e. its vocabulary, phraseology, pronunciation, spelling and

			grammar,.."
Contextual variation	Yes		
Language change	No		
Comparative Linguistics	No		
Regional accents and dialects	Yes		"…understand clear speech, even though regional in nature…"
Comparison of Assessment Objectives			
			For French (as for German and Spanish) in the Swedish school system a national, electronic test bank is provided, from which teachers can download testing materials to be used to support their grading of students' language proficiency in relation to the nationally set goals and grading criteria. Thus, the national materials have a complementary function in the continuous assessment carried out in the classroom *(see further comments in report).*

Content included in Swedish but not in EB syllabus

Please list any topics that are included in the Swedish national syllabus but not in the EB syllabus…

1. Clearer focus on listening both as a receptive and interactive skill

2. More emphasis on meta-cognitive skills, i.e. awareness of how language is learnt, reflection, self-assessment, ability to plan, take responsibility for, and evaluate one's work, etc.

3. Use of relevant and available aids for learning

4. More explicit focus on the use of strategies in language use.

Comparison Table for comparison of assessment models

Use this table to make direct comparisons between the syllabuses in the following areas:

14. structure of the assessment model, including the format of assessment for the specification/syllabus
15. whether coursework is assessed, the kinds of coursework assessed and contribution to overall grade
16. whether oral assessment is part of the assessment model, and the extent and format of oral assessment
17. whether the assessment model is unit-based or requires candidates to take a synoptic view of the topics, and to what extent

NOTE: the prose commentary on the assessment models should draw attention to significant differences in the requirements for the European baccalaureate and A Level or IB.

	European Baccalaureate	**Swedish National Assessment materials for 'French stage 4'**

Assessment structure, format and timings	What we have seen, i.e. the basis for our analysis, is the EB Written exam in June, constituting 36 % of the basis for total mark. From what we know, there are additional exams in January (25 %), and oral exams in June (24 %).	National testing materials for French, stage 4, provided through an electronic test bank; advisory function, not compulsory for schools to use (however, the vast majority do). *See report for further information.* Four subtests in the testing materials: Oral test (interaction and production) Listening comprehension (selected and constructed response formats) Reading comprehension (selected and constructed response formats) Writing test (prompts given, but creative writing enhanced)
Coursework assessment	According to our information about the EB, assessment of coursework from the 7th year constitutes 15 % of the total mark.	Not specified in the syllabus but continuous assessment is carried out, inter alia through classroom tests, produced by individual teachers, groups of teachers, or provided in the course books used. When awarding the final grade, teachers are required to combine "all sources of evidence", i.e. combine their observations from continuous assessment with the results on the nationally provided testing materials – if used (no proportions between the two specified).
Oral Work	Oral exam in June (24 %), as well as continuous assessment (we suppose)	See above – part of the national testing material as well continuous assessment

General Points

There are seven, successive courses of foreign languages in the Swedish syllabuses – from stage 1 (beginners) to stage 7 (advanced level). English is the first foreign language, mandatory up to stage 5 in the vocationally oriented study programs in upper secondary school), and stage 6 in the academically oriented programs. The requirements in upper secondary school for a second foreign language, in this case French, is that students in theoretically oriented, university preparatory, study programs should study at least one or two (depending on study orientation) of the seven stages. Higher levels are promoted by newly introduced so called "merit points". Theoretically, students can study courses up to stage 7; this however happens very rarely, and in very few schools in the country. The "normal" case is rather Stage 3 or 4. The comparisons with the EB have thus been made in relation to the national goals and grading criteria for Stage 4 *(more information in report).*

Commentary on examination scripts

EB focuses on analysis of literary texts whereas there is no such focus in the Swedish national testing materials. The different types of literary knowledge mentioned below may however, to some extent, be assessed continuously, or in classroom examinations.

Knowledge about drama, the short story, autobiography, travel writing.

Knowledge about Poetry

Knowledge about Novel

Knowledge about variety of genres

Links with other literatures

1.9.1 Doc 1.5

EB French Language II and French as a second foreign language in Swedish upper secondary school – a comparison of standards and specifications

French is a second foreign language in the Swedish school system, usually taught from grade six in secondary school (students around 12 years of age). In secondary school, students can choose between French, German and Spanish (French being the least common of the three). The study of a second foreign language is not compulsory in secondary school, although strongly recommended. In the academically oriented study programs in upper secondary school, though, a second foreign language is mandatory. However, this can be taken at beginners' level, although higher levels are promoted through newly introduced so called "merit points". The range of languages in upper secondary school is wider than in secondary school, for example Italian, Russian and Chinese being taught in a number of schools. It needs to be emphasized, however, that the national syllabus for Modern languages is the same for all these languages.

The Swedish national syllabus for foreign languages (i.e. all foreign languages, both English and second and third FLs), to a considerable extent inspired by the Common European Framework of Reference/CEFR, defines 7 successive levels/stages of language competence. As already mentioned, there is no fixed level requirement for the second foreign language for university entrance. However, considered a reasonable point of comparison, stage 4 has been chosen for the present analysis. The minimal requirements for a Pass mark in Stage 4 is tentatively considered to correspond to (a fairly low) level B 1 in the CEFR, individual students however reaching further.

Teachers are responsible for the final grading of individual students in the Swedish school system. To support them in this, there is an electronic test bank, currently offering materials for stages 2-4 in French, German and Spanish (the most frequently taught second foreign languages). None of these materials are mandatory for schools to use, although a vast majority do. However, it needs to be emphasized that the function of the tests is advisory: they should form one of the sources of evidence used by teachers when determining individual students' final grades.

It needs to be emphasized that the Swedish syllabus, which is part of the national curriculum, contains goals and grading criteria but, unlike the EB syllabus, no instructions concerning content and methods. This is due to a political decision in the early 1990s, aimed at decentralising the Swedish school system. Consequently, schools and teachers are expected, in active collaboration with their students, to make decisions about the more concrete 'whats?' and 'hows?' of instruction.

The present comparison is made between French as Language II (Cycle 6-7) in the EB system and French as a second foreign language, stage 4, in the Swedish system.

The EB syllabus is heavily literary in emphasis, the task stressing the importance of the analysis of literary material and the production of formal, reasoned, structured argument. As such it is very different from the Swedish [upper secondary] language syllabuses for French and other foreign languages, which clearly emphasize varied language acquisition and communicative, inter-cultural skills, as well as aspects of lifelong learning.

According to the Swedish syllabus (from 2000) the overall aim for studying Modern languages, of which French is one, is defined as follows [official translation by the National Agency for Education]:

"… The subject of Modern languages aims at pupils developing an all-round communicative ability. The ability to use a number of languages is important for international contacts and for an increasingly internationalised labour market in order to take advantage of the rapid developments taking place in information and communications technologies, as well as for further studies. Knowledge of languages is needed for studies, travelling in other countries and for social and vocational contacts of different kinds. /…/ The subject of Modern languages aims to provide a broader perspective of the surrounding world and of different cultures. The subject also aims at providing a tool for learning in different areas of knowledge. All pupils need the ability to further develop their knowledge after completing schooling. The subject aims at pupils maintaining and developing their desire and ability to learn languages."

The fact that the EB syllabus gives much more emphasis to literary studies and literary analysis is also reflected in the EB examination, where all the tasks are based, in some way, on literary texts. Since the Swedish syllabus aims at developing an all-round communicative ability and language skills necessary in an internationalised world, the Swedish national tests materials comprise subtests which in different ways highlight the assessment of students' oral and written receptive, productive and interactive competencies. Moreover, the materials are influenced by the intercultural goals in the syllabuses, through, for example, the choice of themes and texts, and the use of different accents in the subtests focusing on listening comprehension (further information about the Swedish school system, syllabuses and national assessment of foreign languages to be found at http://www.ipd.gu.se/english/units/language_and_literature_unit/nafs_eng/).

In the French reading and writing subtests for stage 4 students are exposed to a variety of short texts, with varying response formats, and topics for written production (one per test) requiring reporting or narrative writing. In the rating of the texts, comprehensibility and communicative ability and efficiency are emphasized, although analytic factors are also provided for the assessment of various aspects of content, organization and linguistic form. (Examples of a reasonably typical assessment tasks for French stage 4 available at http://provbanken.skolverket.se/sprak/franska/).

Since the emphasis of the EB course of French is drastically different, and the range of assessment tasks quite narrow as compared to the Swedish corresponding national test materials, it is extremely difficult to speculate as to how Swedish students would have managed if they had taken the EB exam. In our opinion, however, an average student at stage 4 would most certainly not be able to reach the pass level. Students at the higher stages of French in the Swedish system, and with grades above a clean pass, would probably be able to pass, provided they had been given instruction within the domain of literary analysis.

Gudrun Erickson; Kerstin Häggström
University of Gothenburg, Sweden
October 2008

1.9.1 Doc 1.6

Comparison Table for comparison of assessment models

Use this table to make direct comparisons between the syllabuses in the following areas:

18. structure of the assessment model, including the format of assessment for the specification/syllabus
19. whether coursework is assessed, the kinds of coursework assessed and contribution to overall grade
20. whether oral assessment is part of the assessment model, and the extent and format of oral assessment
21. whether the assessment model is unit-based or requires candidates to take a synoptic view of the topics, and to what extent

NOTE: the prose commentary on the assessment models should draw attention to significant differences in the requirements for the European baccalaureate and A Level or IB.

	European Baccalaureate	**Abitur**
Assessment structure, format and timings	Language II is one of the compulsory elements which make up the five components of the EB. An overall average of 60% is the basic requirement for the award of the EB. The percentage for each subject is calculated as follows: **<u>40% Preliminary Mark</u>**, teacher assessed, made up of two elements: a) **15%** as an arithmetical average of two end-of semester marks awarded by the class teacher for class work in each of the two semesters in Year 7. b) **25%** awarded on the basis of written class examinations at the end of the first semester (end of January) in Year 7. Examinations the same length as in the external terminal written EB examination. **<u>36% mark from the externally set terminal Written Examination</u>**, based on Year 7 syllabus, but also testing knowledge gained in previous years (particularly Year 6). Scripts marked first by candidate's teacher and then by external examiner. **<u>The Language II written exam</u>** lasts three hours (four in the case of Advanced Language II [*approfondissement*]). All texts, instructions and questions in target language. All answers in target language. No dictionaries. **The Language II written exam** is based on a literary passage giving rise to:	Although the study of languages in addition to German is compulsory for the Abitur, these other languages do not necessarily have to be examined. Of the four subjects in which students are examined, three will be examined on paper and one examined orally. This means that, unlike the EB and the IBD, candidates have some choice as to whether (and how) they will be examined in a second language, so those who sit this exam are those who have chosen to do so, rather than having to do so in order to qualify for a diploma, although to a lesser extent than at A level. There are 16 different regions, each of which sets a different exam each year. Assessment is by means of a terminal exam at either ▪ ***Leistungskurs*** (Higher or Advanced) or ▪ ***Grundkurs*** (Basic or Standard) level. The *Leistungskurs* is typically followed for 5 periods per week, and the *Grundkurs* for 3. **<u>Written paper</u>** There are separate papers set for each level, but both levels follow the same three-task format : **1 Comprehension and Analysis of Text** **2 Personal commentary (essay)** **3 Unseen translation passage (French into German)** **<u>Task 1 : Comprehension and analysis of text</u>**

	▪ three comprehension questions – **20 marks** ▪ two interpretation questions – **40 marks** ▪ an essay question - a choice of two, only one of which is chosen by the candidate. In the paper provided for comparison, one essay consisted of inviting candidates to write a newspaper article describing the event related in the literary text. The other choice consisted of a topic of a general literary nature in which candidates were invited to give examples from the set texts which they had studied and from personal reading – **40 marks.** The 'corrigé' (suggested correct or model answer) provides markers with outlines of the elements to be expected and rewarded in Comprehension and Interpretation exercises, but no indication of how the marks are to be awarded. There is an assessment grid indicating the criteria for marks to be awarded in the Essay. **<u>The Advanced Language II (*approfondissement*) paper</u>** is based on a literary passage giving rise to: ▪ Five questions of an analytical nature on the text – 5 x 10 = **50 marks** ▪ A literary essay based on the set texts studied and on personal reading (choice of two subjects of which the candidate chooses only one) - **50 marks** The 'corrigé' provides markers with outlines of the elements to be expected and rewarded in the question on the text, but no indication of how the marks are to be awarded. A very general indication of elements to be expected and rewarded in the Essay is also provided. 15 marks are available for giving precise examples from text studied or personal reading, 10 marks for putting forward a reasoned argument based on the subject, 20 marks for constructing a well developed, structured essay, and 5 marks for expression (language, spelling	270 minutes for the *Leistungkurs* and 210 minutes for the *Grundkurs* A substantial passage to be read - length of approx 750 words for the *Leistungkurs*; 550 for the *Grundkurs*. For the *Leistungkurs,* the text is from a modern literary source (but there are no prescribed literary texts for study) For the *Grundkurs,* the text is from a contemporary non-literary source (newsapaper article, reportage etc) There are three questions testing comprehension of the text and ability to explain/analyse content. The third of the questions on one of the *Leistungkurs* papers studied asks for a discussion of *'deux moyens linguistiques'* identified by the candidate from the text. **10 marks** are available for the <u>content</u> of the answers– see below under Task 2 for quality of language. *[In the papers studied from another region, the three-task format was the same, but:* ▪ *there are two texts at both levels, one from a modern literary source and one from a journalistic/reportage source (presumably a choice between them, although there was nothing to indicate this on the paper)* ▪ *the texts are significantly longer at both levels* ▪ *100 marks are available for the <u>content</u> of the answers at Leistungkurs level, and 80 at Grundkurs level.* ▪ *there is no indication of the length of the answers required* ▪ *there is no indication of how the marks for Task 1 are allocated (assuming they are) between content and quality of language.]* **<u>Task 2 : Personal commentary</u>** An essay on one of two topics of a discursive nature (choice of one of three at *Grundkurs* level) **10 marks** are available for <u>content</u>

	etc.). There is no separate Listening Comprehension test.	**20 marks** are available for correctness of language in **tasks 1 and 2** **10 marks** are available for quality of expression in **tasks 1 and 2** Candidates are required to produce **a minimum of 500 words** of French in response to **Tasks 1 and 2 combinred** for the *Leistungkurs* **and a minimum of 400 words** in French for the *Grundkurs*. ***[****In the papers studied from another region :* ▪ *there is a choice of four titles for the personal commentary (essay) at Leistungkurs level, and three titles at Grundkurs level.* ▪ *the essay is marked out of 50 at Leistungkurs level and 40 at Grundkurs level.* ▪ *the required length is 250-300 words at Leistungkurs level* ▪ *the required length is 150-200 words at Grundkurs level* ▪ *there is no indication of how the marks for Task 2 are allocated (assuming they are) between content and quality of language.* **<u>Task 3 : Unseen translation</u>** **<u>Unseen translation at *Leistungkurs* level</u>** : **20 marks** The passage to be translated is from a literary source, containing 140-150 words. **<u>Unseen translation at *Grundkurs* level</u>** : **10 marks** The passage is from a journalistic/reportage source, containing 140-150 words. *[In the papers studied from another region :* ▪ *the translation passages are somewhat longer* ▪ *they are marked out of 50 at Leistungkurs level, and 40 at Grundkurs level.]* Apparently, there is currently a move from literal translation to summary/gist translation. Sadly, no mark schemes were available for scrutiny. **<u>General</u>** Dictionaries (both mono- and bi-lingual) are allowed throughout the written paper.

		Instructions for individual questions are given in French. General instructions for the paper are given in German. There is no mention in the available material of any Listening test. **<u>None of the following information (if it exists) was available from the material available:</u>** ▪ List of topic areas from which material to be examined will be drawn. ▪ List of grammatical structures which candidates may be expected to recognise or use. ▪ Mark schemes ▪ Grade Boundaries (although the maximum grade is 15 'Notenpunkte' and the minimum is 0.) 13-15 is classified as very good 10-12 is good 7-9 is satisfactory etc ▪ Assessment Objectives ▪ Assessment Criteria: none were available for scrutiny, but there is apparently a recent move towards using grade descriptors rather than the 'one mark off per mistake' principle which has been in use in the past. **All exams are marked** by the teacher, with mistakes being indicated but no marks being written on the script. The scripts are then distributed anonymously to different schools, where the teachers re-mark them. (In some regions, the scripts are not sent to another school for anonymous re-marking, simply re-marked by another teacher in the same school.) A grade is then calculated on the basis of the two marks awarded. If there is a discrepancy or more than three 'Notenpunkte' a third marker re-re-marks and awards the grade on his/her own judgement.
	None in the conventional sense of items submitted specifically as 'coursework', although the Preliminary Mark reflects the standard of work produced throughout the course.	None in the conventional sense of items submitted specifically as 'coursework', but the marks obtained during the preceding two years of the course also contribute to the final grade.

Oral examination	**<u>24% mark from Oral Examinations</u>**, based on Year 7 syllabus, but also testing knowledge gained in previous years (particularly Year 6). Examination lasts 20 minutes (following 20 minutes' preparation time, during which notes may be made). Topics determined by drawing lots. Examination conducted by two examiners: the candidate's teacher and an external examiner. Marks awarded by each examiner on a scale of 0-10, including half-marks: the final mark is the arithmetical average of the marks awarded by the two examiners (teacher and external).	**<u>Oral test 20 marks</u> (20 minutes as part of the Written Paper)** Introduced two years ago. **20 marks available** Involves a range of topics on contemporary themes. The stimulus paper studied involved : ▪ *Le culte du corps* ▪ *La santé* ▪ *Lutte contre le tabac* ▪ *La famille* ▪ *Intégration – discrimination* ▪ *L'ordinateur et les nouvelles technologies* ▪ *Activités culturelles* ▪ *Les médias* ▪ *Le tiers monde* **These take the form of a dialogue/exchange between two students who conduct the oral between themselves with the teacher simply acting observer/assessor** (even if this is not indicated on the paper). (No indication of what happens if you have an odd number of candidates!) The dialogue is usually prompted by a visual stimulus (cartoon, poster, or a painting in the case of the *Activités culturelles* topic) which the candidates have to describe and comment on. There is then a related question/task of a more general nature to be discussed orally with the partner: in the case of *La Lutte contre le tabac*, for example, the task is *Dans beaucoup de pays européens, il est interdit de fumer dans les lieux publics. Donnez votre avis et menez un débat sur la campagne anti-tabac.* The emphasis is the student's ability to initiate and sustain a conversation, express agreement, disagreement, ask and answer questions. It is graded on criteria such as: fluency, content, correctness of language, interaction. (Specific details not available) **There is no preparation time.**
Synoptic assessment	None specified, other than saying that the terminal examination at the end of Year 7	None specified

	will draw on / test knowledge gained in previous years (particularly Year 6). The essay questions in the terminal Written Examination invite candidates to draw on their knowledge of other set texts from the course and on other personal reading.	

Content included in Abitur (comparator syllabus) but not in EB syllabus

Please list any topics that are included in the IBD specification but not in the EB syllabus.

1 The topics of the texts to which students are asked to respond cover a wide range of issues of general interest from contemporary French society and culture. This is in marked contrast to the EB programme, where the source material is largely of a literary nature, requiring for the most part 'literary' responses.

2 At least one of the texts in the *Leistungskurs* level is from a modern literary source, but there is also a wide range of stimuli and an emphasis on a variety of authentic and up-to-date sources of non-literary material and language – notably, contemporary newspaper and magazine articles, cartoons, posters, famous paintings etc. which is absent from the EB.

3 There is a general emphasis on language acquisition, 'message' and communication.

4 There is a translation exercise.

5 A significant shift of emphasis in the oral exam away from an interview between student and teacher towards a discussion between two candidates.

1.9.1 Doc 1.7

Report on the comparative study of the EB curriculum and the Abitur *Leistungskurs* and *Grundkurs*

There are a number of factors which complicate the comparison:

- The fact that there are 16 different German regions each of which sets its own Abitur papers each year. Although the overall structure is similar, there are differences.

- Because of the lack of background information on the particular sets of papers provided (no instructions page indicating length of paper, number of questions to be answered, whether dictionaries are allowed etc, or any mention of an oral) 2007 and 2008 papers from another region were chosen as the major focus of the study. Where variations contained in the papers provided are relevant, these have been added in a *different italicised font* in the mapping template.

- The lack of availability of mark schemes, marked scripts, assessment criteria, scripts, grade descriptors or grade boundaries from the Abitur.

- The use of dictionaries is permitted in the Abitur but not in the EB.

As noted at the time of the comparison of the EB French Language II syllabus with the IB Diploma and OCR A Level, the EB syllabus is a very traditional one in the classic francophone mould. It is heavily literary in emphasis, to the extent that all the assessment tasks in the papers studied are based in some way on literary texts. The tasks stress the importance of the analysis of literary material and the production of formal, reasoned, structured argument in the French tradition.

As such, the EB syllabus is very different in content and emphasis from the Abitur as well as from both the IB Diploma French B Higher Level course and the OCR A level, which are clearly language courses designed to promote first and foremost language acquisition and communicative skills. Even if the Abitur takes at least one literary text as the core of its assessment at *Leistungskurs* level, and may do so in one of the two *Grundkurs* papers studied, literary analysis and responses are not the prime purpose of the course.

In this sense, the EB course aims to do very different things from the other three (which share a good deal of common ground), which makes any comparative evaluation open to the criticism of not comparing like with like. The emphases of the EB course are so different that there is no merit in speculating as to how the IB, A level or Abitur candidates would have fared on it, or of how the EB students would have fared on a course much more obviously orientated towards language acquisition.

The EB programme is also very different from the other three in the narrowness of its range of topics, its source materials and stimuli.

Sadly, there were no Abitur scripts available for detailed comparison, but the levels of linguistic competence required to deal with the four courses (EB, IBD, A level and Abitur) would appear to be broadly similar on the different courses – even if they are writing in response to very different stimuli, on very different subjects and, it would appear, with very different objectives in mind. The courses are all demanding in their own ways – the problem being that the EB 'way' would appear to be a product of a very significantly different – (some might say anachronistic) - francophone tradition, culture and era, as opposed to the Abitur, IBD or A level which have (collectively, in spite of differences of emphasis between the three) developed in another 'way'.

Michael Featherstone
October 2008

Maths

1.9.2 Doc 1.1

Maths Comparative Study of the European Baccalaureate with OCR GCE A Level and the International Baccalaureate

EVALUATION OF THE EUROPEAN BACCALAUREATE

It has not been possible to answer some of the requirements outlined in the commission brief, despite extensive web research; I am unable to comment on amount of curriculum time allocated for the EB and GCE. Neither the EB nor the IB list key concepts, the syllabus is a list of topics to be studied which I have placed into tables to allow for comparison.

The three courses vary quite dramatically. Each course places a different emphasis on the Mathematics to be studied, so to do a direct comparison is not realistic. Each course assesses students to a high level of difficulty in my opinion, dependent on the focus. For the EB, the emphasis is Functions, for the IB, a focus is Trigonometry, for the GCE the emphasis is on algebra and then which ever option units the students decide to follow.

I only had access to EB and GCE papers. The differing styles of exam papers meant that I could not find a suitable question to do a favourable comparison on. I rejected option papers on Mechanics and Discrete maths at GCE and then was limited to C3 and C4 as the only core papers, which could be compared against the EB- since the EB assesses on the year 7 work, not so much the year 6 work and C3 and C4 are A2 modules i.e. year 7. I did not find similar questions to compare. The Statistics option at A2, showed comparable levels of difficulty to the EB statistics question, but there were only two questions on the EB paper to look at, one short and one optional. On the GCE there were over 10 questions per module. This presupposes that students will study this option at A2 and with so much choice; this is not necessarily going to occur. The GCE tends to ask short-response questions and the EB longer response questions, so again comparison is not easy and not objective.

In conclusion, each course makes different demands of the students. Only the calculus section of the course really allows me to compare the Boards in terms of the Programme of Study, and in this one area, they do work to a similar level of difficulty, albeit with a different emphasis placed on the requirements of the Programme of Study.

EB AND IB COMPARISONS

The recommended teaching time for the European Baccalaureate and International Baccalaureate is approximately 240 hours. The IB syllabus is specific on the overall allocated teaching time required whereas the EB specifies weekly teaching time only. Making the assumption that the academic year is 38 weeks of teaching time in Year 12 and about 28 in Year 13, actual timings are very similar. The IB syllabus is specific as to breakdown of time allocated to each aspect of the syllabus, for the core syllabus and the options syllabus. The EB makes no recommendations at all for time allocation to any aspect of the core syllabus.

The aims of the course are similar, the EB aims to link the course to a European context and the IB aims to link to an International context. The EB general aims are set in a wider context, as a general statement, whereas the IB delivers more specific aims for the course, as a series of bullet points. The objectives of the two courses are again similar, but the actual presentation of the aims is more specific for the EB than the IB. The IB lists objectives as a series of bullet points The EB breaks the aims down into categories and the lists the aims as bullet points within the categories:

- Analysis of problems
- Manipulation, argument and reasoning
- Communication
- Generalisation, structuring and synthesising

The format of the syllabus is different for the two qualifications. The EB syllabus is set out as a series of topics to be studied within the categories **algebra, complex numbers, analysis, geometry, probability and numerical analysis of data**. It is a series of basic statements which are qualified later on in the syllabus. The IB however lists the topics in the Core syllabus, to be studied in more detail giving examples of what is required, under fewer headings, choosing to use **number and algebra, geometry and statistics.** The IB makes specific reference to presumed knowledge and indicates this by using the acronym PK within the programme of study and makes reference to the need for teachers to include topics listed as PK in the course at an early stage. The IB then takes into account the fact that qualifications sat prior to the diploma, do vary in terms of content, from one country to another. The EB does not appear to take this into account; there is no reference to presumed knowledge and/or variations in course content prior to study of the EB, within European countries.

An intriguing difference between the two diplomas, when it comes to outlining the Programme of Study, is that the EB refers to the written examination from the start and then lists the content of the Programme of study against the exam. The assessment takes priority in the documentation, whereas the IB lists Assessment procedures, after the Programme of Study. The content of the written exams in the EB syllabus builds on the initial statements of the core syllabus made earlier, with particular reference to topics and includes the first indicator of degree of difficulty.

Core Content

The actual content of the core syllabus is treated differently by each Board. The EB syllabus is a listing of a series of topics, with only the occasional clarification in a column entitled 'Remarks' Year 7 has more comments giving guidance on the teaching of the topic than year 6, where the teacher is left to decide the level of difficulty to teach to. The IB syllabus lists content, amplifications/inclusions- a column highlighting requirements, clarifying what needs to be taught. An additional column lists 'exclusions' making clear what is not required to be taught.

TOPIC	EB CONTENT	IB CONTENT
COMPLEX NUMBERS	• Introduction to complex numbers • Real and imaginary parts of complex numbers • Complex conjugates • Operations on complex numbers • Reciprocal of non-zero complex number • Square roots of a complex number • Solution of quadratics with complex coefficients • Geometric representation of a complex number • Trigonometric form • Modulus of a complex number, of a product and of a quotient • Argument of a non-zero complex number, of a product, of a quotient • Powers, nth roots	• Introduction to complex numbers • Conjugate, modulus and argument • Cartesian form z = a +ib • Modulus – argument form z r(cos θ +i sin θ) • The complex plane- Argand diagrams • Sum, products and quotients of complex numbers • De Moivres theorem • Powers and roots

	• De Moivres theorem	
ANALYSIS Real functions of a real variable Continuity and limits	• Definition of a real function • Domain of a function • Zeros of a function, sign of a function • Even and odd functions • Periodic functions • Composition of two functions • Inverse of a bijection • Increasing and decreasing functions, constant, monotonic, over an interval. Local and global extrema • Graph of a function • Year 7 • Apply the above to absolute value, polynomials, rational functions and those involving square roots • Circular functions • Natural logarithm functions • Exponential function with base e • Functions obtained by addition, multiplication , division or composition • Notion of continuity of a function at a point • Continuity of a function from the right • Continuity of a function over an open interval • Statement without proof of theorems concerning continuity – of the absolute value of a continuous function • Of the product of a continuous function with a real number • Of the sum, product, quotient , composition of two continuous functions • Continuity over ∇of polynomial functions • Continuity of rational functions over their domain • Limits • Notion of a limit of a function at a point • Removable continuity • Right hand limit of a function at a point • Extension of the notion of limit, infinite limit, limit as the variable tends to +∞ and - ∞ • Statement without proof of theorems concerning limits	• Concept of a function, domain, range, image • Composite functions; identity function • Inverse function • Graph of a function • Function graphing skills- use of a GDC to graph • Identification of asymptotes; transformations of graphs; translations; stretches; reflections in the axes • Graph of the absolute value function • Reciprocal function, graph and self-inverse nature • Quadratic function; axis of symmetry • Use of quadratic formula • Use of discriminant Δ = b́ - 4ac • Function n |→ a^n • inverse function |→ log x (base a) • exponential function • logarithmic function • inequalities in one variable, using their graphical representation • solution of g(x) ≥ f(x) where f, g are linear or quadratic • use of absolute values in inequalities • 26 hours recommended teaching time

	• Of the absolute value of a function • Of the product of a function with a real number • Of the sum, product, quotient, composition of two functions • Indeterminant forms • No guidance given for time allocation	
DIFFERENTIATION	• Value of derivative of a function at a given point • Geometrical interpretation • Equation of the tangent at a point on the graph of a function • Derivative of a function • Successive derivatives • Derivative of a product of a differentiable function with a real number • Derivative of the sum, product,, quotient and composition of two differentiable functions • L'hospitals rule • application of the notions of limits and derivatives to the analysis of a function	• informal ideas of limits and convergence • definition of derivative • specific derivatives such as sin x • derivative interpreted as a gradient function and as rate of change • derivative of reciprocal circular functions a to power of x and log x • derivatives of arcsine x, arcos x, arc tan x • differentiation of a sum and a real multiple of above functions • chain rule for composite functions • application of chain rule • product and quotient rules • second derivative • awareness of higher derivatives • local maxim and minima • use in optimization problems • approx 24 hours teaching time
STUDY OF REAL FUNCTIONS OF A REAL VARIABLE	• Increase and decrease of a function • Asymptotes on the graph of a function • Concave/convex nature of the graph of a function, points of inflection; tangents at such points • Applications of these ideas to the study of polynomial, rational, circular functions	
INTEGRATION	• Year 7 • Integral of a function defined on a closed and bounded interval • Graphical interpretations of such integrals as area • Properties of integrals • Mean value of a function on an interval • Indefinite integrals of a function continuous over an interval • Evaluation of integrals by the following methods: • Integration by inspection • Integration by parts	• Indefinite integration as inverse of differentiation • Anti-differentiation with a boundary condition to determine the constant term • Definite integrals • Area between a curve and the x axis or y-axis in a given interval areas between curves • Volumes of revolution • Kinematic problems involving displacement, velocity, acceleration • Graphical behaviour of functions, tangents and normals behaviour for large |x| • Significance of the second derivative, distinction between maximum and

	• Integration by substitution • Applications of these methods to the functions studied previously • Application of the theory of integration to finding plane areas and volumes of revolutions generated by rotation around the x axis • First order differential equations with variables leading to the form y'.f(x)= g(x)	minimum points • Points of inflexion with zero and non-zero gradients • Implicit differentiation; further integration by substitution • Integration by parts • Solution of first order differentials equations by separation of variables
GEOMETRY IN 3-D Vectors in 3-D spaced	• Points, lines, planes, spheres • Vectors in 3-D definition • Sum and product of vectors • Vector equation of line • Linear combination of two vectors • Vector equation of a plane • Scalar product of two vectors • Magnitude of a vector, distance between two points • Orthogonal vectors • Orthogonal, normalised, orthonormal basis • Application of these concepts to problems in analytical geometry • Year 7 • Collinear vectors, vector equation of line • Coplanar vectors, vector equation o f plane • Scalar product of two vectors in 3-D • Vector product of two vectors • Triple scalar product • Application in the calculation of areas of common plane figures: triangle, trapezium and parallelogram • In the calculation of volumes of common solids: prism, parallelepiped, cylinder, pyramid	• • Vectors as displacements • Sum and difference of two vectors • Multiplication by a scalar • Magnitude of a vector • Position vectors • Scalar product • Perpendicular vectors • Parallel vectors • Vector equation of a line r= a +λb • Then angle between two lines • Coincident, parallel, intersecting and skew line s • Points of intersection • Vector product of two vectors • Determinant representation • Geometric interpretation of $\|v \times w\|$ • Vector equation of a plane $r = a + \lambda b + \mu c$ • Intersection of a line with a plane, two planes , three planes • Angle between a line and a plane; two planes • Approx 24 hours teaching time
Analytical geometry of the point, plane and line	• Parametric and Cartesian equations of a plane • Parametric and Cartesian equation of a line • Year 7 • Relative position of two planes of a line and a plane, of two lines • Orthogonal projection of a point onto a plane, distance between a point and a plane • Distance between two parallel planes orthogonal projection	

	of a point on a line • Distance of a point from a line • Distance between two lines • Angle between two vectors in 3-D • Angle between two lines • Angle between two planes • Angle between a line and a plane	
Analytical geometry of a sphere	• Cartesian equation of a sphere • Relative positions of a point and a sphere, of a plane and a sphere, of a line and a sphere • Volume and surface area of the sphere	
PROBABILITY	• Events, simple events • Certainty and impossibility • Negation of an event • Mutually exclusive events • Relation between probability and relative frequency • Permutations and combinations • Probability defined on a finite possibility space • Probability distribution • Conditional probability • P (A∩B) = P(A) x P(B|A) • P (A∩B) = P(A) x P(B) • Bayes theorem • Sample space • Probability function of discrete random variable • Cumulative distribution of discrete random variable • Expected value, variance and standard deviation of discrete random variable • Binomial variates • Bernoulli trials • Expected value, variance and standard deviation of a binomial variate • Poisson Distribution • Expected value, variance and standard deviation of a Poisson variate • Poisson distribution as an approximation to the binomial distribution for n>50 and p<0.1 • Continuous random variables • Probability density function • Cumulative distribution of a continuous random variable • Normal or Gaussian Distribution	• Concepts of population, sample, random sample, and frequency distribution and continuous data • Presentation of data, frequency tables an diagrams, box and whisker plots • Grouped data, mid-interval values, interval width, upper and lower interval boundaries • Frequency histograms • Trial, outcome, equally likely outcomes • Probability of an event • Complementary events • P(A U B)= P(A) +P(B) – p(A∩B) • Conditional probability • Use of Bayes theorem • Use of Venn diagrams, tree diagrams and tables of outcomes to solve problems • Concept of discrete and continuous random variables • Probability density functions • Expected value, mean, median and mode, variance and standard deviation • Binomial distribution , mean and variance • Poisson distribution, mean and variance • Normal distribution • Properties of normal distribution • Standardization of normal variables • Approx 40 hours teaching time

	• Expected value, variance and standard deviation of a Normal distribution • Normal curve and cumulative Normal curve • Standardised Normal distribution , use of tables • Normal approximation to the binomial distribution given npq>9	
ALGEBRA		• Arithmetic sequences and series, sum of finite arithmetic series • Geometric sequences and series, sum of finite and infinite geometric series • Sigma notation • Exponents and logarithms • Laws of exponents, laws of logarithms • Change of base • Binomial expansion, expansion of $(a+b)^n$, • Approx 20 hours teaching time
CIRCULAR FUNCTIONS AND TRIGONO-METRY		• Circles; radians, length of an arc, area of a sector • Definition of cos θ and sin θ, definition of tan θ • Definition of secθ, cscθ, cotθ • Pythagorean identities • Compound angle identities • Double angle identities • Circular functions sin x, cos x and tan x, domain and ranges, periodic nature, their graphs • Composite functions of the form f(x)= a sin((b(x +c)) + d • Inverse functions x|→ arcsin x and arccos x and arctan x, their domains and ranges, their graphs • Solution of trigonometric equations in a finite interval • Use of trigonometric identities and factorisation equations • Solution of triangles • Cosine rule • Sine rule area of triangle as ½ab sin C • Approx 22 hours teaching time
MATRICES		• Definition of a matrix, terms element, row, column and order • Algebra of matrices, equality , addition, subtraction, multiplication by a scalar, multiplication of matrices • Identity and zero matrices • Determinant of square matrix • Inverse of matrix • Solution of system, of linear equations max 3 equation

		• Condition for existence of a unique solution, no solution and an infinity of solutions • Approx 12 hours teaching time

The table above lists the core content for each Programme of Study (PoS). It does not include the option syllabus for IB which requires another 40 hours of teaching time. If the Statistics option is selected, there is further overlap between the two programmes of study, but overall, the Stats option includes additional topics not listed above.

COMPARISONS OF THE TWO PROGRAMMES OF STUDY

Working through the topics as listed against the EB PoS

- Complex numbers - both take the topic to a similar level of difficulty, interestingly the EB makes mention of trigonometric form, but nowhere else in the diploma, is trigonometry mentioned as a topic for study. The IB allows approximately 22 hours of study allocated to the teaching of trigonometry including trigonometry within the complex number topic.
- Functions- the EB gives a greater focus to the teaching of Functions. This may reflect the greater emphasis on the teaching of functions up to the age of 16 in some European Countries. The EB places greeter emphasis on the algebraic form of functions whereas the IB focuses on the graphical solutions of functions, with a big emphasis on the use of technology. Questions are frequently set which require the use of Graphical Display Calculators (GDC). It is extremely difficult to follow the SL Diploma at IB, without owning and understanding how to use a GDC. The EB does not mention use of GDC.
- Differentiation and Integration are treated similarly as topics, with a similar level of difficulty. The IB places a greater emphasis on the use of Calculus to solve practical problems, the EB tends to stay with a more abstract emphasis to the PoS
- Vectors- the EB places a greater emphasis on the teaching of Vectors, the level of difficulty required is greater than the IB
- The geometry of a sphere is studied as a separate subject in the EB PoS, it is not mentioned in the IB PoS
- Probability and Statistics-, the EB places a greater focus on these topics when compared to the IB, unless the optional unit studied at IB, is in fact the Statistics option. Within the topic, the IB places a greeter emphasis on probability, the EB looks at more statistical techniques and to a greater degree of difficulty, unless again the option studied at IB is Statistics, in which case, the IB PoS takes students to a more advanced level of statistics.
- Algebra- the EB makes no mention of algebraic topics involving sequences and series. It makes no mention of logarithms and use of different bases and the binomial expansion. The IB allows 20 hours of teaching time for these topics.
- Circular functions and trigonometry-the EB makes only one reference to trigonometry as part of the programme for the teaching of complex numbers. The IB allows for 22 hours of teaching time on trigonometry and the circular functions
- Matrices- this topic is only covered by the IB, there is no mention of the topic on the EB syllabus. Only 12 hours is allocated to the teaching of this topic.

To summarise, in general, where there are common elements to the PoS, the topics are studied to a similar degree of difficulty. The EB would appear to be a more 'skills' focused syllabus; it requires knowledge of fewer areas of maths. The year 7 syllabus is the main focus of the final exam with only some of the year 6 work assessed. The IB PoS would appear to assess a greater knowledge of different aspects of Maths and not only does it test skills, it also tests for understanding with proof being mentioned as an explicit part of the core syllabus. The balance on the IB PoS is better across the main strands, Number, Algebra, Geometry and Probability/Statistics. The EB does not focus on the teaching of advanced number topics as such, with the emphasis on the teaching of abstract concepts, whereas the IB includes the teaching of advanced number work in a real context. The coverage of Geometry is also limited to vectors

and the geometry of a sphere, whereas the IB includes a substantial module on geometry which includes trigonometry.

It would be a reasonable assumption, based on timings and the PoS plus the option unit, that the IB is a more intense course to teach in the time available to teachers, requiring a focused approach to teaching and learning. The EB PoS without a formal recommendation as to teaching time to be allocated would appear to give the teachers more flexibility to plan their own timetable, to teach the course. It may allow the teachers to move at a slower pace then the IB syllabus.

ASSESSMENT

EB - Written Exams

For the European Baccalaureate, students will take a written examination (4 hours) consisting of four short compulsory questions(50 marks in total) two questions on analysis, one on geometry and one on probability. Then tow optional long questions, from a choice of three questions- one on analysis, one on geometry and one on probability. Questions will be based mainly on the year 7 syllabus, but may require knowledge of material studied in year 6. Marking takes into account method and interestingly presentation. A formula booklet is provided to support in the exams. Exams will take 3 or 4 hours

Total marks available 36 out of 100

Class work

A marks

Class marks are also given in the 7^{th} year (no mention of 6^{th} year) it will be given as an average of two marks given as Teacher Assessment. This is a summative assessment and could be based on oral participation, written class work and or practical work. The assessment is done on work in class.

Total marks available 15 out of 40 marks

B marks

Class examinations, at the end of the first semester, if studying advanced maths, there will be a class examination at the end of each semester and an arithmetical average of all scores will give the B mark
Total marks available 25 out of 40 marks

Total marks available (A +B) 40 marks out of 100

Some of the paperwork suggests that and Oral exam is included, but the syllabus suggests for the European Baccalaureate that only written exams are used to assess.

This is included for information only

Oral Examination

Advanced maths requires an oral examination. These last 20 minutes and students are required to draw by lot an envelope containing a number. They will then get a question corresponding to that number. Students may reject the first question picked, but will automatically lose 20 % of the marks awarded for the second question chosen. Some preparation time is given and note may be taken. The student then has to set out his/her ideas on how to solve the problem. If the student is incapable of taking the initiative the examiner make ask questions to start/form a dialogue. Two examiners are used, one is the class teacher and the average score from the two examiners determines the final mark. Examiners mark out of 10 as a raw score.

Total marks available 24 marks out of 100

Marking is done by two examiners. The class teacher marks first then an external examiner marks the paper. If there is a difference of more than 3 marks, a third examiner is called in to mark.

Criteria for success

A final mark of 60% or more will indicate a pass

Students scoring at least 57% and less than 60 % will have their results reviewed and if they have achieved 6/10 in three of the five written exams may be awarded a pass.
Students scoring 59 to 59.99% must have obtained a satisfactory result in two of the five exams to be awarded a pass.
IB

External assessment

5 hours

Written papers

Students are assessed on the two year course, as opposed to the EB which focuses predominantly on the year 7 course, although this does build on the year 6 course in most areas.

Paper 1

No calculator allowed. 2 hours allocated to the exam and 30 % of the marks awarded. An information booklet is provided

Section A - compulsory short-response questions based on compulsory core syllabus
Section B - compulsory extended–response questions based on core syllabus

Paper 2

Calculator required. 2 hours allocated to the exam and 30% of marks awarded
Section A – compulsory short-response questions based on core syllabus
Section B – compulsory extended –response questions based on the compulsory core syllabus

Paper 3

Calculator required, 1 hour allocated and 20 % of the marks awarded.

Extended –response questions based mainly on the syllabus option

Internal Assessment

This accounts for the final 20% and is a collection of two pieces of work assigned by the teacher and completed by the students during the course. They do not have to be completed during the class work. These may be completed in year 12 and /or year 13. They must be based on different areas of the syllabus and represent two types of task

- Mathematical investigation
- Mathematical modelling

Marking Procedures

Written papers are externally marked. Marks may be awarded for method, accuracy answers and reasoning, including interpretation. Presentation is not mentioned, unlike the EB.

The internal assessments are marked by the class teacher and then externally moderated by the IBO. The criteria are related to the mathematics objectives. The written work assessed must be original work, done independently. It is an ongoing process and discussion is allowed with the teacher to develop the piece of work. 10 hours of class time is allocated to the tasks being worked on as well as time spent independently

out of the class room. If the class teacher marks are altered by the external moderator, there is no feedback to schools as to the reasons why. If there is a difference in opinion on the marks allocated against the criteria, from a sample selection of scripts (usually one top, one middle, one bottom in terms of marks awarded by the teacher) the marks for the class will be scaled up or down by the moderator.

To summarise, the written exams take similar formats with short-response questions and extended-response questions in both exams. Choice is given in the EB exam, no choice in the IB exams. The IB has an additional formal exam on the optional section studied, the EB has summative assessment in year 7 based on class work. The EB can include an oral exam, which accounts for 24 of the final mark; the IB has extended pieces of work which account for 20 % of the final mark given. The class teacher has input in all aspects of assessment, for the EB. The teacher teaching the IB diploma, only has input with the extended pieces of work which are internally assessed. The EB teacher therefore, has a greater understanding of the assessment procedures and the criteria used to award marks, whereas the IB teacher does not see the marking of the written exams.

On this basis it is reasonable to suggest that the IB course is more rigorous, including two projects, which require extensive time working independently. The syllabus is longer/ more extensive for IB and with the additional independent projects, a challenge to work into the prescribed time allocation.

EB AND GCE COMPARISON

The EB diploma is a two year course, with formal assessment at the end of the two year course and class assessment at the end of each semester. The OCR GCE is divided into two sections, AS and A2. AS to be studied in the first year of the Programme of Study and the A2 to be studied in the second year. The GCE allows for a qualification to be gained at the end of the first year, unlike the EB which awards a qualification at the end of the second year only.

The EB has no optional elements, whereas the GCE allows for choice at AS and A2. Students have to study three modules at AS level, C1 and C2, the Core PoS, and then have the opportunity to study one of four options- Mechanics 1, Probability and Statistics 1, Decision Maths 1 or Further Pure Maths 1. Students have flexibility as to when they sit the exams for each module, external exams are timetabled for January and June, unlike the EB which is end of course exam only. Students may re-sit module exams to improve grades and there is no limit as to how many times students may re-sit. The best mark will be carried forward to the final grade.

To achieve the A level overall grade following the A2 course, students must sit 6 modules in total - 3 in year 12 and 3 in year 13, although they may continue to re-sit the modules studied in year 12 , in year 13 to improve grades. The OCR GCE course is different when compared to the EB and the IB in that the course, also addresses Key skills, skills recognised as useful in the World of Work. They are communication, application of number, information technology, working with others, improving own learning and performance and problem solving skills.

The GCE is an exam only course, there is an expectation that graphical or scientific calculators may be used in modules, with the exception of Core 1 where the use of calculators is prohibited, unlike the EB which makes no reference to calculators and also unlike the IB which strongly advocates the use of graphical calculators to problem solve. A formula booklet is made available to students, but there is an expectation that some formulae will need to be learned, prior to examination. There is no indication that the EB limits the formulae listed in the information booklet

COMPARISON OF THE PROGRAMMES OF STUDY

The course content for the GCE is set out against the EB PoS. C1, C2, C3 and C4 are compulsory elements. The topics covered have been included in table form against the EB PoS and the module is indicated. Optional elements M1, M2, S1, S2 , and D1 etc are indicated in blue.

TOPIC	EB CONTENT	GCE CONTENT
COMPLEX NUMBERS	• Introduction to complex numbers • Real and imaginary parts	FP3 option work • Introduction to complex numbers • Real and imaginary parts of complex

	of complex numbers • Complex conjugates • Operations on complex numbers • Reciprocal of non-zero complex number • Square roots of a complex number • Solution of quadratics with complex coefficients • Geometric representation of a complex number • Trigonometric form • Modulus of a complex number, of a product and of a quotient • Argument of a non-zero complex number, of a product, of a quotient • Powers, nth roots • De Moivres theorem	numbers • Complex conjugates • Operations on complex numbers • Argand diagram • Two square roots of complex numbers • Illustrate simple equations and inequalities involving complex numbers by means of loci in an Argand diagram FP2 • Multiplication and division of two complex number expressed in polar form • Understand De Moivres theorem • Find and use nth roots of unity • Use expression for sine θ and Cos θ in expressing powers of sine θ and Cos θ in terms of multiple angles and summing series
ANALYSIS Real functions of a real variable Continuity and limits	• Definition of a real function • Domain of a function • Zeros of a function, sign of a function • Even and odd functions • Periodic functions • Composition of two functions • Inverse of a bijection • Increasing and decreasing functions, constant, monotonic, over an interval. Local and global extrema • Graph of a function Year 7 • Apply the above to absolute value, polynomials, rational functions and those involving square roots • Circular functions • Natural logarithm functions • Exponential function with base e • Functions obtained by addition, multiplication , division or composition • Notion of continuity of a function at a point • Continuity of a function from the right • Continuity of a function over an open interval • Statement without proof of theorems concerning continuity – of the absolute value of a continuous function	C1 • Understand and use the relationship between the graphs of y = f(x), y=a f(x), y=f(x) +a y = f(x + a), y = f(ax) express in terms of translations, reflections and stretches C3 • Understand terms function, domain, 1 to 1 function, inverse function an composition of functions • Identify the range of a functions • Illustrate in graphical terms the relation between 1 to 1 functions and its inverse • Understand the meaning of |x| • Understand the relationship between the graphs of y=f(x) and y=|f(x)| • Use and recognise the compositions of transformations of graphs • Understand the properties of exponential and logarithmic functions and their graphs • Understand exponential growth and decay

	• Of the product of a continuous function with a real number • Of the sum, product, quotient , composition of two continuous functions • Continuity over ∇of polynomial functions • Continuity of rational functions over their domain Limits • Notion of a limit of a function at a point • Removable continuity • Right hand limit of a function at a point • Extension of the notion of limit, infinite limit, limit as the variable tends to +∞ and - ∞ • Statement without proof of theorems concerning limits • Of the absolute value of a function • Of the product of a function with a real number • Of the sum, product, quotient, composition of two functions • Indeterminant forms No guidance given for time allocation	
DIFFERENTIATION	• Value of derivative of a function at a given point • Geometrical interpretation • Equation of the tangent at a point on the graph of a function • Derivative of a function • Successive derivatives • Derivative of a product of a differentiable function with a real number • Derivative of the sum, product,, quotient and composition of two differentiable functions • L'hospitals rule • application of the notions of limits and derivatives to the analysis of a function	C1 • understand gradient of curve as the limit of the gradients of a sequence • understand the idea of a derived function and second order function, use appropriate notation • use derivative for x^n • apply differentiation to gradients, tangent and normals, rates of change, increasing and decreasing functions and location of stationary points C3 • use derivatives of e^n and ln x • differentiate composite functions using the chain rule • differentiate products and quotients • apply differentiation to connected rates of change C4 • use derivatives of sin x, cos x, tan x • find and use the first derivative of a function defined parametrically or implicitly • extend the idea of reverse differentiation • formulate a simple statement involving

		rate of change as a differential equation • use and initial condition to find a particular solution of a differential equation • interprets the solution of a differential equation in the context of a problem modelled by the equation
STUDY OF REAL FUNCTIONS OF A REAL VARIABLE	• Increase and decrease of a function • Asymptotes on the graph of a function • Concave/convex nature of the graph of a function, points of inflection; tangents at such points • Applications of these ideas to the study of polynomial, rational, circular functions	C2 • Understand indefinite integration as the reverse process of differentiation • Solve problems involving the evaluation of a constant of integration • Evaluate definite integrals • Use integration to find the area of a region bounded by a curve • Use the trapezium rule to estimate the area under a curve C3 • Integrate e^n and 1/x with constant multiples, sums and differences • Integrate expressions involving a linear substitution • Use definite integration to find the volume of revolution
INTEGRATION	Year 7 • Integral of a function defined on a closed and bounded interval • Graphical interpretations of such integrals as area • Properties of integrals • Mean value of a function on an interval • Indefinite integrals of a function continuous over an interval • Evaluation of integrals by the following methods: • Integration by inspection • Integration by parts • Integration by substitution • Applications of these methods to the functions studied previously • Application of the theory of integration to finding plane areas and volumes of revolutions generated by rotation around the x axis • First order differential equations with variables leading to the form y'.f(x)= g(x)	C4 • Integrate rational functions by means of decomposition into partial fractions • Recognise an integrand of the form $\frac{k f'(x)}{f(x)}$ • Recognise when an integrand can be usefully regarded as a product • Use a given substitution to simplify and evaluate either a definite or indefinite integral • Find by integration a general form, of a solution for a differential equation where the variables are separable
GEOMETRY IN 3-D Vectors in	• Points, lines, planes, spheres • Vectors in 3-D definition • Sum and product of vectors • Vector equation of line	C4 • Use standard notation for vectors • Carry out addition and subtraction of

3-D space	• Linear combination of two vectors • Vector equation of a plane • Scalar product of two vectors • Magnitude of a vector, distance between two points • Orthogonal vectors • Orthogonal, normalised, orthonormal basis • Application of these concepts to problems in analytical geometry Year 7 • Collinear vectors, vector equation of line • Coplanar vectors, vector equation o f plane • Scalar product of two vectors in 3-D • Vector product of two vectors • Triple scalar product • Application in the calculation of areas of common plane figures: triangle, trapezium and parallelogram • In the calculation of volumes of common solids: prism, parallelepiped, cylinder, pyramid • Parametric and Cartesian equations of a plane • Parametric and Cartesian equation of a line	vectors • Use unit vectors, position vectors and displacement vectors • Calculate the magnitude of a vector • Calculate the scalar product of two vector • Understand the significance of symbols used when the equation of a straight line expressed in the form r = a +tb • Determine whether two lines are parallel, intersect or skew • Find the angle between two lines ands the point of intersection if it exists
Analytical geometry of the point, plane and line	Year 7 • Relative position of two planes of a line and a plane, of two lines • Orthogonal projection of a point onto a plane, distance between a point and a plane • Distance between two parallel planes orthogonal projection of a point on a line • Distance of a point from a line Distance between two lines Angle between two vectors in 3-D Angle between two lines Angle between two planes Angle between a line and a plane	
Analytical geometry of a sphere	• Cartesian equation of a sphere • Relative positions of a point and a sphere, of a plane and a sphere, of a line and a sphere • Volume and surface area of the sphere	

PROBABILITY	• Events, simple events • Certainty and impossibility • Negation of an event • Mutually exclusive events • Relation between probability and relative frequency • Permutations and combinations • Probability defined on a finite possibility space • Probability distribution • Conditional probability • P (A∩B) = P(A) x P(B|A) • P (A∩B) = P(A) x P(B) • Bayes theorem • Sample space • Probability function of discrete random variable • Cumulative distribution of discrete random variable • Expected value, variance and standard deviation of discrete random variable • Binomial variates • Bernoulli trials • Expected value, variance and standard deviation of a binomial variate • Poisson Distribution • Expected value, variance and standard deviation of a Poisson variate • Poisson distribution as an approximation to the binomial distribution for n>50 and p<0.1 • Continuous random variables • Probability density function • Cumulative distribution of a continuous random variable • Normal or Gaussian Distribution • Expected value, variance and standard deviation of a Normal distribution • Normal curve and cumulative Normal curve • Standardised Normal distribution , use of tables • Normal approximation to the binomial distribution given npq>9	
ALGEBRA		C1 • Understand and use the laws of indices • Recognise the equivalence of surd and index notation • Use simple properties of surds including rationalising the denominator • Carry out four operations on polynomials

		• Complete the square for a quadratic polynomial • Find the discriminate of a quadratic polynomial • Solve quadratic equations and linear and quadratic inequalities • Solve by substitution a pair of simultaneous equations – one linear, one quadratic • Recognise and solve equations in which x which are quadratic in some function of x • Find the length, gradient and mid point of a line segment • Find the equation of a straight line • Understand and use the relationships between the gradients of parallel and perpendicular lines • Interpret and use linear equations • Understand the equation $(x - a)^2 + (y-b)^2 = r^2$ represents a circle • Use algebraic methods to solve problems involving lines and circles • Understand the relationship between a graph and its associated equation, use points of intersection to solve equations • Sketch curves of form $y = kx^n$, $y = k\sqrt{x}$ quadratics and y=f(x) where f(x) is the product of at most 3 linear factors C2 • Use the factor theorem and the remainder theorem • Carry out simple algebraic division • Sketch graph of $y=a^n$ • Understand the relationship between logs and indices • Use logs to solve equations of the form $a^n = b$ C4 • Simplify rational expressions, including factorising and cancelling • Divide a polynomial of degree not exceeding 4 • Recall an appropriate for expressing rational functions n partial fractions • Use the expansion of $(1 +x)^n$ where n is rational and $\|x\| <1$ • Use a pair of parametric equations to define a curve and use a given parametric representation of a curve in simple cases • Convert the equation of a curve between parametric and Cartesian forms
TRIGONO-METRY		C2 • Use sine and cosine rules in the solution of triangles

		• Use the area formula Δ=½ab Sin C • Understand the definition of a radian and use the relationship between radians and degrees • Use the formula s = rθ and A =½r θ • For the arc length and sector area of a circle • Relate the periodicity and symmetries of the sine, cosine and tangent functions to the form of their graph use identities tan x = sin x/cos x and cosx +sinx =1 • Use the exact values of the sine, cosine and tangent of 30° 45°,60° • Find all three solutions of sin(kx)= c, cos(kx) = c, tan (kx) C3 • Use the inverse trigonometric functions • Understand the relationship of the secant, cosecant and cotangent function to cosine, sine and tangent • Use trigonometric identities for the simplification and exact evaluation of expressions in the course of solving equations within a specified interval
SEQUENCES AND SERIES		C2 • Understand the idea of a sequence of terms • Understand and use the Σ notation • Recognise arithmetic and geometric progressions • Use the formula for the nth term and for the sum of the first n terms to solve problems involving arithmetic or geometric progressions • Use the condition |r| <1 for convergence of a geometric series • Use the expansion of (a +b) ^{n}
NUMERICAL METHODS		C3 • Locate approximate root of an equation • Understand and use the notation for a sequence of approximations which converge to a root of an equation • Use and understand simple iterative formula to solve equations • Carry out numerical integration of functions by means of Simpson's' rule

COMPARISONS ON THE TWO PROGRAMMES OF STUDY

The EB and the GCE both choose not to give suggested time allocations for teaching the course content, unlike the IB which indicates approximate hours to be spent on each section.

The above table includes the elements of the Core curriculum for GCE against the compulsory curriculum for the EB apart from an example showing the Further Pure maths option. There are two options for the A level and students may choose from four at AS and several combinations at A2 dependent on the option

chosen at AS. Two Mechanics options and two Discrete Maths options are only covered by GCE, no elements of these option modules feature in the EB. There is some overlap to a similar level of difficulty in the Probability and Statistics options and the Further Pure options.

The syllabus would appear to reflect the different priorities in the Maths education to age 16. The EB shows a greater emphasis on Functions, Probability and Analytical Geometry. The GCE places a greater priority on Algebra across the Core curriculum. Trigonometry has a high priority at GCE and the GCE focuses on Number through the teaching of Sequences and Series and iterative processes, unlike the EB, which does not assess the learning in these areas.

Where there is an overlap in the syllabus content, either one Board or the other will take the subject to a greater level of difficulty. The EB has a greater focus on Functions. The level of difficulty is higher than that of the GCE, which over two years only just matches the year 6 course content of the EB. The GCE has a greater degree of difficulty when comparing the Differentiation element of the course.

There is no obvious evidence on links between topics in the exam papers. With both papers using short-response questions, this will be difficult to achieve. The EB diploma has one question from each of the strands - algebra, complex numbers, analysis, geometry, probability and numerical analysis of data. Then optional questions again form each strand. The GCE does not place order on the questions and does not appear to write exams with only one question on each aspect of the syllabus for that particular module.

ASSESSMENT

OCR GCE

Each module is assessed by a 1 hour 30 minute exam; each module is equally weighted at 33⅓%. Three modules, C1, C2 and an option make up the AS level and C3, C4 and an option make up the A2 section. The exams are marked by external examiners and a sample of the scripts is marked by a second examiner to ensure consistency and accuracy.

The exams are a series of short-response questions, there are no optional questions. Each paper is given a raw score out of 72. It is up to the teacher and student as to whether they sit the module exam in January or June, giving additional flexibility along with the choice of option to study. The course can be tailored to the individual needs of the student

EB

Written Exams
For the European Baccalaureate, students will take a written examination (4 hours) consisting of four short compulsory questions(50 marks in total) two questions on analysis, one on geometry and one on probability. Then two optional long questions, from a choice of three questions- one on analysis, one on geometry and one on probability. Questions will be based mainly on the year 7 syllabus, but may require knowledge of material studied in year 6. Marking takes into account method and interestingly presentation. A formula booklet is provided to support in the exams. Exams will take 3 or 4 hours.

Total marks available 36 out of 100

Class work

A marks
Class marks are also given in the 7th year (no mention of 6th year) it will be given as an average of two marks
given as Teacher Assessment. This is a summative assessment and could be based on oral participation, written class work and or practical work. The assessment is done on work in class.
Total marks available 15 out of 40 marks

B marks

Class examinations, at the end of the first semester, if studying advanced maths, there will be a class examination at the end of each semester and an arithmetical average of all scores will give the B mark Total marks available 25 out of 40 marks

As before, the Oral exam is optional at the higher level EB

Oral Examination

Advanced maths requires an oral examination. These last 20 minutes and students are required to draw by lot an envelope containing a number. They will then get a question corresponding to that number. Students may reject the first question picked, but will automatically lose 20 % of the marks awarded for the second question chosen. Some preparation time is given and note may be taken. The student then has to set out his/her ideas on how to solve the problem. If the student is incapable of taking the initiative the examiner make ask questions to start/form a dialogue. Two examiners are used, one is the class teacher and the average score from the two examiners determines the final mark. Examiners mark out of 10 as a raw score.

Total marks available 24 marks out of 100

Marking is done by two examiners. The class teacher marks first then an external examiner marks the paper. If there is a difference of more than 3 marks, a third examiner is called in to mark.

Criteria for success

A final mark of 60% or more will indicate a pass

Students scoring at least 57% and less than 60 % will have their results reviewed and if they have achieved 6/10 in three of the five written exams may be awarded a pass.
Students scoring 59 to 59.99% must have obtained a satisfactory result in two of the five exams to be awarded a pass.

There are obvious contrasts between the two qualifications. OCR GCE is an exam only qualification, whereas the EB has the class work element. The EB is examined at the end of the two-year course and predominantly on the year 7 syllabus. The GCE is split into two sections, with a formal qualification available at the end of the first year of advanced study made up of three modules. The EB is a pass/fail qualification. The OCR GCE allows re-sits of each module to improve scores. The EB diploma requires students to be secure in all aspects of the syllabus and has penalties built in, should students pick a question for the oral exam which may not play to their strengths. The choice of a second question invokes a penalty of 20%. The OCR GCE allows students to study more than one option and then choose the one that achieves the highest score, to be aggregated into the final grade for the A level.

Comparison of Marking Procedures

It is not possible to compare the three qualifications in terms of expectations, marking procedures. There are no IB scripts to use to assess. Looking at The EB and GCE scripts, there is little common material available to compare objectively, between the two. There are differences in the make up of the papers, the GCE paper is a series of short questions, the EB has short questions from each of the main headings, then the optional long questions. The GCE has no optional questions and no long questions.

In terms of the examiners role, the EB diploma has teacher involvement, GCE does not. The EB has a very rigorous checking system to ensure accuracy in marking of every script; the GCE has moderators checking samples of work to ensure consistency. The IB uses external examiners and no individual feedback is available for students, only an examiners report that highlights strengths and weaknesses of all candidates sitting the HL exams.

1.9.2 Doc 1.2

EXAMINATION PAPER ANALYSIS GRID

EXAMINATION: Abitur

PAPER: Leistungskurfach

PAPER LENGTH: 240 minutes

Question	Item/ exercise	Total marks per item/ exercise	Length	Breakdown of marks within item / exercise	Topic area	Test type
1	Algebraic analysis	40		Calculation, justification/ proof	Functions, integration limits	3 sections, variable length questions in each section with most marks against

						the more open ended questions
2	Algebraic analysis Plus mechanics	40		Calculation, justification/ proof	As above plus volumes of revolution	3 sections, variable length questions in each section with most marks against the more open ended questions
3	Probability and statistics	40		Calculation, justification/ proof	Conditional probability Permutations and combinations Normal distribution Bernoulli trials Standard deviation	2 sections with common theme Some short answer questions , some requiring proof/justification
4	Probability and statistics	40		Calculation, justification/ proof	Not translated but similar to question 3	
5	geometry	40		Calculation, justification/ proof	Simultaneous equations in three dimensions Three dimensional geometry Volume of sphere and cone	2 sections with majority short answer questions , some sections requiring proof/justification
6		40		Calculation, justification/ proof	Not translated but similar to question3	

EXAMINATION PAPER ANALYSIS GRID

EXAMINATION: EB

PAPER: 5 periods higher tier

PAPER LENGTH: 240 minutes

Question	Item/ exercise	Total marks per	Length	Breakdown of marks within item / exercise	Topic area	Test type

		item/ exercise				
1	Compulsory question	12		Calculation, graph sketching, proof	Analysis Functions	Short answer questions split into several sections
2	Compulsory question	12		Algebraic manipulation calculation	Differential equations	Short answer questions split into several sections
3	Compulsory question	12		Calculation, algebraic manipulation	Simultaneous equations Skew and perpendicular lines	Short answer questions split into sections
4	Compulsory question	12		calculation	Conditional probability Permutations and combinations	Short answer questions split into sections
5	Optional question	25		Calculations and justification	Functions, tangents and trigonometry Volumes of solids of revolution	Short answer questions in sections
6	Optional question	25		Calculation	Probability Normal distribution Poisson distribution Standard deviation	Short answer questions in several sections
7	Optional question	25		Calculation Justification/proof	Three d geometry Tangent planes to spheres Perpendicular planes Parametric equations	Short answer questions to several sections

The EB paper favours reproduction of scientific knowledge, there is limited evidence of proofs required to show understanding. The Abitur however, relies on more open ended questions with a substantial part of the paper given over to justification of answers. Students are led through the requirements of the EB with graduated steps whereas the Abitur generally within each question makes the second part a more open ended question with a large mark allocation. Not knowing the source of the papers makes it difficult to analyse since answers are actually recorded to the questions, in brackets. This could be a draft paper with additional information for the examiners, but it could also give the answers to allow students access to the

second part of the question even if they may not be able to answer the first part in its entirety. This is this is the case, is forward thinking in that students are not denied access to a lot of marks, if they cannot or have forgotten how to do a particular element.

Without a syllabus it is difficult to answer the question posed as to whether the paper fails to cover essential knowledge skills etc. The topics omitted from the testing are not known. I therefore cannot comment on any key omissions. My impression is that the two courses are relatively similar. There is some evidence of mechanics on the Abitur paper and there is none on the EB paper. I do consider this an omission but only if students go on to further study and wish to do a mechanics option at University.

The EB does lead students through the questions with explicit instructions as to what is required, whereas the Abitur does seem to rely on students being more intuitive and therefore needing to be able to interpret and apply knowledge. It is interesting to note that the school chooses the question to be answered, so I do wonder if they do teach to the topic, rather than provide the rounded education that the EB insists on. EB students are expected to be well versed in all aspects of the curriculum to be successful at the EB diploma.

The EB allows students limited choice in which questions are answered. The Abitur does not. Does the Abitur play to students strengths?

There are only a couple of sections that can be compared directly and the Abitur appears to have a greater degree of difficulty. When set side by side, the EB questions match two thirds of the Abitur. The Abitur requires more complex algebra. For that final third, when proof is necessary to answer the question. There is a significant overlap in terms of content. I do find it intriguing that mechanics as a complete module of study does not feature as an option on either qualification, which leads me to wonder what criteria the Universities set in Germany and in Europe when liaising with Exam boards as to the essential skills they require, when students embark on University course, for engineering or pure Moths.

I think that both papers are demanding in comparison to the GCE but this is only an opinion based on one set of papers. I am confident that the EWB will be completed in the allotted time, but the Abitur, it is more demanding because of the less prescriptive questioning and would require all the allocated time.

The nature of our subject and the unknown elements make it difficult for me to make definitive statements. I hope I have given you sufficient information to move your project forwards.

Sue Croft

1.9.2 Doc 1.3

Comparability Study Mathematics

EB-French Baccalauréat
Mathematics

Mr Dominique Raulin – 6 Octobre 2008

Mathematics is studied in the three ‘formations’ of academic baccalaureate. This comparison is focused on comparing the EB in Maths (five period) to French Bac in scientific formation (série S)

1. Curricula

1.1. Mathematics at EB

The mathematics syllabus is composed of five periods per week, in years 6 and 7.

Two kinds of skills are summarised: general and specific.

General skills:

1 manipulation, argumentation, reasoning
2 communications
3 structuring, synthesizing

Specific skills:

1 algebra: complex numbers
2 analysis
3 geometry
4 probability, numerical analysis of data.

The syllabus is presented in three columns: topic, content, remarks. In the first column (topic), titles appear such as continuity and limits, or integration. These are very broad in scope.

The second column (content) is similar to summary in a handbook: for example, trigonometric form, introduction to complex numbers, notion of continuity of a function at a point, etc.

The third column (remarks) has little information: for example, nothing in page 13, and only the order in which the two notions of continuity and limit will be studied is left to the teacher…, in page 12

1.2. Mathematics at French baccalauréat

In France, students have 5 hours per week in sixth year and 5 ½ hours in seventh year; in seventh, it is possible to add two hours per week to study others parts of mathematics.

The text form in the French Bac contrasts sharply with the text form in the EB. As extended discursive text, it requires a real effort of concentration and interpretation on teachers' part. Official reports point out that too many teachers don't read first parts of official texts (Introduction).

There are three main parts to the text:

1 analysis (about 45 % ; 14 weeks or 70 hours)
2 geometry (about 35 % ; 11 weeks ; 55 hours)
3 probability and statistics (about 20% ; 6 weeks ; 30 hours)[1].

Content is presented in three columns:

1 topic and content
2 how to use
3 remarks

The indications in first column (topic and content) are very contracted descriptions: continuity at a point, in a segment; real functions $x \rightarrow a^x$, given $a > 0$

The second column (how to make use) explain how different notions must be presented and studied

The third column complements the second one with general remarks: for example, '…the form to present logarithms is not fixed.'

1.3. Comparison:

General points:

The statement of curriculum is lighter in EB than in the French Bac and seems to give more autonomy to the teachers in the choice of methods and supports.

[1] We find these precisions at the beginning of the description of content.

The level in each part is not as elevated as similar elements in the French Bac. But, on the other hand, some parts are more developed in France (for example, Complex numbers).

The objectives seem to be clearer in EB, principally because their presentation is simpler and more precise.

The first column in the French specification is similar in form to the second element in the EB curriculum. On the other hand, there is nothing like the third column (remarks) of the French text in the EB syllabus.

The presentation of EB syllabus is reminiscent of the presentation of the French curriculum in the 1970s.

On content:
Broadly, the same parts of mathematics are studied in both formations.

It is difficult to determine, from reading the specification alone, exactly what level of outcome is expected of students. In the explanation within the EB syllabus, there is a part about assessment: 1) general principles; 2) written examinations; 3) the baccalaureate; 4) content of the written examination 5) permitted material; 6) criteria for correction and marks awarded. In France, these details are given in a precise form in a specific text.

In conclusion, on the basis of similar texts, EB carries the possibility of more personal interpretations of requirement and content than the French text. It is interesting that law about the future of education (2005) in France asserts this new notion of increased autonomy.

2. The assessment itself

2.1. French bac:

The conditions of bac S are presented in an additional text to the syllabus. Precise details about the level of outcome required are given in this second text.

For example, in 'Objectives of test':

To acquire knowledge and to organize them
To mobilize notions, results and methods to solve a mathematical problem
To take initiative
To understand and to build an argument
To get a comprehensible form to a solution or a demonstration.

The separation of these into a separate document may be a disadvantage in terms of teacher awareness.

Content of the written examination (4 h): the question paper comprises between 3 and 5 exercises, marked between 3 and 10, in relation to a global notation of 20.

2008 session

Four exercises: marked 5 points.
Exercise 1: analysis – integration
In the first part, candidates must answer four questions. They have no possibility to chose their methods and to take initiative.
Exercise 2: geometry of three dimensional space
Four independent questions
This exercise allow the marker to check basic knowledge held by the candidates.
Exercise 3: Probability
Question 1: 2 sub questions
Question 2: 3 sub questions
The first part focuses on the same objective as exercise 2
Exercise 4: Complex numbers
Five questions: n°4 with 3 subquestions and n°5, also.

In this test, candidates must answer 24 questions or sub questions. On average, they have 12 minutes for each question. There is a serious question of whether this test actually permits the checking of main objectives: for example, to take initiative.
This question paper is oriented towards 'sounding out of knowledge'.

2.2. At EB

In year seven, the EB consists of the A-mark based on oral participation and written work, and the B-mark established by the written examination in January.
The written examination (4h) consists of:
Four compulsory "short" questions (50 points in total) of which two questions in analysis, one on geometry and one on probability.
Two optional "long" questions (50 points in total) to be chosen from three questions: the first in analysis, the second on geometry and the third on probability.

Content of the written examination is summarized in the syllabus specifications and is slightly different from the syllabus.

2008-session

Short questions: these exercises allow the corrector to check basic knowledge
Exercise 1 – analysis – real functions and integration
Two questions; two with three sub questions
Exercise 2 – integration
Two questions; number two with two sub questions
Exercise 3 – geometry of three dimensional space
Two questions; two with two sub questions
Exercise 4 – probability
Two questions; n°1, 2 subquestions and n°2, 2 sub questions.

14 questions or sub questions in 120 minutes: average, less than 10 minutes for each question.

Long questions
Problem n°1 – analysis
Three questions : n° 1 with three sub questions ; n°2 with two and n° 3 with two.
Problem n°2 – Probability
Three questions : n°1 with three sub questions ; n°3, four subquestions
No high level of difficulty.
Problem n°3 – Geometry
Five questions : n°2 with two subquestions ; n°3 with two subquestions ; n°4 with two subquestions.
No high level of difficulty

In comparison with the syllabus, the exercises and problems of this question paper seem relatively easy and without strong linkage general objectives.

2.3. Comparison

The two question papers are built similarly: four exercises in French Bac and six in EB. These are not based on real problems, but rather a succession of elementary questions.
Neither one nor the other focus on evaluation of general skills; it is possible to observe a substantial difference between the objectives contained in the syllabus and the constructs which are the focus of the assessment.
In the EB, the syllabus is completely covered via the four compulsory exercises. In the French Bac, this is true in 2008 session, but it is not an obligation.

The required level is similar.

The time allowed to find solutions and to complete the item is similar.

In conclusion, from two different syllabus, the respective question papers are very similar.

3. The scripts and their marking

The main difference between scripts (EB and French Bac) is the form of answers: in the French bac, there is a requirement to provide many explications – this is a very important criterion.
In the EB, only numbers and different mathematics symbols are written: there is no extended argument, or explication - the general skill of communication is not evaluated.

From equivalent question papers, the two assessments evaluate different skills: it is not obvious that same marks represent the same performance in the EB and in the French Bac.

Marking

In the EB, for each question, the mark scheme is precisely linked to the question paper; in the French Bac, the mark scheme for each exercise is given in the question paper. Candidates are not aware of the mark allocation across different questions.
In the EB, there are several markers; in the French Bac, only one.
The most important difference is the choice of criteria: in the EB, agility in maths, and in the French Bac, the faculty of explaining argument about a mathematics questions.

Conclusion:

Compared to the assessment of Mathematics at French Baccalauréat, assessment in Mathematics at EB:
The two assessments show contrasting ideas of maths attainment:
In the EB, the most important elements are research and handling of mathematic tools.
In the French Bac, the main objectives are argumentation and the aptitude of showing the truth of reasoning.
It may be the case that these two approaches are reconcilable because the same elements of maths are studied in the two formations.

1.9.2 Doc 1.4

Comparative Examination of the European Baccalaureate Mathematics Syllabus (5 periods) with the Irish Leaving Certificate Higher Level syllabus

Comparisons of syllabi, even if considered only at the level of themes or topics “covered” are difficult. If a comparison is to attempt an appreciation of a wider range of constructs such as skills, attitudes, degrees of competency at grade levels, student development and learning, the task is particularly challenging. The following examination is only partial and uses the template provided by the commissioning body, the written syllabi of both systems and a sample of student work to structure and support a simple, first analysis.

Comparison of general and subject-specific aims of both syllabi

Since all syllabi and modes of assessment are designed to achieve stated aims and objectives, it is perhaps worthwhile examining these first in the case of the two cases under comparison. Both syllabi share the general aim of schooling that education should contribute to the personal development of the student and the development of knowledge and understanding in the subject area or discipline. At the level of general aims there is a slight difference between the two in the explicit aim in the Irish syllabus

that the disciplinary knowledge should provide students with skills and understanding needed for life and work. In the case of the EB there appears to be more emphasis on the study of mathematics for its own sake and for higher studies. At the risk of over-interpretation, this slight difference on the importance of the utility of mathematics seems to influence the approach to syllabus content and the modes of assessment. In the case of the EB there is a greater emphasis on formalism and theoretical foundations (see particularly the treatment of the analysis of functions) whereas in the Irish system there is a greater emphasis on intuitive approaches and practical techniques. Nevertheless, both syllabi refer to problem solving, manipulation (EB) or instrumental understanding (LC), communication and generalising (EB) or formulating a hypothesis (LC). The Irish syllabus also states as one of its aims an awareness of the history of mathematics. This is not mentioned in the European Baccalaureate syllabus.

The table below is based on a content comparison of the two syllabi. The sources used were the EB syllabus 2000-D-38 published in 2000 and the Irish Leaving Certificate syllabus (1994). The scope of the EB syllabus is narrower than that of the LC treating just the four areas of:

- **Analysis,**
- **Algebra,**
- **Geometry and**
- **Probability.**

The LC syllabus has seven core areas:

- **Algebra,**
- **Geometry,**
- **Trigonometry,**
- **Sequences and Series,**
- **Functions and Calculus and**
- **Discrete Mathematics and Statistics.**

In addition the LC has four optional topics: Further Calculus and Series, Further Probability and Statistics, Groups and Further Geometry. The structure of the assessment instrument in the EB as well as the syllabus aims demand that a student study all of the topics listed. In the case of the Irish syllabus the issue is somewhat more complicated. As will be discussed later

Comparison of syllabus content of both syllabi

The content description of both syllabi takes the form of a list of topics to be studied in the last two years of schooling. The EB specifies particular content for each of the two years of the programme (Years 6 and 7 of second-level or equivalently Years 12 and 13 of formal schooling). The LC does not indicate the content specific to each year and in practice it is the teacher who decides on the division of topics studied in the two years. Though in both syllabus documents there is a column to the right of the topic list for remarks on the content, this facility is scarcely used in either case. In the case of the Irish syllabus the remarks confine themselves to a small number of indications of exclusions. In the case of the EB the remarks are in the form mainly of elucidation of terms used in the content column. Neither syllabus provides much guidance on the depth of knowledge that is to be pursued, methods of teaching or presentation, or “real-world” applications that might be considered. In the case of the Irish syllabus support in these areas is provided by a set of Guidelines for Teachers which is not part of the syllabus documentation but is available to all teachers through the National Council for Curriculum and Assessment. It has not been possible to establish whether such support is available to teachers of the EB.

The difficult but important matter of the comparative scope or depth of treatment of content in both syllabi cannot be addressed using a simple examination of the written documentation. The only indication in this regard, based on the materials provided and in the absence of further research, is given by the written assessment tools and student responses. This will be commented on in more detail later. With regard to the scope of what is actually taught, in the Irish Leaving Certificate examination there are no mandatory questions to be answered by candidates on the core topics of the syllabus and in the assessment exercise in total, 13 questions out of 15 are answered on core material. This does indicate that, at least at assessment, some material may be left out by the student although it is usual practice to teach all parts of the core syllabus. However, only ONE of the optional topics on the Irish LC is usually taught, the most common by far being the Further Calculus and Statistics option. In the written examination of the EB a compulsory question must be answered on each of the core topics. Two further questions from three optional questions on the same topics should also be attempted. Both the compulsory questions in the EB

and the first two parts at least of the three part Irish examination questions indicate a focus on the demonstration and straightforward application of the basic skills and techniques required at this level.

Teaching time allocation

A factor that frames the question of depth of treatment is the time allocated to the teaching of the subject. In the case of the EB, the syllabus title itself indicates a time allocation in the week of 5 hours. Based on a school year of approximately 190 days in 38 weeks in Year 6 and 140 days in year 7 and assuming the "hours" indicated are full hours, this would give a teaching time on the EB of 330 hours. If "hours" indicate the more usual school unit of 45 minutes (which is the case, for example, at the European School of Munich), then this would give a teaching time of 247 hours which would be closer to the recommended teaching time on other comparable syllabi (the International Baccalaureate (IB) for instance). In the Irish case, a teaching time of six times 40 minutes or 5 times 45 mins per week would be usual in two years of 33 weeks. This yields teaching times of between 247 and 264 hours in Ireland, indicating similarity in time allocation for both syllabi.

Mapping Table – European Baccalaureate / Irish Leaving Certificate **Subject _Mathematics Leaving Certificate Higher Level___**

Syllabus compared __Irish Leaving Certificate_____

10. Complete the first column with a detailed list of the topic areas covered in the European Baccalaureate syllabus.
11. Insert a tick, or similar, to show where the topic is covered by the comparator specification – please delete option columns if there are no options.
12. Include comments to describe where a topic is covered in greater depth in one or other specification, where possible estimate how much time it would take to deliver the extra depth.

EB syllabus content	Present in core of comparator	Present in optional unit …	Present in optional unit …	Covered in greater depth in EB	Covered in greater depth in Irish Leaving Certificate
ALGEBRA: COMPLEX NUMBERS					
Introduction to complex numbers.	Y				
Real and imaginary parts of a complex number.	Y				
- Complex conjugates.					
- Operations on complex numbers:	Y				
sum, product, quotient of two complex numbers.	Y				
Reciprocal of a non-zero complex number.	Y				
- Square roots of a complex number.	Y				
Solution over $\Re$ of quadratic equations with complex coefficients.					
- Geometric representation of a complex number. (Argand diagram)	Y				
- Trigonometric form.	Y				
- Modulus of a complex number. Modulus of a product, of a quotient, of the reciprocal.	Y				
Argument of a non-zero complex number. Argument of a product, of a quotient. Argument of the reciprocal of a non-zero complex number.	Y			More formal treatment of argument results in EB (3 hours)	
Powers, nth roots.	Y				
de Moivre's Theorem.	Y				Includes the prove by induction of theorem and use in proof of trigonometric identities

ANALYSIS					
- Definition of a real function of a real variable.	Y				
- Domain of a function.	Y				
- Zeros of a function. Sign of a function.	Y			More thorough treatment of sign in EB (5 hours)	
- Even and odd functions. Periodic functions.	Y				
- Composition of two functions.	Y				
- Inverse of a bijection.	N				
- Increasing and decreasing functions, constant, monotonic, over an interval. Local and global extrema.	Y				
- Graph of a function.	Y			No discussion of monotonic functions in LC	
<u>Application of the following concepts:</u>					
- limit of a function at a point.	Y			Treatment of the limit is more formal in EB	
- continuity at a point, over an interval.					
- differentiability of a function at a point, over an interval.	N				
- l'Hospital's rule.	N				
- increase and decrease of a function. Extremum.	Y				
- graph of a function, tangent at a point on the graph of a function, asymptotes, concavity, points of inflection.	Y				
<u>To the following functions:</u>					
- absolute value.	N				
- polynomials.	Y				
- rational functions.	Y				
- functions of the type $x \rightarrow \sqrt{P(x)}$, where P(x) is a 1^{st} or 2^{nd} degree polynomial.	N				

- circular functions: sine, cosine, tangent. - natural logarithm function, exponential function with base e. - functions obtained by addition, multiplication, division or composition of the preceding functions.	Y Y Y				
<u>Continuity</u> - Notion of continuity of a function at a point; examples and counter-examples. - Continuity of a function from the right [left] of a point. - Continuity of a function over an open [closed] interval. - Statement (without proof) of theorems concerning continuity: - of the absolute value of a continuous function. - of the product of a continuous function with a real number. - of the sum, product, quotient, composition of two continuous functions. - Continuity over ∇of polynomial functions. - Continuity of rational functions over their domain.	N			The concept of continuity is treated with greater formalism and thoroughness than in Irish LC which takes an intuitive approach based on illustration (2 hours)	
<u>Limits</u> - Notion of the limit of a function at a point; examples and counter-examples. - removable discontinuity. - Right-hand [left-hand] limit of a function at a point. - Extension of the notion of limit: infinite limit, limit as	N			There is no formal treatment of limits in Irish LC [e.g. epsilon, delta definition or similar]. Questions of different left-hand and right-hand limits etc are treated graphically rather than formally (3	

the variable tends to $+\infty$ or $-\infty$. - Statement (without proof) of theorems concerning limits: - of the absolute value of a function. - of the product of a function with a real number. - of the sum, product, quotient, composition of two functions. - Indeterminant forms.				hours)	
Value of the derivative of a function at a point. Geometrical interpretation. - Equation of the tangent at a point on the graph of a function. - If a function is differentiable at a point, it is also continuous at that point. - Value of the right-hand [left-hand] derivative at a point. - Derivative of a function. Successive derivatives.	Y Y N Y Y				
Derivative of a product of a differentiable function with a real number, Derivative of the sum, product, quotient and compostition of two differentiable functions Derivative of the inverse of a function. - l'Hospital's rule. - Application of the notions of limit and derivatives to the analysis of a function:	Y Y Y N Y				
Increase and decrease of a function and identification of	Y				

any extremum, asymptotes on the graph of a function.	Y				
Concave/convex nature of the graph of a function, points of inflection; tangents at such points.					
- Application of these ideas, and those of previous paragraphs, to the study of polynomial, rational, circular (sine, cosine, tangent) functions.	Y				
Integration					
- Integral of a function defined on a closed and bounded interval	Y				
- Graphical interpretation of such integrals as area.	Y				
- Properties of integrals :					
$\int_a^a f(x)\,dx = 0 \quad ; \qquad \int_b^a f(x)\,dx = -\int_a^b f(x)\,dx$	Y				
$\int_a^c f(x)\,dx = \int_a^b f(x)\,dx + \int_b^c f(x)\,dx$	Y				
Linearity:					
$\int_a^b [\, f(x) + g(x) \,]dx = \int_a^b f(x)\,dx + \int_a^b g(x)\,dx$	Y				
$\int_a^b [\, \lambda\ f(x) \,]\ dx = \lambda \int_a^b f(x)\,dx$	Y				

Lower and upper rectangle sums, enclosure thereby -	N			More thorough treatment of link between integration and area (3 hours)	
given $a \le b$ and $f(x) \ge 0$ on $[a,b]$, then $\int_a^b f(x)\ dx \ge 0$	N				
- given $a \le b$ and $f(x) \le g(x)$ on $[a,b]$, then $\int_a^b f(x)\ dx \le \int_a^b g(x)\,dx$					
- given $a \le b$ and $m \le f(x) \le M$ on $[a,b]$, then $m(b-a) \le \int_a^b f(x)\ dx \le M(b-a)$					
- Mean value of a function f on an interval $[a,b]$:	N				
given by $\mu = \frac{1}{b-a}\int_a^b f(x)\,dx$				Mean Value theorem not on Irish LC course- greater depth here in EB (3 hours)	
- Primitives (indefinite integral) of a function continuous over an interval	N				
	Y				
If *f* is continuous over an interval *I*, and $a \in I$, then the function F defined on *I* by $F(x) = \int_a^x f(t)\,dt$ is the primitive of f over *I* which is zero when $x = a$.	N				
- Indefinite integral $\int f(x)\,dx$					
- Evaluation of integrals by the following methods :	Y				

- Integration by inspection. - Integration by parts. - Integration by substitution. - Application of these methods to the functions studied in section §1. - Application of the theory of integration to finding plane areas and volumes of revolution generated by rotation about the x-axis. - First order differential equations with variables separable leading to the form y'.f(y) = g(x).	Y Y Y N	Option: *Further Calculus and Series* in LC		Irish LC confines volumes to cones and spheres only (4 hours more on EB)	Irish Leaving Cert option in Further Calculus extends to nth order derivatives, Maclaurin series for polynomial, trigonometric and transcendental functions, the use of the ratio test to test convergence of series and the use of a series expansion to approximate
GEOMETRY IN 3-DIMENSIONAL SPACE Points, lines, planes, spheres. Relative positions of these. Definition. - Sum of vectors. - Product of a vector with a scalar. Collinear vectors. - Vector equation of a line - Linear combination of two vectors. Coplanar vectors.	 N N 2D only 2D only 2D only			Vector Geometry in Irish LC syllabus is confined to the geometry of **2-dimensional space**. Basic algebra of 2D vectors is presented to include the scalar product of two vectors but not the vector product. In this whole section	

- Vector equation of a plane. - Scalar product of two vectors - Magnitude of a vector, distance between two points. - Orthogonal vectors. - Orthogonal, normalised, orthonormal basis. - Vector product of two vectors. - Triple scalar product. - Application of these concepts to problems in analytical geometry. - The use of the preceding concepts : - in the calculation of areas of common plane figures: triangle, trapezium, parallelogram. - in the calculation of volumes of common solids: prism, parallelepiped, cylinder, pyramid.	2D only 2D only 2D only N N N N N N			the EB syllabus goes further than anything in the Irish syllabus either at Core or Option. (35 hours probably needed on EB)	
Parametric and cartesian equations of a plane. - Parametric and cartesian equations of a line. Relative position of two planes, of a line and a plane, of two lines. Orthogonal projection of a point onto a plane. Distance between a point and a plane. Distance between two parallel planes Distance between a plane and a parallel line. Orthogonal projection of a point on a line. Distance of a point from a line.	N N N N N N N N N			No 3D geometry in Irish syllabus	

Distance between two lines. Angle between two vectors in 3-D. Angle between two lines. Angle between two planes. Angle between a line and a plane. *Analytic geometry of the sphere* - Cartesian equation of a sphere. - Relative positions of a point and sphere; of a plane and sphere; of a line and sphere. - Volume and surface area of the sphere.	N N N N N N N N N				
PROBABILITY 1) *The counting of arrangements and selections.* - Permutations and combinations of a finite set with or without repetition	 Y				
Probability - random outcomes, possibilities, possibility space. - events, simple events. - certainty, impossibility - the negation of an event. - P($A \cap B$), P($A \cup B$), P($A \cap$ not$B$) .	Y Y Y Y Y				

- mutually exclusive events. - The relation between probability and relative frequency. - Probability defined on a finite possibility space. - Elementary properties. - General idea of a probability distribution. *Conditional probability.* - Probability conditional upon an event with non-zero probability; notation $P(B \mid A)$. - Joint probability : $P(A \cap B) = P(A) \times P(B \mid A)$ Use of this result within tree diagrams for random trials with several outcomes - Independent events: $P(A \cap B) = P(A) \times P(B)$ - total probability: $P(B) = \sum_{i=1}^{n} P(A_i) \times P(B \mid A_i).$ - Bayes' Theorem: $P(A_k \mid B) = \frac{P(A_k) \times P(B \mid A_k)}{P(B)} = \frac{P(A_k) \times P(B \mid A_k)}{\sum_{i=1}^{n} P(A_i) \times P(B \mid A_i)}$ *2) Discrete random variables*	Y Y Y N Option Option Option Option N N	Option: *Further Probability and Statistics* in Irish LC		Bayes' theorem not in Irish LC syllabus option. (2-3 hours)	

<u>General properties</u> - discrete random variables. - sample space. - Probability function of a discrete random variable. - Cumulative distribution function of a discrete random variable. - Expected value, variance and standard deviation of a discrete random variable. - Binomial variates: Bernoulli trials, distribution and probability of a binomial variate, use of tables. - Expected value, variance and standard deviation of a binomial variate. <u>Poisson distribution</u> - Poisson probability distribution, properties, use of tables. - Expected value, variance and standard deviation of a Poisson variate. - Poisson distribution as an approximation to the binomial distribution for n>50 and p<0.1. *Continuous random variables.* <u>General</u> - Concept of continuous random variables. - Probability density function of a continuous random variable.	Option Option Option Option Option N N N Option Option Option	Option: Further Probability and Statistics in Irish LC		Poisson distribution not treated in Irish syllabus option (2-3 hours)	

- Cumulative distribution function of a continuous random variable. <u>Normal (or Gaussian) distribution</u> - Definition. - Expected value, variance and standard deviation of a Normal distribution. - Normal curve and cumulative Normal curve. - Standardised Normal distribution, use of tables. - Normal approximation to the binomial distribution given *npq*>9.	Option Option Option Option N				Irish Leaving Cert option includes here the sampling distribution of the mean, the standard error on the mean, confidence intervals for a mean and the testing of a null hypothesis at the 5% level of significance
					TOPICS IN LEAVING CERTIFICATE OPTIONS NOT INCLUDED IN EB **Analysis (Further Calculus and Series** 3. The ratio test confined to

					series of the form $.0\sum_{\infty=nnn}xa$ 4. nth derivatives; Maclaurin series for $(1 + x)^{a}$, e^{x}, $\log_e (1 + x)$, cos x, sin x, $\tan^{-1} x$. 5. Series expansion of π, using $\tan^{-1} x + \tan^{-1} a = \tan^{-1} 1xaxa+-$ $()1ax<$. Remark: No more than two steps (as for e^{x} sin x and $x^{2} e^{x}$).17 **Probability/ Further probability and statistics** 5. Populations and

					samples. The sampling distribution of the mean. The role of the normal distribution. Standard error of a mean; confidence interval for a mean. Testing of null hypothesis at 5% level of significance. **Groups** 1. Definition from axioms. 2. Examples (including commutative and non-commutative, and finite and infinite, groups): □ Groups of numbers under + and x, including finite and

					infinite groups from Z, Q, R, C, and Z_n (modulo arithmetic); □ Matrix groups; □ Groups of permutations of degree up to 4; □ Symmetry groups (for regular polygons with up to 6 sides (dihedral groups), non-square rectangle (Klein four-groups), regular tetrahedron). 3. Subgroups: examples in known groups; cyclic

					subgroups; centralizer of an element; centre of a group. 4. Isomorphism of groups. 5. Theorems: I: Consequences of the axioms: uniqueness of identity and inverses; inverse of a product; cancellation (on left and on right); unique solution of equations ax=b and ya=b for x, y. 18 II: In any group G, if g $\in$ G then the set H = $\{g^n : n \in Z\}$ is a subgroup. Use of Theorem II to classify all subgroups of a cyclic group. III: If H, K are subgroups of G, then so also is H $\cap$ K. IV: Lagrange's Theorem and the following

					consequences: (a) any group of prime order is cyclic; (b) the order of any element of a finite group G divides the order of G. V: If θ: G $\rightarrow$ H is an isomorphism, then $\theta(e_G) = e_H$ and for any x $\in$ G, $\theta(x)^{-1} = \theta(x^{-1})$. VI: Any cyclic group of order n is isomorphic to the group of complex nth roots of unity; any infinite cyclic group is isomorphic to (Z, +). **Geometry/** **Further Geometry** 1. Locus of harmonic conjugates of a point with respect to a circle. Focus-directrix definition of an ellipse;

					derivation of the equation of an ellipse in standard form. 2. Transformations f of the plane π which have the co-ordinate form (x,y) (x′, y′) where: → $x' = ax + by + k_1$ $y' = cx + dy + k_2$ and ad – bc 0. Use of matrices. Magnification ratio. Invariance of ratio of lengths on parallel lines, and of midpoints. Invariance of centroid of a triangle. Invariance of ratio of areas. ≠ 3. Deduction from results for a circle of similar results for an ellipse (dealing with the centre of an ellipse, tangents at the endpoints of a

					diameter of an ellipse, locus of midpoints of parallel chords of an ellipse, locus of harmonic conjugates of a point with respect to an ellipse (pole and polar), areas of all parallelograms circumscribed to an ellipse at the endpoints of conjugate diameters). Proof of Lagrange's Theorem not required. 19 4. Similarly transformations, including enlargements and isometries. That similarity transformations map angles to equal angles, triangles to similar triangles,

					and circles to circles. Invariance under similarity transformations of orthocentre, incentre and circumcentre of a triangle.

Content included in Irish Leaving Certificate Higher Level syllabus but not in EB syllabus

Please list any topics that are included in the Irish Leaving Certificate Higher Level specification but not in the EB syllabus…

21. **Core: Algebra: Proof by induction of simple identities on integer sum results, sums of series, inequalities and factorisation results.**

22. **Core: Algebra: Algebra of 2x2 matrices, application to solution of linear equations in two unknowns.**

23. **Core: Geometry: Cartesian geometry of the circle, tangents to circles, trigonometric and parametric equations of circles**

24. **Core: Geometry: Transformation Geometry, linear transformations of the plane, invariance or non-invariance of perpendicularity, distance, ratio of two distances, area.**

25. **Core: Trigonometry: Proofs of trigonometric identities (20), solution of trigonometric equations, linear, quadratic and those convertible to a product of functions in one step.**

26. **Core: Sequences and Series: Arithmetic, geometric sequences and series, finite series of telescopic type, binomial coefficients, recurring decimals as infinite geometric series.**

27. **Core: Discrete Mathematics: linear difference equations**

28. **Option: Group theory: Axioms of a group, examples: numbers, matrices, permutations symmetry groups. Subgroups, cyclic subgroups, centraliser, centre. Isomorphism. 5 theorems on groups (includes Lagrange's theorem)**

29. **Option: Further Geometry: Geometry of Ellipse (tangents, endpoints of diameter, parallel chords, harmonic conjugates)**

Comparison Table for comparison of assessment models

Use this table to make direct comparisons between the syllabuses in the following areas:

22. structure of the assessment model, including the format of assessment for the specification/syllabus
23. whether coursework is assessed, the kinds of coursework assessed and contribution to overall grade
24. whether oral assessment is part of the assessment model, and the extent and format of oral assessment
25. whether the assessment model is unit-based or requires candidates to take a synoptic view of the topics, and to what extent

NOTE: the prose commentary on the assessment models should draw attention to significant differences in the requirements for the European baccalaureate and A Level or IB.

	European Baccalaureate	**Irish Leaving Certificate**
Assessment structure, format and timings	<u>Assessment system</u> The final European Baccalaureate result is composed of the following three elements: **1. The preliminary marks 40 marks out of 100** **2. Written examinations 36 marks out of 100** **3. Oral examinations 24 marks out of 100** **1. The preliminary marks** **This consists of two marks (A and B) in 6th year and the A mark in the 7th year as follows:** **A mark (6th year)** The assessment is done on work in class. This is based on oral participation and written work **B marks (6th year)** Class examinations, at the end of the first semester, if studying advanced maths, there will be a class examination at the end of each semester and an arithmetical average of all scores will give the B mark **A mark (7th year)** This mark consists of a teacher's assessment of oral participation and written work. Value 40% of final result.	<u>Assessment system</u> Continuous assessment is informal. End of year exams at the end of the first year of the programme are usual, and most student complete a "mock" examination in January or February of the final year in preparation for written examinations in June. The assessment instrument consists of two written examinations, Paper 1 and Paper II taken in the early weeks of June. The structure of the papers is as follows: Paper 1: 2.5 hours. Students chose any six out of eight questions. Topics: Algebra: complex numbers, matrices, induction; Sequences and Series, Functions and Analysis (differentiation and integration). Value 50% of total mark. Paper 2: 2.5 hours. Students chose any 5 out of 7 questions on core topics and ONE question on one of the four optional topics. Core topics on this paper are: geometry: circle, line and linear transformations; Vector geometry, Trigonometry and Probability. The four optional topics are: Further Calculus and Trigonometry, Further Probability and Statistics, Groups and Further Geometry. Value 50% of total mark.

	2. Written Examination **B mark (7th year)** For the European Baccalaureate, students take a written examination (4 hours) in June of the final year. The exam consists of four short compulsory questions (50 marks in total) two questions on analysis, one on geometry and one on probability. Students should also answer two optional long questions, from a choice of three questions- one on analysis, one on geometry and one on probability (50 marks in total). Questions are based mainly on the year 7 syllabus, but may require knowledge of material studied in year 6. Marking takes into account method and interestingly presentation. A formula booklet is provided to support in the exams. Value of 36% of final. **3. Oral examinations** Oral examinations last twenty minutes. Before each oral examination candidates will be allowed twenty minutes of preparation time. Value 24% A final mark of 60% or more will indicate a pass	A final mark of approximately 40% will indicate a pass at D3 level on the scale A1, A2, B1, B2, B3, C1, C2, C3, D1, D2, D3
Coursework assessment	Oral participation and written work are formally assess in both years of the programme as indicated above.	None, summative assessment by examination only
Oral examination	There is a formal oral examination for students doing Mathematics at this level. The oral examination is conducted by two examiners: the candidate's teacher and external examiner. Each candidate draws by lot an unmarked envelope containing a number. The candidate then receives a question corresponding to that number. Candidates may reject the first question they pick but will lose 20% of the marks awarded for the second question chosen. During the examination the candidate may use the document(s) supplied and any notes made in the preparation period. At the beginning of the examination the candidate must be given the opportunity to set out his/her ideas on the question asked. If the candidate is incapable of taking the initiative, the examiners should help by asking questions. The examination should gradually take the form of a dialogue between the candidate and the examiners.	None, summative assessment by examination only

	Marking Each examiner marks the oral examination on a scale of 0- 1 0; half marks are allowed. The final mark will be the arithmetical average to two decimal points of the marks awarded. Value 24% of total.	
Synoptic assessment	From the data available it is not possible to gauge the degree to which synoptic assessment is employed in the preliminary mark or in the oral examination. From a study of the written examination papers it can be said that the questions confine themselves to specific topics and there are no questions that require a student to use their knowledge across topic boundaries other than the use of generic mathematics skills.	Synoptic assessment is not a stated feature of the Irish syllabus and an analysis of past written examinations reveals that questions, though not titled with a topic, are predictably on the same topics each year (for instance, Paper II question 1 is always on the geometry of the circle). It is sometimes the case that in the final parts of some questions the demand is made of the student that they apply knowledge across topic boundaries.

Comparison of student work and marking procedures

An attempt was made to compare student work at this level in both syllabi. Scripts from 12 EB written examinations taken in 2008 and 15 Irish Leaving Certificate examinations taken in 2007 were reviewed. A direct comparison of student performance is rendered all but impossible due to the differences both in the syllabus content and the different focus of assessment in question structure and type. The closest comparison that can be made is between the compulsory analysis question in the EB and the differential and integral calculus questions 7 and 8 of Paper I in the Leaving Certificate. A more general comparison can be made on the degree of mathematical formalism and grammar used by the students and the general presentation of student reasoning.

It is important to note that the sampling method for the scripts was not known to this author. It is evident from indications on the EB scripts that they all came from the same school. This presents obvious methodological difficulties and all that follows must be read in the light of the possibility that the scripts say as much about a school or even a single teacher as they do about student achievement. From the Irish scripts it is clear that they come from different schools as the examination centre number is indicated on the covers. However, at the time of writing it was not known how the sampling frame was constructed.

The scripts do represent a range of achievement based on raw scores. In the case of the EB scripts the raw scores ranged from 2.1 to 9.7. How this sample spread is related to the spread in the population was not known. The Irish scripts had scores ranging from 35% to 80%. While population statistics are available on the percentiles of the population attaining a certain grade level in the Irish Leaving Certificate, it was not known where the percentage score boundaries for grade levels had been set in 2008. Finally and curiously, in the case of EB scripts there were no examiners marks on the scripts so it was impossible to see how, in detail, the examiner had got to the final mark. The Irish scripts were clearly annotated with achievement marks, negative marks for blunders and slips and attempt marks.

With due regard to all of the caveats that emerge from above, the scripts were rank ordered and some general comments can be made about the overall quartiles. Once again, however, the attempt to compare the achievement on the compulsory analysis question 1 on the EB paper and question 6 on Paper 1 of the Leaving Certificate is hampered by not having the individual question results on the EB scripts. Despite this, the following may have some legitimacy.

Both questions concerned the procedural application of analysis techniques to standard transcendental functions. There is no demand in the question for problem solving techniques, translation, modelling or hypothesis testing. In both sets of scripts, the candidates in the overall upper quartile showed good competency in applying similar analytical skills. They were capable of differentiating, finding zeros, critical

points. The EB question required an instrumental knowledge of integration and the Irish paper required an instrumental knowledge of implicit differentiation but both of these are comparable in the level of difficulty.

In the middle half of the range, the EB scripts seem to indicate a slightly better grasp of basic skills and more of the question is completed on the EB scripts that in the Irish case. However, the demand for algebraic manipulation in the case of the Irish question is much greater than in the case of the EB so that students come to a satisfactory answer more quickly in the EB question. The considerable algebra needed for simplification in the Irish case could certainly act discouragingly,

In the bottom quartile of scripts there was a clearer indication that basic skills such as finding the derivative of a product was more evident in the EB scripts than in the Irish ones. The weakest of Irish scripts showed very poor basic skills at this level even taking into account the distractor of the amount of algebra.

Finally, one striking general feature of the review of these papers is the attention given by EB students to presentation. Work was presented for the most part cleanly, line-by-line down the page so that the sequence of the argument is evident. It would seem that marks are awarded for presentation and this obviously has an effect on how work is shown. The presentation of work on the page by Irish students was good among the high achievers but at times very poor among those at the lower levels of achievement. At times these scripts are difficult to read with much crossing out and movement around the page.

It is not possible to conclude very much from this script examination exercise that could be generalised but taking all cautionary remarks into account, it would seem in these samples that the middle and higher achievers generally show similar levels of competency in the demonstration of the fundamental skills of the course and in the bottom quarter of the samples there is some evidence of better basic skills among the EB students.

Geography

1.9.3 Doc 1.1

Comparability Study – Geography

Comparison Table for comparison of assessment models: EB vs OCR Geography

	European Baccalaureate	**OCR GCE A Level**
Assessment structure, format and timings	**Preliminary mark:** ▪ A mark: based on participation in class, class work of all kinds, homework, fieldwork, tests etc. Teacher devised and assessed. Based on Yr 7 work. ▪ B mark: Yr 7 class examination (3hrs) at end of 1st semester. Teacher devised and assessed. **Written examinations:** ▪ End of course. ▪ One paper (3hrs) with four questions, each corresponding to a Yr 7 theme. Candidates answer two questions, one compulsory (theme notified in Yr 6) and one choice. ▪ Questions are focused on Yr 7 syllabus but candidates can use Yr 6 material in their answers. ▪ Externally set. Marked by teacher and external examiner with third marking if first two have insufficient agreement **Oral examination**	**Overall: 6 units of assessment**, one for each module, comprising 5 written papers (one incorporating coursework), and 1 investigation (coursework) **AS:** ▪ Two units each have written papers (1½hrs) with two sections: Section A: choose 2 out of 3 structured questions (1 on each of the study sections within the unit), may be short answer or data response. Section B: choose 1 out of 2 concise essay type questions relating to at least two of the study sections. 30% of A level mark (answer 3 questions each paper) ▪ Third unit (investigation): Section A: report based on fieldwork. Section B: taken later, externally set and marked, controlled conditions within assessment sessions. Choose 1 of 3 essay questions and 1 data handling. 20% of A level mark **A2:** ▪ Two units each have written papers (2hrs), externally assessed. 2691: choose 2 of 8 questions (matching 2 units chosen for study). Each question has 1st part based on stimulus material and 2nd part choice of 1 out of 2 extended essays. 15% of A level mark (answer 3 questions). 2692 has variable number of compulsory structured questions and tasks, based on pre-release material. 20% of A level mark Only available at end of course. ▪ Third unit: investigation - internally assessed, externally moderated. 15% of A level mark **Units can be taken within and at end of course in the assessment sessions (January and June), or all at end of course as 'linear'.**
Coursework assessment	Nothing formal. Assessed throughout Yr7, within preliminary A mark.	**AS:** Fieldwork needs to be undertaken as part of the two AS 'systems' units. This is assessed via the report (part of which

		forms Section A of the third unit. **A2**: Third unit is all coursework, involving one personal investigation and collection of primary and secondary data. Primary data can be from fieldwork or ICT research.
Oral examination	20 mins (with 20 min preparation time when notes can be made and used in examination). One question drawn at random by candidate. Candidate can refuse this question and draw again but with 20% mark penalty. Atlas allowed.	none
Synoptic assessment	None stated. Candidates can draw from Yr6 work to support answers	Unit 2692 is designed to be synoptic. AS units have synoptic questions in Section B

1.9.3 Doc 1.2

Content Comparison Table – European Baccalaureate / OCR A Level

Subject: Geography

Syllabus compared Geography B 7833

13. EB syllabus is divided into 3 modules for Yr6 and 5 themes for Yr7. OCR syllabus is divided into 3 modules for AS and 3 for A2.
14. EB core syllabus of 5 themes (Yr7), module one (Yr6), parts of modules two and three. Some optional themes in modules two and three.
15. OCR core syllabus of 3 AS modules and 2 A2 modules with optional units in the third A2 module

EB syllabus content * optional	Coverage in EB	Covered in OCR B *optional
Year 6 Core content		
Module 1: Geographical methods (*skills*) ▪ Map reading and interpretation ▪ Aerial photos and satellite images ▪ Graphical techniques ▪ Critical interpretation of different mapping techniques ▪ Sketching ▪ Systems diagrams o *simple statistical techniques o *GIS ▪ Practical fieldwork ▪ Independent data collection, processing etc (hypothesis testing)	Taught as a unit or integrated Fieldwork 'strongly recommended' Statistics apparently only an option but later correlation appears as an expectation	Two modules (one each year) of geographical investigation. AS: module should be integrated. A2: module develops from skills acquired at AS to be a separate unit of teaching and assessment as a compulsory, substantial, 15% final mark, personal investigation. Syllabus is more specific and detailed of skills. Fieldwork clearly expected.

Module 2: Development studies – *'human' based broad theme (thematic or regional/country studies)* Touches many topics within all four dimensions (environmental, social, economic and political). ▪ Measuring development ▪ Factors contributing to lack of development ▪ Approaches to development (economic, core-periphery etc, sustainability) ▪ Development issues – *options (at least 2 out of 11) ▪ Case studies - 1 large- 1 small-scale Central concept of development (economic and quality of life/health etc), used as a vehicle to cover elements of environment, resources, trade / poverty / debt, population (linked to food supply, culture, gender), political geography, industry (multinationals, tourism), urban (*megacities)	Allows studies of Less Economically Developed Countries (LEDCs) and More Economically Developed countries (MEDCs) Only limited coverage of the topics	AS: Development linked to population as part of Human Systems and Management' module and throughout the module. Present in most modules where issues and human impact involve looking at places at local, regional and national scales in LEDCs and MEDCs. A2: *optional module Tropical Environments and People focuses on development Core module Issues in Sustainable Development is synoptic and allows greater breadth and depth of coverage within the focus of resources and land use management.
Year 7 Core Content Eurocentric but general teaching guidance is that studies should be in their global context with reference back to Development Studies of Yr6		
Theme1: The natural environment of Europe		
The origin and shape of the land ▪ Tectonics ▪ relief Climate and vegetation ▪ Factors affecting climate ▪ Main climate, vegetation zones Case study of the Alps ▪ Tectonics, glaciation, vegetation and landscape,	Knowledge based. Physical topics in limited terms, content. Only large scale landforms – mountains, shields, major river valleys etc. Only one hazard, rivers/ hydrology based Case study allows integration of physical and human elements but, very specific. Glaciation becomes a core topic	AS: Physical Systems unit, with wider coverage and emphasis on processes, systems and management. Includes weather, microclimates, weathering, slopes, fluvial and coastal landforms, ecosystems. No core glaciation. A2: a physical *option *must* be chosen, allowing more breadth and depth of study of hazards, climate (climate change, air pollution), glacial and periglacial

human impacts Hazards and people ▪ Flooding (Some Yr6 *In-depth units have physical themes relating to climate, rivers, coasts, plates and environments)	River and coastal landforms and management are only options	areas, tropical environments (ecosystems). Climate is an element throughout. All physical topics link to human aspects.
Theme 2: Europeans		
Population distribution in Europe Demographic change Migration (with a case study of changing internal migration within one EU country) Case study of inner city problems in one urban area	Standard population topic Very limited settlement/ urban material	Population: AS: population dynamics, policies etc – in the context of development. Urban: Much more urban geography here. AS: part of Settlement Dynamics section, which also includes rural settlements, with emphasis on form, function, change and planning. A2: *option on changing urban places
Theme 3: Industry and energy: change over time		
Europe's industry and energy resources *Emphasis on energy* Industry – past, present and future (with case study of rise and fall of heavy industry) *Includes de-industrialisiation, globalisation, changing location factors* Energy issues and policies *Includes nuclear debate, alternative energy*	Non specific on resources Industry mainly as manufacturing with some tertiary Energy a clear topic	AS: resources linked only to population and economic development A2: resources are key to the core unit on sustainable development with 'illustrative content' topics of energy, fresh water, oceans, soil, forest, air quality, landscape, transport, waste disposal AS: tackles industry broadly as changing location and spatial organisation of economic activity A2: *optional unit on globalisation of economic activity

The variety of rural land use in Europe The changing role of farming ▪ Agriculture as a system ▪ Intensification of farming (CAP, economic and environmental effects, agribusiness and factory farming) ▪ Environmentally sensitive farming (quality of landscape e.g. national parks, organic farming, CAP changes) The rural-urban fringe Villages – types, changing function, structure, population Urban area spread – problems, solutions Changing land use e.g. out of town shopping	Concept of systems Topics of agriculture and settlement (rural and urban) with land use	Agriculture: A2: covered by *options, particularly Food supply but also within Tropical Environments Settlement: see Theme 2 notes above.
Theme 5: Tourism and transport		
Tourism Compulsory case studies of 2 contrasting areas covering winter (Alps) and summer (Mediterranean coast) with themes o Mass tourism o Effects of tourism o Future of tourism Transport ▪ Comparison of types ▪ Environmental issues ▪ Case study one major project ▪ European policies	Tourism very restricted in locations, however these do enable the coverage of main elements of the topic. Transport enables study of environmental issues	Tourism: AS: could be included as minor element. A2: * optional unit on leisure and tourism Transport: AS: linked to changing economic activities A2: *links with tourism but is a key element in unit on globalisation
Theme 6: the European union – issues and challenges		
Regional policies – measuring and dealing with inequalities Includes case studies of problem European periphery and	The 'home region' of the European Union is placed squarely at the centre of this theme which focuses on regional differences and	AS: modules focus on the 'home region' of the British Isles Less of 'regional' and political focus

core regions (one of each) E.U. and its trade relations with the less developed world Europe's future	economic relations with LEDCs	Some content found within other topics
Year 6 Optional Content		
Themes for in-depth studies (Two to be selected) ▪ Choice from fifteen themes covering wide range of topics such as plate tectonics, rivers, coasts, global climate, difficult environments, environmentally sensitive areas, using oceans, tertiary activities, conflict, China, Russia, emerging economies, industrial change	In depth studies in first year of course Teachers are advised to: achieve a balance between human and physical geography, avoid case studies from Europe, take an enquiry based approach with research and discussion	Broader studies in first year of course to provide base for in depth studies in second year options

1.9.3 Doc 1.3

Content included in International Baccalaureate Geography (comparator syllabus) but not in EB syllabus

These topics occur as options so all will not be covered by the IB. It is possible that these could be taught within the EB but they are not obvious and given prominence.

30. weathering
31. slopes
32. microclimates
33. ecosystems
34. weather observation and forecasting
35. glacial and periglacial processes and landforms
36. soil erosion
37. urban systems and planning
38. Cultural integration

1.9.3 Doc 1.4

Comparison between LC Higher level and the EB
The Syllabus
Module1. Geographical methods/ skills

LC; Skills taught as units AND integrated into Core Units, Electives, Options and the GI.

Skills are listed at the start of each unit and are central to the student's experience of LC Geography.

Map interpretation, figure interpretation, photograph analysis, statistical analysis, figure drawing, information technology applications. Planning, data collection, report planning, and analysis and presentation of results and conclusions are required for the GI. This GI is compulsory and is marked out of 100m, which is 20% of the total.

Module 2 Development studies

Students choose between the Economic Elective 4 and the Human Elective 5.
Students also choose between 4 Options, which are Option 6, Option 7, Option 8 and Option 9.

Development studies are found in Elective unit 4, looking at uneven patterns in the distribution of economic activities, levels of economic development, the process of change in development, issues arising from the development of a single interdependent global economy.

Development studies are also found in Option 6 where evaluating the differing views of development and underdevelopment, assessing the impact of current economic patterns on developing economies, sustainable development and differing views of development are studied.

Theme 1: The natural environment of Europe.

In Core unit 1, which must be studied, Plate tectonics, how crystal structures are created, modified, and destroyed, rock formation, the development of landforms and the interaction of the tectonic cycle, rock cycle and surface forces, the balance between endogenic and exogenic forces, the impact of human activity on physical processes at work on the landscape are studied in relation to local, national and international examples

From the list; Mass Movement, Fluvial processes, coastal processes and glacial processes, all must be studied but ONE must be studied in detail.

Students must also study ONE of the following; how human activities can impact on either mass movement, or river processes or coastal processes.
Climate and vegetation are not studied in Core 1, but are dealt with in Option 7, Geoecology, where ONE major biome is studied. Also in Core 2, Regional, in relation to the concept of a region.

Theme 2 Europeans

Core unit 2 is Regional geography. Students study two contrasting regions in Ireland e.g. Dublin region and the BMW and two contrasting regions in Europe e.g. Mezzogiorno and

Paris basin, and one continental/ sub continental region e.g. India, SW USA etc. These are studied in relation to Primary, Secondary, Tertiary and Human processes.

In Elective unit 5, population change over time and space, the impact of population movements, problems associated with the growth of urban centres are studied.

Theme 3 Industry and energy

In Elective unit 4, renewable and non renewable resources, fossil fuels and alternative energy sources, one MNC in relation to its locations, RMs and markets, effects etc ,core and peripheral regions, environmental pollution past present and future, conflicts.

In Core unit 2, Regional geography, Industry is dealt with under Secondary processes in Ireland, Europe and a continental/ sub continental region.

Theme 4 The rural environment

In Elective unit 4, EU policies e.g. CAP, CFP, regional development funds and social funding are studied.

In Elective unit 5, settlements including rural and cities are studied. Types of rural settlement, planning for rural settlements, changing land use in cities, land values, expansion of cities and pressure on rural land use, a variety of problems in cities etc.

Theme 5 Tourism and Transport

In Core unit 2, Regional geography, Tourism and transport are dealt with as Tertiary processes, in 2 Irish regions, 2 European regions and one continental/sub continental region.

Theme 6 The EU Issues and challenges

In Core unit 2, Regional, under the concept of a region, inequalities are dealt with. Also one core and one peripheral region in Europe AND in Ireland must be studied.
In Elective unit 4, patterns in world trade and the global economy.

For LC, Students must study;

Core 1 and Core 2 and Core 3.

ONE from Elective 4 OR Elective 5.

ONE from Option 6 OR Option 7 OR Option 8 OR Option 9.

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Leaving Certificate: GEOGRAPHY HL 2008

Assessment

G.I. (Field work)

G.I. to be completed and written up by April of 6th Yr. Booklets are sent to the school and are given to the student to be written up, usually in the school, but can be done in their own time outside school. The teacher and student must sign that the work has been done by the student. The finished work is kept in the school and placed in a double sided plastic folder, together with the students written exam paper in June. Both are marked by the same Examiner.

There is a list of approx 5 topics to choose from. This is decided by the teacher (and sometimes the pupils) of the class. The total mark is 100m.

The booklet is divided up as follows:

Introduction/ Aims; 5m (4 pts at 1m ea plus an O.C of 1m).

Planning: 5m (4 pts at 1m ea plus an O.C. of 1m).

Gathering of data; 40m. Here 2 different methods of gathering are required e.g. measuring, observing, recording etc. Each method can merit 9 SRPs (pts) at 2m ea. The other 4m is an overall O.C. mark.

Results, Conclusions and Evaluations; 30m. The answer requires 4 results, 4 conclusions and 4 evaluations at 2m ea. Plus an overall impression mark, O.C. 6m.

Organisation and Presentation of results; 20m. Two different charts are required, each worth 8m plus an O.C of 4m. Depending on the type of charts drawn, an e.g. of the marking would be ; Title 2m, Axis 2m, 2 correct bars 2m plus 2m.

Written Paper

Time allowance 2 hrs and 50 min.
Total mark possible; 400m. (The written paper plus G.I is worth 500m).

There are 2 parts to the exam.

Part 1.Short answer Qs

The student must attempt 10 out of 12 short answer Qs at 8m ea. Most are divided into 2 or 4 parts. Topics are from the Core content of the course. They are answered IN the booklet.
Examples of Qs e.g.
a diagram with the 4 items shown to be named,
4 groups of answers, with the correct on in each line to be circled,
matching 2 columns with 4 items in each column,
Land use and location on an aerial photograph, etc.

Total mark; 80m.

Part 2 Structured and Essay Qs. 320m

4 Qs to be attempted

2 from Section 1
1 from Section 2
1 from Section 3

Section 1 CORE

2 Qs to be attempted, 1 from Patterns and processes in the Physical environment AND 1 from Regional Geography

Each Q is divided into Parts A, B, and C.
Part A; is worth 20m and is the easiest part of the Q. It might involve;
drawing a sketch and showing and naming 4 items,
Studying a chart and naming 4 shown items, looking at 4 photographs and naming items shown, drawing a bar chart based on figs given etc.

Parts B and C; require written answers for 30m ea. The method of marking is SRPs (significant relevant pts, each one a piece of factual information in a comprehensive statement e.g. a geographical term and a brief explanation, 2 small bits of linked information, a statistic plus a little extra information etc.

1. Section 2 Electives

One Q to be attempted from EITHER;

Patterns and processes in Economic Activities
OR
Patterns and processes in the Human Environment.

Economic activities are Q 7, Q 8, Q 9. One Q to be attempted.
OR
Human Environment Q 10, Q 11, Q 12. One to be attempted.

Each Q is in 3 parts, in a similar layout to the Core Qs.

Part A for 20m to draw a graph on graph paper, to draw a sketch map to half scale of an aerial photograph, to read 4 bits of information from a chart etc.

Parts B and C; to deal with Topics e.g. Reading O S. maps, examining Developing economies, Multi national Companies, Sustainable development, EU Policies, Global Energy consumption, Urban Functions, Population density and distribution, Artificial Land use, Migration, Central Place Theory, Urban Future.

Section 3 Options

ONE Q to be attempted

There are 4 Options, with ONE to be studied.

Global Inter dependence. Q 13, Q 14, Q 15, relating to e.g. Global trading systems, International Aid, Desertification, Global Warming, Deforestation etc.

OR
Geoecology, Q 16, Q 17, Q 18, relating to Human activities altering a Biome, processes influencing Soil Formation, Characteristics of a Biome etc.

OR
Culture and Identity. Q 19, Q 20, Q 21, relating to religion or language as a cultural indicator, the effect of boundaries on the physical landscape and political decisions, Challenges of International Migration etc.

OR
The Atmosphere Ocean Environment Q 22, Q 23, Q 24, relating to Depressions and Anti cyclones and the weather patterns associated with them, The Q. of Global Warming—Is it under way?, the interaction between the atmosphere and the oceans etc.

In an Option answer, 3 or 4 aspects of the topic are required. Each aspect is marked; as;
4 Aspects, each at;

Identify aspect	4m
Examination	6 SRPs
O.C	4m graded
3 Aspects, each at;	
Identify aspect	4m
Examination	8 SRPs
O.C.	7/6 graded

In the 2008 paper;
Patterns and Processes in the Physical environment.

Q 1
A Ordnance Survey Extract.
To draw a sketch map to half scale of the provided O.S. map, showing and naming a river, a runway, an area of silting and a sea ferry route.

B Landform Development

To pick one Irish landform	
Identify the landform	2m
Name a process	2m
An Irish e.g.	2m
A labelled diagram	4m graded
Examination	10 SRPs

C Human Interaction

To pick one Natural process from the list and to describe and account for humans controlling/influencing it.

Influence/control identified	2m
Named e.g.	2m
Reference to natural processes	2m
Discussion	12 SRPs

Q 2

A Sea floor spreading
To examine a sketch and name e.g. The Mantle, the internal process at a particular point, to name a mid ocean ridge, to name a plate boundary.

B Vulcanicity

To explain plate tectonics in relation to the global distribution of volcanoes

Global e.g.s	2m plus 2m
Plate tectonics examined	13 SRPs

C Karst landcapes.

To examine the processes which have influenced the development of any landform in a Karst region.

Landform identified	2m
Named process	2m
An Irish e.g.	2m
Discussion	12 SRPs

Q 3

A Rock Type

To examine 4 different rock types in 4 photographs and label correctly, Granite, Basalt, Limestone and quartzite.

B Rock Type and landscape

To examine the formation of ONE rock type and show how it produces a distinctive landscape.

Rock Formation		**Distinctive landscape**	
Identification	2m	Identification	2m
Named E.g.	2m	Named e.g.	2m
Examination	5/6 SRPs	Examination	6/5 SRPs

C Earthquakes

To examine with reference to actual E/Qs, the measurement and effects of E/Qs

Measurement identified	2m
Effects identified	2m plus 2m
Named e.g.s	2m plus 2m
Discussion	10 SPs (5 measurement and 5 Effects)

Regional Geography

Q 4
A Irish Regions

Draw an outline map of Ireland. On it show and name, One Irish region, one urban centre in the region, one major route way in the region, one major feature of the physical landscape.

B Economic Activities
To examine the development of ONE economic activity in a European region (not Ireland)

Name an economic activity	2m
Two factors identified	2m plus 2m
Region named	2m
Examination	11 SRPs

C Urban Regions

Describe and explain the growth of ONE major urban area in a Continental/Sub continental region.

Region named	2m
Urban area named	2m
Examination	13 SRPs

Q 5 Energy

A energy consumption per capita in EU 25 in 2994 (% of total)

A table given of Energy sources and % consumption. The candidate to draw a suitable graph on graph paper.

B Tertiary activities

To examine the development of tertiary activities in an Irish region

Region named	2m
Two named tertiary activities	2m plus 2m
Examination	12 SRPs

C Culture

To describe and explain the importance of culture in defining regions in a Continental/Sub continental region

Aspect of culture identified	2m
Region named	2m
Explanation	13 SRPs

Q 6

A Non Irish Regions

Draw an outline map of a European region (not Ireland) OR a Continental/Sub continental region, Show and name the following: any 2 physical features and any 2 large urban centres in the region.

B Ireland

Examine the development of Primary Economic activities in an Irish region

Region named	2m
2 named primary activities	2m plus 2m
Examination	12 SRPs

C European Union Expansion

Examine the economic and/or cultural impact of expansion on any ONE member state of the EU.

Impact identified	2m
Named e.g.	2m
Examination	13 SRPs

1.9.3 Doc 1.6

Evaluation - Geography

- Both cover a range of scales from local to regional to global.

- Both have topics of choice within the syllabus.

- EB has a core content of 2 modules and 6 themes. Plus an in depth study of 2 from a list of 15 optional themes.
- LC has Core 1 (physical) and Core 2 (regional) and allows a choice from 2 Electives (one to be studied) and a choice from 4 Options (one to be studied).

- EB is assessed over 2 yrs (examinations in each of 2 yrs,
- LC is assessed in one final exam at the end of the 2nd year. Apart from the GI which is written up beforehand.

- EB is more limited in that only 2 Qs have to be answered in the 3 hour exam.
- LC requires 5 Qs to be answered in 2 hours and 50 min.

- EB A number of examiners are involved in the examination between class teachers, written examiners and oral examiners.
- LC One examiner mars all.

- EB Physical geography is less important than human.
- LC has physical in Core 1, and Optional units 7 and 9.

- Skills are important in both, being taught as units and integrated into all aspects of the course.

- EB. Certain topics are dealt with in certain years eg year 6 or 7.
- LC. The teacher has total freedom to work through the course in any order.

- Both allow teacher interpretation of what is covered within topics. In LC settings are provided as egs and are not prescriptive. Teachers may also choose their own case studies.

- EB has more stimuli in each Q with a number of photos, charts etc per Q.
- LC Here this is more limited.. However similar stimuli are used in the form of photos, aerial photos, maps, a variety of charts etc.

- EB The field work is “strongly recommended”.
- LC. The GI is compulsory.

- **EB** Difficult to understand breakdown of marks as only final mark is shown.
- **LC.** Lots of 30m are divided into SRPs of 2m each. Many students now lay out the answers in bullet points to match the SRPs. When the paper is marked it can be clearly seen where marks were allowed. The GI is mostly marked in the same way.

- Standards seem much the same on both EB and LC. However the GI which usually merits a high mark can bring a weak script up to quite a high grade.

1.9.3 Doc 1.7

Mapping Table – European Baccalaureate / Leaving Certificate

Subject Geography_____

Syllabus compared ___Geography_____

16. Complete the first column with a detailed list of the topic areas covered in the European Baccalaureate syllabus.
17. Insert a tick, or similar, to show where the topic is covered by the comparator specification – please delete option columns if there are no options.
18. Include comments to describe where a topic is covered in greater depth in one or other specification, where possible estimate how much time it would take to deliver the extra depth.

ALL TABLES PROVIDED IN EXCEL SHEET

Content included in …the Leaving Certificate Geography but not in EB syllabus

Please list any topics that are included in the LC specification but not in the EB syllabus.

39. **Census of population data.**

40. **The Rock cycle.**

41. **Human interaction with a choice of physical processes e.g. Mass a movement, River processes, Coastal processes.**

42. **The concept of a region and e.g.s**

43. **2 contrasting Irish regions, 2 contrasting European regions and 1 continental/sub continental region.**

44. **Complexity of regions e.g. economic, political, cultural, changes in boundaries, urban growth.**

45. **Dynamics of settlements e.g. changing functions, planning, land use, land values etc.**

46. **The 4 specific Options, where students study ONE in depth;**

    a. **Option 6, Global Interdependence.**

    b. **Option 7. Geoecology.**

    c. **Option 8. Culture and Identity.**

    d. **Option 9.The atmosphere Environment.**

47. **A choice of Electives, Economic OR Human. The topics (listed on another page) studied in depth.**

48. **G.I. (Field work) compulsory. Merits 100m out of the total 500m for the exam.**

1.9.3 Doc 1.8

Geography

Subject content summary (EB, OCR, IB)

Both EB and OCR have an investigative, 'issues' based approach although this is more obvious in the way the OCR syllabus is constructed. The IB approach is from a sense of spatial differentiation with human-physical environment interrelations and issues then follow from this.

The EB syllabus is briefer and expressed in more knowledge based / topic terms. It allows a wide range of teacher interpretation and actual content. The OCR and IB syllabus content is presented in more detail and depth. OCR has a more complicated format involving questions for investigation, key ideas and concepts and environments and scales of study. IB is more simply organised via topics and sub-topics.

EB appears more 'regional' although teachers can take a thematic approach. OCR and IB are essentially thematic.

The core subject material is taught in different parts of the courses and plays a different role. EB has core material in Yr 7, which is then assessed. The Yr 6 work which is mainly optional is used to provide a wider context of support. OCR has core material for AS that then forms the basis for more in-depth and optional studies for A2. IB does not prescribe the teaching order.

Although all syllabuses cover the same broad topics, the umbrella modules and units are not very similar, giving different focus and form. The EB is undoubtedly Eurocentric with a focus on economic and political issues in Yr7. Only in Yr6 does the EB approach a range of topics and locations outside Europe via a 'development' module and optional, unconnected in-depth studies. IB also has a core unit linking development to population and resources then, is more similar to OCR, which uses concepts of systems and management to approach physical and human processes with their associated issues at AS and then uses environmental and sustainable development issues as starting points for A2. OCR has more focus on the British Isles for AS but European countries and others at varying levels of development should be studied throughout. IB has no particular country requirements.

Generally, EB is more limited and selective whereas OCR and IB are broader and deeper in their treatment of topics.

The main division in geography is usually between physical and human elements. Physical geography is of less importance than human in the EB covered by only one of the six year 7 themes and the 'encouraged' option of choosing a physical In-depth Theme in Yr 6. OCR and the IB have more balance between physical and human geography. The EB has fewer physical topics than OCR and IB; lacking much content relative to ecosystems, climate and weather, geomorphological processes and landforms.

All have core skills/methodology content. For EB this appears as module 1, which may be integrated or taught separately in Yr6 with some specific elements within the other themes. There is no specific weighting but teachers are encouraged to develop skills in using a variety of resources and fieldwork. However, for both OCR and IB skills should be integrated. For OCR skills form two modules (out of the total six), one for AS and one for A2 with a total weighting of 35%. IB specifies thirty hours of fieldwork to complete an investigation that forms 25% of the assessment.

The EB and IB have no specific weighting for knowledge and understanding whereas for OCR these are 35% and 30% respectively.

All cover a range of scales from local, through regional to global with specified and optional case studies. EB requires fewer case studies but is more specific than the others. IB is the least prescriptive.

All have topic choice within the syllabus however the EB allows more teacher interpretation of what is actually covered within a topic. The EB offers topic choice in Yr6, reducing the actual topics taught, whereas OCR and IB only have choice within limits to ensure more balance and coverage of a range of topics. OCR only has options at A2 after a broad base of knowledge and understanding has been gained. Overall, the EB syllabus is briefly presented with limited development, allowing much range and flexibility of teacher interpretation. Both OCR and IB syllabi have a clearer form with a more comprehensive core, more depth and more teacher guidance. The EB takes a largely socio-economic, political view of the subject whereas OCR and the IB have greater physical, environmental underpinning of their human focused viewpoints.

1.9.3 Doc 1.9

Content Comparison Table – European Baccalaureate / International Baccalaureate

Subject: Geography
Syllabus compared: IB Geography

19. EB syllabus is divided into 3 modules in Yr6 and 5 themes in Yr7. IB syllabus is divided into 3 parts with only teaching hours specified
20. EB core syllabus of 5 themes (Yr7), module one (Yr6), parts of modules two and three. Some optional themes in modules two and three.
21. IB core syllabus of Part 1: skills (integrated but with 30hrs teaching time for fieldwork), Part 2: core theme (90hrs). Four optional themes selected from three sections in Part 3 (120hrs)

EB syllabus content *optional	**Coverage in EB**	**Covered in IB *optional**
Year 6 Core content		
Module 1: Geographical methods (*skills*) ▪ Map reading and interpretation ▪ Aerial photos and satellite images ▪ Graphical techniques ▪ Critical interpretation of different mapping techniques ▪ Sketching ▪ Systems diagrams o *simple statistical techniques o *GIS ▪ Practical fieldwork ▪ Independent data collection, processing etc (hypothesis testing)	Taught as a unit or integrated Fieldwork 'strongly recommended' Statistics apparently only an option but later correlation appears as an expectation	Integrated throughout the syllabus in core and options. *Option themes Contemporary issues in geographical regions and Topographic mapping stress skills and fieldwork. Fieldwork allocated 30hrs teaching time
Module 2: Development studies – *'human' based broad theme (thematic or regional/country studies)* Touches many topics within all four dimensions (environmental, social, economic and political). ▪ Measuring development ▪ Factors contributing to lack of development ▪ Approaches to development (economic, core-periphery etc, sustainability) ▪ Development issues – *options (at least 2 out of 11) ▪ Case studies - 1 large- 1 small-scale Central concept of development	Allows studies of Less Economically Developed Countries (LEDCs) and More Economically Developed countries (MEDCs) Only limited coverage of the topics	Part 2: Core theme of Population, Resources and Development with 90hrs teaching time. Here development focuses on indicators, patterns, issues and sustainability. The linked EB topics are covered elsewhere within IB, in more depth. Population is linked to food supply as a resource and through this to trade and aid. Industry and urban topics are covered in optional themes.

(economic and quality of life/health etc), used as a vehicle to cover elements of environment, resources, trade / poverty / debt, population (linked to food supply, culture, gender), political geography, industry (multinationals, tourism), urban (*mega cities)		
Year 7 Core Content Eurocentric but general teaching guidance is that studies should be in their global context with reference back to Development Studies of Yr6		
Theme1: The natural environment of Europe		
The origin and shape of the land ▪ Tectonics ▪ relief Climate and vegetation ▪ Factors affecting climate ▪ Main climate, vegetation zones Case study of the Alps ▪ Tectonics, glaciation, vegetation and landscape, human impacts Hazards and people ▪ Flooding (Some Yr6 *In-depth units have physical themes relating to climate, rivers, coasts, plates and environments)	Knowledge based. Physical topics in limited terms, content. Only large scale landforms – mountains, shields, major river valleys etc. Only one hazard, rivers/hydrology based Case study allows integration of physical and human elements but very specific. Glaciation becomes a core topic River and coastal landforms and management are only options	*Two (or three) of the four optional themes must be from section A physical themes, offering a wider range of topics (drainage basins, coasts, arid environments, lithospheric processes and hazards, ecosystems and climatic hazards and change) but with none compulsory. No glacial/periglacial environments Emphasis on physical systems, processes and issues, human response, management etc. Range of hazards incorporated where relevant.
Theme 2: Europeans		
Population distribution in Europe Demographic change Migration (with a case study of changing internal migration within one EU country) Case study of inner city problems in one urban area	Standard population topic Very limited settlement/ urban material	Population: Part of core theme Urban: *Optional theme of Settlements combines rural, urban and rural-urban fringe
Theme 3: Industry and energy - change over time		
Europe's industry and energy resources *Emphasis on energy* Industry – past, present and future (with case study of rise and fall of heavy industry) *Includes de-industrialisation, globalisation, changing location*	Non specific on resources Industry mainly as manufacturing with some tertiary Energy a clear topic	Resources: part of core theme. Food as a resource in relation to population. *Choice of one resource to study in detail from water, fossil fuel forest products, so energy is not compulsory. Industry: covered more fully within

factors Energy issues and policies *Includes nuclear debate, alternative energy*		*optional theme Productive Activities: Aspects of Change.
Theme 4: The rural environment		
The variety of rural land use in Europe The changing role of farming ▪ Agriculture as a system ▪ Intensification of farming (CAP, economic and environmental effects, agribusiness and factory farming) ▪ Environmentally sensitive farming (quality of landscape e.g. national parks, organic farming, CAP changes) The rural-urban fringe Villages – types, changing function, structure, population Urban area spread – problems, solutions Changing land use e.g. out of town shopping	Concept of systems Topics of agriculture and settlement (rural and urban) with land use	Agriculture covered more fully within *optional theme Productive Activities: Aspects of Change. *Optional theme of Settlements combines rural, urban and rural-urban fringe
Theme 5: Tourism and transport		
Tourism Compulsory case studies of 2 contrasting areas covering winter (Alps) and summer (Mediterranean coast) with themes o Mass tourism o Effects of tourism o Future of tourism Transport ▪ Comparison of types ▪ Environmental issues ▪ Case study one major project ▪ European policies	Tourism very restricted in areas but these do enable the coverage of main elements Transport enables study of environmental issues	Tourism: Topic within the *optional theme of Globalisation. One of the few cases where a case study is specified – here, Antarctica, so there is some inclusion of cold environments. Also an element of other themes where appropriate. Transport: A topic within *optional theme Productive Activities: Aspects of Change, but also an element of Globalisation and other themes
Theme 6: the European union – issues and challenges		
Regional policies – measuring and dealing with inequalities Includes case studies of problem European periphery and core regions (one of each) E.U. and its trade relations with the less developed world Europe's future	The 'home region' of the European Union is placed squarely at the centre of this theme which focuses on regional differences and economic relations with LEDCs	Regional concept within *optional theme Contemporary issues in geographical regions. Comparison of own local region (usually) with another region of similar scale. Focus more on sense of place and local issues than regional disparity. Trade covered within core and other themes
Year 6 Optional Content		
Themes for in-depth studies (Two to be selected) ▪ Choice from fifteen themes covering	In depth studies in first year of course Teachers are advised to: achieve a balance between	*Optional content involves choosing four themes of which two or three must be 'physical',

wide range of topics such as plate tectonics, rivers, coasts, global climate, difficult environments, environmentally sensitive areas, using oceans, tertiary activities, conflict, China, Russia, emerging economies, industrial change	human and physical geography, avoid case studies from Europe, take an enquiry based approach with research and discussion.	one or two must be 'human' and one or none can be of Topographic Mapping which integrates these aspects and is skill rather than content based.

1.9.3 Doc 1.10

EXAMINATION PAPER ANALYSIS GRID: European Baccalaureate **PAPER: Geography (4 hour option) 2008**
PAPER LENGTH: 3 hours (180 minutes)

QUESTIONS: Answer two out of four (question 1 compulsory) **EQUIPMENT: calculator**

Question	Topic area	Sub-section	Marks	Specific topic	Skills	Knowledge	Understanding	Nature of question * resource based
1	industry and energy	a.i	8	industrial location – motor vehicles	*	*	*	* OS map interpretation photo interpretation knowledge and application off factors of industrial location
		a.ii	5	economic effect of industry		*	*	assessment of effect of industry on economies of EU
		b.i	8	world vehicle manufacture	*			* choice and use of data presentation method (graphical)
		b.ii	9	industrial change	*	*	*	* interpreting tabulated data knowledge of industrial change in the EU and application of this to explaining the changes shown
		c.i	6	oil price changes	*	*		* line graph interpretation explanation of price changes needing knowledge of patterns of energy supply and demand
		c.ii	6	energy policy in EU		*	*	knowledge of energy policy and understanding of role of oil prices
		c.iii	8	sustainable	*	*	*	giving own opinion requiring synthesis based on knowledge and understanding of

2	the Europeans	a.i	5	energy in relation to energy policy distribution of large European cities	*			sustainable energy and the EU energy situation open ended and more discriminatory * description of mapped distribution comment on difference between the distributions of the growing and declining cities
		a.ii	10	as above		*	*	* explanation of differences knowledge and understanding of factors of influencing urban change and the relevant geographical background situations of countries of Europe
		b.1	8	international migration		*	*	knowledge of source regions of migrants to Western Europe understanding of causes of and factors affecting migration applied to explaining why many came to largest cities
		b.ii	12	changes in patterns of migration to EU		*	*	as above applied to explaining changes and specifically asking for values
		c.i	7	urban problems of central areas (CBD and inner city)	*	*		* interpretation of photographs (urban decay/traffic congestion) as stimulus case study knowledge of problems in one specific European city
		c.ii	8	as above		*	*	knowledge and understanding applied to describing and **assessing** attempts of deal with problems
3	tourism and transport	a.i	6	effect of transport (pollution – CO_2 emissions)	*		*	* interpretation of line graphs evaluation of relative importance of transport as a source of CO_2, based on understanding of how changing different sectors contribute to the changing total
		a.ii	12	comparison of main transport		*		knowledge of plus and minus points for road, rail, air and water transport in terms of

				types (economic + environmental)				economic and environmental factors
		a.iii	6	sustainable EU future transport policy		*	*	own opinions based on application of previously demonstrated knowledge and knowledge and understanding of sustainability and factors affecting transport in the future
		b.i	6	changing tourism in the Mediterranean	*	*		* interpretation of map showing symbolic tourism related information with some evidence of change description of changing tourism using map as reference
		b.ii	10	role of tourism in development of EU		*	*	explanation based on knowledge of effect of tourism applied to economic and social development of Mediterranean region of EU
		c	10	sustainable tourism in a European region		*	*	case study knowledge of a European region and its policies for sustainable tourism explanation based on understanding of sustainable tourism and effects of policies
4	rural environment	a.i	5	agricultural landscape	*	*		* photo interpretation recognition and description of arable landscape near Paris
		a.ii	8	arable farming		*		knowledge of positive and negative aspects of arable farming
		a.iii	5	agribusiness		*	*	knowledge of agribusiness and understanding to explain how arable farming integrates into it
		b.i	4	organic farming		*	*	knowledge of organic farming and understanding of values to explain why consumers choose organic products
		c.i	8	agricultural characteristics of EU and new Member States	*		*	* interpretation of tabulated data description of agricultural characteristics of new Member States and comparison with EU understanding significance of data

		c.ii	10	major agricultural problems in EU		*	*	knowledge of effects of new members of EU on agriculture and problems of agriculture own opinions of solutions to problems based on wide understanding of agriculture and development

1.9.3 Doc 1.11

EXAMINATION PAPER ANALYSIS GRID : Abitur

PAPER: Geography als Leistungskusfach 2008 **PAPER LENGTH: 4½ hours (270 minutes)**

QUESTIONS: Answer two out of four 'areas' (all questions within the area) **EQUIPMENT: calculator, atlas, notes**

Question	topic area	Marks	sub-section	Specific topic	Skills	Knowledge	Under-standing	Nature of question * resource based
Area I : Alpine region								
1	natural world (physical features)	20	1.1	glaciers related to water balance and management	*	*	*	* description of line graph – glacier development with time knowledge of processes, role of glaciers in water balances and effect with understanding to relate to water management
			1.2	soils	*	*	*	* interpretation of two soil profiles knowledge and understanding of factors affecting soil development and processes to explain differences between two profiles
2	agriculture	20	2.1	land use: Innsbruck region	*	*	*	* interpretation of composite bar charts from three locations each at three times knowledge of the area and factors affecting land use with understanding to explain the differences and changes
			2.2	organic farming: Austria	*	*	*	* interpretation choropleth map knowledge of organic farming and Austria with understanding to explain the spatially varying percentages of organic farming
3	tourism	20	3.1	seasonal patterns tourism: Austria	*	*	*	* interpretation located graphs, classification knowledge and understanding of types of tourism and Austria to work out and explain characteristic patterns

			3.2	changes with time of seasonal patterns: Austria	*	*	*	* interpretation of bar charts knowledge and understanding of changes in tourist industry and Austria to explain changes with critical analysis of a statement relating to the future
Area II : China in Change								
1	natural world (physical features) and biogeography	20	1.1	climate characteristics	*	*	*	* interpretation of climate graph (monthly temperature/ humidity – 3 stations) knowledge and understanding of Chinese climates to work out which station is which with explanation
			1.2	water management	*	*	*	* interpretation of map of major water transfer projects on Yangtze knowledge and understanding of water supply and demand to explain these measures and resulting problems
2	demography	22	2.1	demographic characteristics of different provinces	*	*	*	* interpretation of table knowledge and understanding of demographics e.g. death rate, natural growth, size household to work out which province is which with explanation
			2.2	rural / urban population change	*	*	*	* interpretation of composite bar chart (rural/urban, 3 age ranges, 3 times) knowledge and understanding of rural/urban migration and natural change to explain population developments and to explain two socio-economic consequences
3	economic development	18	3.1	trade	*	*	*	* interpretation of table imports/exports at two dates knowledge and understanding of trade products and partners to describe and explain trends in foreign trade
			3.2	automobile production industry		*	*	knowledge and understanding of car industry in China and world to explain causes of Chinese car industry development and assess effects on German producers
Area III : Southern Africa								
1	natural world (physical features)	20	1.1	climate characteristics	*	*	*	* interpretation of three sets of monthly temperature and precipitation data knowledge and understanding of climates of Southern Africa to work out which station is which with explanation
			1.2	savannas		*	*	knowledge and understanding of savanna vegetation and

								effects of human activities to explain causes for disappearance and natural and economic consequences
2	population	22	2.1	population structure and changes	*	*	*	* draw one population pyramid to show population for two years in Botswana from data knowledge and understanding of population characteristics to write and bring out the changes
			2.2	population change		*	*	knowledge and understanding of AIDS and population change to explain economic and social consequences
3	development	18	3	newly industrialised countries NICs	*	*	*	* analysis and synthesis of 5 sets of tabulated data on GDP, income, exports, HDI and components of HDI for 3 countries and S Africa knowledge and understanding of NICs and S.Africa to discuss and evaluate extent to which S.Africa is a NIC
Area IV : Water as a Global Resource								
1	precipitation and water availability	20	1.1	latitudinal variation in precipitation	*	*	*	* interpretation of line graph knowledge and understanding of model of global circulation and atmospheric processes to explain precipitation patterns
			1.2	water resources		*	*	* knowledge and understanding relating to hydrological and other processes to explain why not all precipitation is available as supply
2	water management and economics	20	2.1	soil water budget	*	*	*	* interpretation of water budget graph knowledge and understanding of soil water budget and climate types to assign the budget to a climate, describing and explaining the annual pattern
			2.2	management : dams		*	*	knowledge of own choice case study of major dam understanding to explain reasons for the dam and (assess) consequences of building
3	problems of water supply	20	3.1	water situation	*	*	*	* interpretation of table of water poverty index (WPI), 3 countries knowledge and understanding of HDI and WPI and 3 countries to work out and explain which country fits which WPI

				world supply and demand of drinking water	*	*	*	* interpretation of bar graphs knowledge and understanding of world water supply and demand and effects of changes to describe the forecast changes and explain (assess) two resulting problems

1.9.3 Doc 1.12

EB- French Baccalauréat
Geography

(Roger-François Gauthier, 2/10/2008)

This comparison focuses on geography at EB 4 periods to geography in the French bac in "série" ES i.e. "social studies".

1. Curricula

1.1 1.1. Geography in the EB

The curriculum of geography 4 periods in the EB is the following in 6th and 7th years:
In the 6th year, this includes:

One module about methods in geography, one module made of two advanced studies to be chosen out of 15 topics (one semester);

One module about development that covers the second semester

In the 7th year, the whole curriculum is focused upon the European Union, the study being divided into 6 themes:

1. Natural environment of Europe;
2. The Europeans;
3. Industry and energy;
4. Rural areas;
5. Tourism and transport;
6. The European Union: stakes and challenges.

Each theme is presented into two columns, one being a list of content (with the indication of some study cases), the other called "competences, models and theories", with very few competences listed but many theories referred to.

1.2 1.2. Geography at French baccalauréat

In France, teaching of geography (and assessment in geography as well) is always linked with history.
The curriculum is almost the same in all "series" and compulsory at least for all students of the academic baccalaureate (for technological bac too, but with a shorter curriculum): the place of History and Geography in the curricula is consequently large.

In "série" ES, students have 2 hours (of 55') of geography per week.
The curriculum of the previous year (called "première") is about Europe and France.
The curriculum of "terminale" is août the "global space", and the bac test is only about the "global space".

This curriculum is divided into:

1. part one (about 10 hours): global, interrelated and other logics of organization of the global space;
2. part two (about 22 hours) : the three power areas in the world : Northern America, European Union, Eastern Asia;
3. part three (about 18 hours) : developing worlds.

The reality is different: not more than 36 hours of geography during the year.

The curriculum is written up as a list of chapter headlines and a short text that may appear as an abstract, in 4 lines, of the content of each chapter.

1.3 1.3. Comparison:

EB: more attention specifically paid to geographical methods and tools, in 6th form;
Comment: these topics are studied in France in the previous year ("seconde");

EB: global geography studied in the 6th year in a non –systematic approach: 2 themes chosen among more than 15. Students can sit for the bac having only studied 2 very limited topics (ex: the Watt, taken from the theme "protected zones"; Cyprus, from the theme "borders")

EB: development deeply studied for itself as a theoretical question

In 6th year, EB curriculum provides much less comprehensive coverage of the subject domain and adopts a more theoretical approach about the topics that are studied in France in the last year (global geography and development).

EB: a strong accent on Europe. In the 7th year, but studied as old nations are generally studied in textbooks: physical geography, climate, vegetation, population, resources, etc.

This is obviously an interesting perspective, but it seems:

- rather artificial, and "voluntarist"; a heavily idealised Europe? For example, states are not mentioned;
- partial, as Europe is not seen as a political puzzle of states and no specific European country is approached for itself (only sub-regional aspects).

EB: still very abstract perspective, with a lot of models and theories.

France: very few theoretical references;

France: an official description of the world that leaves little room for teacher's interpretation.

This is just a curricular approach, that we are going to complete by an assessment approach, but:

- as to theory, we can expect EB laureates to be well trained (but we would like to check if theory is not for them too… theoretical…);
- as to the content, the impression is of an ideological more than of a scientific approach of Europe , and of a severe gap as to knowledge about the world, due to both too flexible approach of content in 6th year and too abstract an approach to ways of presenting reality.

1.4

2. 2. The test itself

2.1 2.1. Within the French bac:

2.1.1. In general

The type of test is the same in the three academic channels, the difference for students of ES série being principally a difference in weighting factors (the "S" students have a specific QP but conform to the overall definition).

According to official texts (common to Geography and History), three objectives for this test:

1. To assess candidates' abilities to mobilize the notions and concepts of the curriculum, that are necessary for understanding contemporary world, and for civic and cultural citizen's aptitude.
2. to assess acquired competences in processing and organizing historical and geographical data in a hierarchy, and in reasoning from a historical or a geographical point of view;
3. to assess the ability of the candidate in writing and mastering argumentation.

Test lasts 4 hours, but at the most, half the time will be dedicated to Geography. There has been a secret decision, made by the recteur that determined whether History or Geography would be the subject for the first part of the test, or for the second part.
In the first part (12/20 points) the candidate can choose between 3 proposals, i.e. two "compositions" and one study from a set of documents.
In the second part (8/20 points), he chooses between 2 historical documents to be explained (if History), and two geographical sketches.

First part of the test, if "essay", requires a problematic; data can be provided and the candidate can if needed produce sketches.
If a study of a set of documents, the capacity to build a coherent reasoning to deal with the question will be assessed. The problematic must appear in the question paper. Five documents maximum, in black and white. The candidate has to:

1. to analyze, including critically analyze, the set of documents while answering questions. Five questions maximum,
2. to write up an organized answer starting from this preparatory work

Second part If geography, starting from a question, the candidate draws a sketch together with an organized legend. The candidate will be provided with an outline map.

Remarks: there is always an essay to write up in the first part, or something equivalent, centrally or not. But this essay can be either in Geography or in History. If in History, the test in Geography is just a sketch to produce starting from an outline map.

2.1.2. 2008 session:

First part in History
Second part: choice between "Norths and Souths", with an outline map that is just a planisphere and "Russia: populating and development" with an outline map of Russia. One page left for the legend to be made and organized.

Comment: this exercise does not give any indication about what should be done, and needs specific preparation to attend to the internal logic of the activity.

2.2 2.2. At EB, in general and session 2008

At the E. baccalaureate, the test lasts 3 hours, the students have to deal with two "questions", one being compulsory (about one theme chosen one year before), one to be chosen among three other questions, each about one other theme of the list.

Each year two themes are not assessed, but the specifics of what will be included are not known by students.

- Compulsory question : in 2008 : "Industry and energy", the question being formulated : "changes over time", with 7 sub-questions (50 points)
- Other questions out of three, relating each to one different part of the curriculum: "the Europeans", "Tourism and transport" and "the Rural Environment", with respectively 6, 6 and 7 sub-questions. (50 points)

First part: 7 sub-questions, 5 documents (Map of Honda motor vehicle Works –UK, Photograph of the same factory, figures of the regional share of motor vehicle manufacture, car production data figures, graphic with the changing price of oil): most of sub questions are referred to a specific document. The indications are: describe (2); explain (3); answer (in what ways? - 2 times); illustrate; propose; justify.

Second part:

- The Europeans, 6 sub –questions, 2 documents, one map and two photographs (related) : "describe", "explain", "answer" some very precise questions that are not

asked from the docs, although linked with them. The two photographs are just starters. Invitation to take one example…

- Tourism and transport, 6 sub-questions, 2 docs, one histogram about emissions of CO2, and one map about International tourism in the Mediterranean in 2004: evaluate, present arguments, describe, explain…. Invitation to take one example…
- The rural environment: 7 sub questions, 2 docs, one photograph, and figures with selected indicators for agriculture.

The weighting given to the different questions differs from 5 to 9 in the first question, from 5 to 12, 6 to 12, 4 to 10 in the others.

Each student has to answer between 13 or 14 sub-questions in two sets:

- No question appears more important than others : the place given to the writing of an essay is consequently limited;
- Each sub-question is rather independent one from the other;
- The structures of the two “questions” are rather similar.

2.3 2.3. Comparison

EB: the curriculum is better covered, by two questions for each candidate, and plenty of sub questions;

EB: no real essays or synthetic questions, but many short sub-questions checking the ability to observe, checking knowledge, checking capacity to evaluate an issue and to propose solutions: the question papers are considerably more theoretical than the curriculum;

EB: drawing maps, and writing up legends is not requested;

Conclusion, before examining the scripts: in geography, at EB, the test is:

- a rather redundant coverage of the curriculum, giving twice the same exercise, as to the checked skills at least;
- as the curriculum is highly restricted (see before : limited to Europe , and with a limited conception of European geography), the question paper covers a great part of it,
- the theoretical ambition of the curriculum does not appear anymore in the QP;
- the student is almost never autonomous, but checked 15 times with a lot of prescribed and sometimes narrow tasks to do;
- the marking system is very explicit; there is a marking sheet full of pieces of advice for the examiners;
- some important geographic tools are not requested.

3. 3. The scripts and their marking

3.1 The French scripts:

- Scripts having 19/20 in History+ Geography together (no specific identification of the mark in geography : in the official texts, it is said that this part of the test is marked out of 8, this 8 being out of 20 in the complete test including History; one can just hope the examiner has respected the allocation of marks): Out of 5 excellent scripts , 3 have chosen “Norths and Souths”, and 2 “Russia”; out of 5 scripts marked just above 10/20, the allocation is the same; out of 6 scripts marked just under 10:/20, none has chosen Russia, and out of 5 scripts marked under 3/20, just one has chosen Russia, but with a total misunderstanding of the question paper (the map of the USA on an outline map of Russia!).
- To summarize, the question about North and South has been taken by 76% of the 21 scripts of the sample, and Russia has been chosen by the best students.
- It is observed that in the best scripts, there is obviously a real mastery of the curriculum, an ability to present very synthetically the problematic and the main issues

in the legend of the map (one page, divided into 3 parts, giving the structure of the study), and a mastery of that specific tool in geography that is a map.

- In the scripts marked above the average the defaults are: a good legend, with a real problematic, but an inability to draw the map correctly; a legend more descriptive than problematic (the examiner asks: “what does that mean?”); rather big gaps in knowledge.
- In the scripts under 10/20, the question is dealt with very superficially (both map and legend), although information provided is not incorrect. The examiner underlines problems of method.
- In the worst scripts, the marks are very bad, in a “série” where the weighting factor of History and Geography is very high (x5) there is nothing to say, the question is not dealt with : the point is that I cannot know whether at the end the candidate has passed or not.

Marking

As to the marking scheme, the enforcement of which I can check in these scripts, the impression is that:

- The judgment of the examiner does not seem irrelevant : the differences between the four sets of scripts are obvious, although the reasons for the scripts to get under 10/20, for instance, are of course various;
- The fact that we have just an overall mark H+G is not satisfactory, as we can wonder for instance if the examiner is not influenced by his/her judgment about the historical part of the script when he/she begins the geographical one. A separate marking, at least the necessity to clearly identify each subject should be introduced.
- There is just one examiner: the scripts are not well marked, but seem very seriously evaluated, as the examiner writes down a lot of comments on the paper itself.
- There is no eliminatory marking: one can wonder if it is acceptable to give the exam to a candidate who obviously ignores everything in geography and does not hesitate to put Boston in Eastern Siberia…But we can argue that in the EB such a candidate would not have chosen Geography (that is compulsory at French Bac).

3.2 3.2. The EB scripts

The impression is that of long scripts, long texts, showing the ability of students to make a protracted effort in writing.

The question paper requested the production of some pie charts or bar charts: when they have not been produced, and replaced by a text there is no obvious sanction. The calculator was permitted, but the students seem not to have used it to produce the very rough graphics in evidence.

Obviously the abundance of questions is a help for students who are not very skilled but who can try to answer all the questions, and get some points from this accumulation: the absence of very bad marks is the perhaps a consequence of this structural feature of the assessment. These students are not required to write up autonomously an essay: in the French exam, they will be more penalized.

If a very precise number of points are attributed to each sub-question, the marking inside each sub-question is opaque. May be here a clear marking would be more necessary: if the scripts lacks this or that information, what is the consequence in terms of marking?

The double marking of the scripts is more a factor of opacity than other: whereas the scripts at French Bac are commented in details by the examiner, at EB the absence of any mention may open the door to some subjective attitude that the double marking should have eliminated.

The gaps between the two examiners are often above 1 point/10, but the scale used is very short:

French test: from 3/20 to 19/20 i.e. 4/5 of the scale;
EB: from 5/10 to 9.2/10 before double marking, from 5.7 to 8.85 after, i.e. less than 2/5 of the scale.

3.3 Conclusion:

Compared to the assessment of Geography at French Baccalauréat, assessment in Geography at EB:

- Has a poor curriculum in 7th year; students concentrated on European Union only. Not acceptable;
- Assessment that does not test nor encourage the autonomy of students; a test divided into too many short sub-questions;
- Assessment that is redundant and that has not integrated the logic of being nothing but a survey, a relevant drilling.

1.9.3 Doc 1.13

Geography Syllabus structure

Higher level

Application of skills at HL for Core 1 and Core 2

- Map reading
- Aerial photograph interpretation
- Satellite imagery.
- Figure interpretation, figs., graphs, tables etc.
- Census of population data.
- Weather maps and weather data.
- Textual and Secondary sources.
- G I S.

Skills required for the G.I.

- Map interpretation.
- Photograph analysis.
- Statistical analysis.
- Information technology applications.
- Geographical information systems.
- Planning a geographical Investigation.
- Data collection.
- The use of documentary sources.
- Report planning.
- Analysis and presentation of results and conclusions.

The LC course is spread over 2 years. There is no particular order in which the work must be done.

Core units 1, 2 and 3 are compulsory

Core Unit 1 - Patterns and processes in the Physical Environment

- To show a detailed understanding of the theory of plate tectonics.
- To understand how crystal structures are created, modified and destroyed by the tectonic cycle.
- To explain and illustrate the continual process of rock formation, change and destruction.
- To explain and illustrate how landforms develop from the interaction of the tectonic cycle, rock cycle and surface forces.
- To illustrate how landforms represent a balance, through time, between endogenic/internal and exogenic/external forces.
- To access at different scales, the impact of human activity on the physical processes at work on the landscape.
- To understand and use the skills listed to interpret the physical environment.

Local, national and international settings should be used.

Core unit 2 - Regional Geography

- To explain and illustrate, at different scales, the concept of a region as identified by selected criteria.
- To show a detailed understanding of how physical, economic and human processes interact in Irish and European regions and in one continental/ sub continental region.

- To assess the complexity of this interaction and the potential for change in the boundaries and extent of regions using specific examples.
- To use the skills listed, where possible, to interpret hoe economic, human and physical processes interact in a regional setting.

Students should focus on five regions, two contrasting regions in Ireland and two European regions. In addition, one continental/sub continental region.

Core Unit 3 - The Geographical Investigation

- To understand, use and apply the skills listed to complete a geographical investigation.
- To work through the distinct stages of a geographical investigation.
- To use statistical analysis and information technology in the interpretation and analysis of results and conclusions.
- To analyse and evaluate their work and make comparisons with other studies.
- To experience, where possible, working conditions similar to those likely to be encountered in the world of work.

The lay out to be;

- Introduction/ hypothesis/ aims.
- Planning
- Collection of data. Two different methods required.
- Results, conclusions and evaluations.
- Presentation of results on a variety of charts.

Electives

Students should study ONE Elective.

Elective Unit 4 - Patterns and processes in Economic activities.

- To explain and illustrate the uneven patterns in the distribution of economic activities and levels of economic development.
- To show a detailed understanding of the complexity of the process of change in levels of economic development.
- To analyse the issues arising from and impact of the development of a single independent global economy.
- To assess Irelands role as a member of the EU within the global economy.
- To assess the environmental impact of economic activities at different scales.
- To use he sills listed to assist in the examination of patterns of economic development and the growth of a single interdependent economy.

Local, national and international settings to be used.

OR

Elective Unit 5 - Patterns and processes in the Human Environment

- To show a detailed understanding and be able to illustrate how population characteristics change over time and space and impact on human development.
- To assess and evaluate the varying impact of population movements.
- To examine in detail patterns of rural and urban settlement.
- To identify and analyse the differing scale of problems associated with the growth of urban centres.
- To use the skills listed to examine the dynamic nature of population and the pattern and distribution of settlement.

Local, national and international settings to be used.

OPTIONS

Students should choose from ONE of four Options.

Optional Unit 6 - Global Interdependence.

- To evaluate the differing views of development and underdevelopment.
- To show a detailed understanding of the interdependent nature of the Global economy.
- To assess the impact of current economic patterns on developing economies or regions.
- To discuss human development as a focus for change.
- To examine the idea of sustainable development as a model for the future.
- To use the skills listed to examine the interdependent nature of global economic, social and political processes to challenge the differing views of development.

Local, national and international settings to be used.

Optional Unit 7 - Geoecology.

- To explain and illustrate the development of soils.
- To describe the combination of processes affecting soil characteristics.
- To assess the inter relationship between soils and climates resulting in Biomes or global regions where plants and animals have adapted to specific environmental conditions.
- To examine and evaluate the impact of human activities on biomes. To use the skills listed to examine the inter relationships, on a global scale, between soils, climates, plants and animals.

Local, national and international settings to be used.

Optional unit 8 - Culture and identity

- To recognise ethnic groupings as a classification of population.
- To examine language as a cultural indicator.
- To examine religion as a cultural indicator.
- To discuss nation states as political entities on the physical and cultural landscape.
- To assess the complexity of relationships between political structures and cultural groups.
- To use the skills listed to examine issues related to culture and identity.

Local, national and international examples to be used.

Optional unit 9 - The Atmosphere-Ocean environment

- To observe and be aware of the measurement of the characteristics of the atmosphere-ocean systems.
- To show an understanding of the uneven distribution of solar energy and the circulation patterns of the atmosphere and oceans.
- To examine the variations in the exchange of water between the oceans and the atmosphere and the resultant weather and climate patterns.
- To trace the circulation pattern of the oceans and the atmosphere and the impact on weather and climate.
- To describe a climatic environment on the earth.
- To assess the influence of climatic characteristics on economic development.
- To use the sills listed to examine the dynamic relationship between the oceans and the atmosphere in influencing global climatic patterns.

Local, national and international examples to be used.

1.9.4 Doc 1.1

Comparison of the EB L1 and the International Baccalaureate Language A2, Higher Level

Overview

The EB qualification is designed for native speakers working in their own language. The IB qualification can be for a 'native or near native speaker wishing to study a different language as his or her language A1.' This means that in the IB qualification there is a notional target language (as there would be in A level Modern Foreign Language study) and that skills and levels of achievement in reading, writing, speaking and listening would probably be judged on a lower level than those required by native speakers.

The IB qualification is, in effect, a second language qualification, albeit at a high level. Achieved at high level, it looks to be equivalent to a very good pass in a Modern Foreign Language A level, possibly slightly higher for someone for whom the course has genuinely been in a foreign language, significantly lower for someone who is of near native competence.

Without looking carefully at examination papers and worked outcomes, it is not possible to judge whether IB achievement in HL papers is equivalent to that of the EB.

The aims and objectives of both the IB and the EB are virtually identical. However, the IB specification bears strong resemblance to a GCSE English specification in terms of tasks set. In particular, the literary texts suggested are very clearly the sorts of works that would appear on a GCSE specification -- straightforward, with plot and character being the main areas for study, not literary technique. Moreover, as in a MFL A level, there is no requirement on candidates to take the 'literary' option in the examination, though they do have to produce course work that deals with literature.

Quick comparison of IB Language A2 suggests that it might have more in common with EB Language 2 than with EB Language 1

Principal Differences/ Similarities

In both there is an oral examination.

Candidates in the IB are not obliged to have read a play by Shakespeare, nor do they have to demonstrate knowledge of literary texts over time. Both call for study of a wide range of texts of both literary and non-literary types. In the IB literature option, students must choose works from two genres.

Both EB and IB include 'cultural options' which oblige candidates to think about a range of texts in a thematic way.

The IB does not emphasise Knowledge about Language explicitly, though it is plain from p14 that the course will usually include much more 'language teaching' than would be expected in a first language course such as the EB: the teaching of vocabulary, idiomatic expression and grammatical structures in the classroom suggests a notionally lower level of understanding amongst typical IB A2 students. The IB allows the possibility of study of contextual variation, language change and comparative linguistics, but it is only an option 'to gain greater familiarity with the target language.' Again, a term like 'target language' suggests that typical candidates are not native speakers.

Assessment Model

Oral examination

Both have oral examinations, based on a variety of tasks. The IB oral (30% of total) centres on material studied in class: candidates have two sessions, one working on an individual basis with a teacher where they talk about a text prepared in class (15 minute session, 20 minutes preparation time), and the second working as part of a group. The two EB orals (24% of total) include unprepared material with 20 minutes of preparation time.

Both IB and EB oral examinations could be tackled by native speakers as well as L2 speakers. The free nature of the tasks means that standards could only be compared by hearing recordings to see how fluent and organised candidates have to be to get bottom/ middle/ top marks. The grading criteria for both IB and EB are similar. The IB Language 2 clientele of second language speakers might suggest that high marks could go to candidates performing at lower level than might be expected from native speakers.

Course Work

Candidates for the IB have to produce two pieces, each worth 10% of the total assessment. Tasks set for the IB allow the possibility of writing in a number of different styles and genres. One must be based on literary texts. Candidates for the EB gain 40% of the total assessment from 'preliminary marks': these are made up of marks for class work and class examination. The specification does not outline what these assignments/ exams should comprise, though they are one way by which the course requirements are policed. IB course work is precisely laid down.

Written Papers

The EB paper consists of one paper, four hours long (36% of total assessment), that asks candidates to look at an unseen passage and then write an essay on a topic using knowledge of literary texts as the basis for the argument.

IB candidates write two 2-hour exams (25% of total each). The first exam compares passages. This is notionally harder than the assignment for the EB because it includes comparison and passages could be from a wide variety of sources.

The second exam is provides an opportunity for candidates to write on a theme, displaying knowledge about language, culture, media or literature. The potential scope here is broader than that required by the EB paper because it is not confined to literature and the candidate's personal opinion.

Mapping Table – European Baccalaureate / OCR A Level and IBD
Subject: English
Syllabus compared: OCR English Language and Literature

22. Complete the first column with a detailed list of the topic areas covered in the European Baccalaureate syllabus.
23. Insert a tick, or similar, to show where the topic is covered by the comparator specification – please delete option columns if there are no options.
24. Include comments to describe where a topic is covered in greater depth in one or other specification, where possible estimate how much time it would take to deliver the extra depth.

EB syllabus content	Present in core of comparator	Covered in greater/ less depth in EB	Covered in greater depth in OCR English Lang/ Lit
Oral work	No	Yes	
Reading			
Writing from different periods	Yes	EB tests through unseen literary passage	Yes: more in OCR Tested through both literary and non-literary passages in all units except 2714
Play by Shakespeare	Yes	Less depth here: General questions, not compulsory in examination	Yes, more depth in OCR: specific questions asked, compulsory to answer
One pre-20th century text	Yes	Not tested in examination	Yes, more depth in OCR: specific question asked, compulsory to answer on Papers 2715 and 2717
Variety of works from different genres	Yes	Tested by comprehension exercises or commentary on unseen passages.	Tested by a wider variety of methods which ask for language analysis/ reworking in all units. Questions on texts demand greater awareness of language and strategy rather than content
Thematic work Year 7	Yes		2718 Coursework focus on 'The Language of…'
Personal reading programme	Yes	Not assessed in terminal examinations, questions refer to texts studied, not wider reading	Required in coursework units/ synoptic unit
Other literatures		Yes, stronger notionally here as candidates are supposed to exploit links with other literatures, presumably in other languages.	
Writing			
Write accurately	Yes		
Write effectively to instruct, describe, argue, explore, entertain	Yes	Examination only tests argumentative writing	2716 tests writing in two different styles, literary and non-literary; candidates have to explain choices in commentaries
Write with understanding of Literature and critical sources	Yes		OCR not compulsory to use other sources, though advised
Describe rhetorical devices	Yes		All units

Plan and draft in limited time	Yes		
Write Summaries	No	In syllabus but not tested in examination	
Knowledge about Language			
Theoretical Frameworks	Yes	Phonetics; frameworks may or may not be alluded to	Compulsory demonstration in all A2 units, but candidates can choose frameworks
Contextual variation	Yes	Not compulsory in examinations	All units except 2714
Language change	Yes		
Comparative Linguistics	No		CW allows this as a possibility
Regional accents and dialects	No		OCR C/W allows this as a possibility
Comparison of Assessment Objectives			AO1 insights from combined Lang/ Lit study, not in EB
			AO3ii Use and AND EVALUATE literary and linguistic approaches to texts. Not explicitly in EB spec Discussion of spoken language
		Candidates asked to give own opinion about issues, not only about what they have read, so more a test of personal writing, less a test of textual understanding	AO5 Questions ask candidates about ways in which attitudes and values are conveyed. Not explicit in EB spec
			AO6 Candidates write for much wider range of specific purposes drawing on texts and commenting on language features than in EB examination
			AOs 2.1, 3.1, 4, 5 are all covered in various EB range and key skills statements, EB syllabus page 15 and 16

Content included in OCR English Language and Literature but not in EB syllabus

Please list any topics that are included in the A Level / IBO specification but not in the EB syllabus…

49. **Study of spoken language/ spoken language as 'texts'**

50. **'Creative writing' in a variety of genres**

Comparison Table for comparison of assessment models

Use this table to make direct comparisons between the syllabuses in the following areas:

26. structure of the assessment model, including the format of assessment for the specification/syllabus
27. whether coursework is assessed, the kinds of coursework assessed and contribution to overall grade
28. whether oral assessment is part of the assessment model, and the extent and format of oral assessment
29. whether the assessment model is unit-based or requires candidates to take a synoptic view of the topics, and to what extent

NOTE: the prose commentary on the assessment models should draw attention to significant differences in the requirements for the European baccalaureate and A Level or IB.

	European Baccalaureate	**OCR GCE A Level**
Assessment structure, format and timings	Candidates take 5 units for the one two in English which suggests that 20% of curriculum time is given to English in Year 6-7 Final examination represents 36% of total assessment Language 1 4 hours Practical Criticism : analysis of poetry or prose Comparison of two previously studied literary texts	Candidates do four AS levels normally, so 25% of curriculum time devoted to English Candidates do three A levels so 33% of curriculum time devoted to English AS Level Year 6: Course work and examination Unit 2714 Linking Language and Literature 1 hour 15 mins (AS 30%/ A2 15%). Comparison of spoken/ written language Unit 2715 Language in Literature Poetry and Prose, 1 hour 45 mins (AS 40%/A2 20%. Close analysis of two studied texts, passage based A2 Year 7 Course work and examination Unit 2717 Language in Literature: Drama, 2 hours (A2 15%). Close analysis of two studied texts, including Shakespeare Unit 2719 Experience into Words, 2 hours 15 minutes (A2 20%). Texts for comparison/ re-working/ critical commentary
Coursework assessment	None though 40 marks out of subject total for class marks and class examinations	AS 2716 tests writing in various forms and ability to comment on language strategies, internally assessed, moderated by board 30% of AS/ 15% of A2 A2 2718 tests thematic work, language over time, ability to construct argument with lang and lit texts. Internally assessed, moderated by board. 15% of A2

Oral examination	Two examinations, twenty minutes each, content not specified in specification but candidates given unseen question with 20 minutes preparation time.	None
Synoptic assessment	Syllabus claims that Year 7 examinations will also test 'knowledge gained in previous years.' The papers themselves do not 'police' this requirement	Paper 2719 is a synoptic unit demanding knowledge and understanding from all areas of the specification

General Comments

In general, the examination does not 'police' the specification requirements, so it has to be assumed that the range required is supervised and enforced by teachers when planning their courses.

On the whole, the specification has many similarities with the OCR English Language and Literature specification, but the general nature of the questions suggests that there is less stretch and challenge to the EB specification. Certain aspects of the OCR specification (Creative Writing/ Knowledge of conventions of spoken language) are completely absent from the EB specification.

Commentary on examination scripts

In the EB examination, there is no obligation (though they may be discussed) to cover texts before 1900 or to write about poetry, the novel or Shakespeare. Candidates do, however, show knowledge and understanding of 'significant' important texts such as *Paradise Lost, King Lear* or *Middlemarch.* Essays comparing literary texts are phrased in terms of issues not techniques, so candidates are encouraged to respond in terms of character, theme, not strategies. In the examination there is no direct instruction to compare across genres as there is in OCR Lang/ Lit 2714, 2719 or 2718 coursework.

Personal response and what candidate feels about a text is much more highly rewarded than in OCR units: essays invite literary texts to be used as springboard for more general, non lang/lit response to the issue of, for example, crime and punishment. Questions do not have explicit language or literature focus, and candidates can spend either a lot of time or, in some cases, very little, talking about the texts that back up their argument about the issue as a whole. In some cases, texts chosen strain to fit with the announced topics.

Knowledge about Shakespeare:

Because Shakespeare is not an obligatory part of EB examination answers and candidates are in any case obliged to *compare* texts they have read, there is a significant difference in EB candidates' depth of knowledge of the plays studied which would keep them well away from A level Bands 1 and 2 in the examples seen.

Knowledge about drama, the short story, autobiography, travel writing.

This is part of the specification for the EB, but is presumably tested through the Preliminary marks and Class examinations. There is no prohibition on talking about these elements in the second part of the examination paper.

Knowledge about Poetry

Although in the EB this can be tested through "practical criticism' on the exam paper, there is no compulsion to do that question.

Knowledge about Novel

This can be tested on the exam paper, but candidates choose which texts to write about, so might choose not to include the novel.

Knowledge about variety of genres

Although it is in the specification, there is no invitation in the examination to talk about genre/ genre conventions or compare genres. Passages selected offer range of genre, but of a literary type – no speech, journalism, multi-media.

Mapping Table – European Baccalaureate /and international Bacc **Subject: English**

Syllabus compared: International Baccalaureate, Language A1

25. Complete the first column with a detailed list of the topic areas covered in the European Baccalaureate syllabus.
26. Insert a tick, or similar, to show where the topic is covered by the comparator specification – please delete option columns if there are no options.
27. Include comments to describe where a topic is covered in greater depth in one or other specification, where possible estimate how much time it would take to deliver the extra depth.

EB syllabus content	Present in core of comparator	Covered in greater/ less depth in EB	Covered in more/ less depth in IB Language A1
Oral work			Specific prepared literary topics, likely to lead to greater display of knowledge and understanding of texts
Reading			Range of literary texts much larger with IB
Writing from different periods	Yes	Non-literary writing covered in more depth	
Play by Shakespeare			
One pre-20th century text			Requires texts from three different time periods
Variety of works from different genres			Requires 4 genres, but they all have to be literary
Thematic work Year 7			HL requires relationships between texts to be explored
Personal reading programme			
Other literatures			A compulsory part of IB
Writing			
Write accurately	Yes		IB only covers accurate writing in relation to scholarly writing about literary texts
Write effectively to instruct, describe,	Yes		IB only deals with argumentative writing about

argue, explore, entertain			literary texts
Write with understanding of Literature and critical sources	Yes		As candidates for IB have to study many more texts than those for EB, it can be assumed that their grasp and depth of reading is wider
Describe rhetorical devices			IB only in terms of literary texts
Plan and draft in limited time	Yes		An examination forces this in both IB and EB
Write Summaries	No		
Knowledge about Language			
Theoretical Frameworks	Yes		Limited to critical appreciation of literary texts
Contextual variation	Yes		
Language change	No		
Comparative Linguistics	No		
Regional accents and dialects	No		
Comparison of Assessment Objectives			All of the below likely to be in more depth in terms of literary understanding but over a more limited range of text types than in EB
			Understanding thought and feeling expressed in text Paper 1, both parts
		EB does this over a wider range of texts because of non-literary	Personal Interpretation of the text Paper 1, both parts
		Less depth because fewer texts	Appreciation of Literary features Paper 1, both parts; World Lit assignment
			Organisation of material Paper 1, both parts; World Lit assignment
			Formal use of Language Paper 1, both parts; World Lit assignment
			Knowledge and understanding of (literary) works Paper 1, both parts; World Lit assignments
			Response to the question paper 1, both parts; World Lit assignments
			Selection of wider reading topic, World literature assignment

Content included in International Baccalaureate but not in EB syllabus

Please list any topics that are included in the A Level / IBO specification but not in the EB syllabus…

51. **World literature: 'broaden students' perspective through the study of works from other cultures and languages'**

52. **15 literary texts, up to 5 of which can be world literature, studied in translation**

53. **'Creative writing' in response to literary texts is possible as a course work assignment**

Comparison Table for comparison of assessment models

Use this table to make direct comparisons between the syllabuses in the following areas:

30. structure of the assessment model, including the format of assessment for the specification/syllabus
31. whether coursework is assessed, the kinds of coursework assessed and contribution to overall grade
32. whether oral assessment is part of the assessment model, and the extent and format of oral assessment
33. whether the assessment model is unit-based or requires candidates to take a synoptic view of the topics, and to what extent

NOTE: the prose commentary on the assessment models should draw attention to significant differences in the requirements for the European baccalaureate and A Level or IB.

	European Baccalaureate	**International Baccalaureate**
Assessment structure, format and timings	Candidates take 5 units for the one two in English which suggests that 20% of curriculum time is given to English in Year 6-7 Final examination represents 36% of total assessment Language 1 4 hours Practical Criticism : analysis of poetry or prose Comparison of two previously studied literary texts	Two examinations, two hours long, each 25% of total assessment 1 Unseen passages 2 One lengthy essay on one of the genres studied: must cover two texts, previously studied or response to one of four general questions, not genre specific
Coursework assessment	None though 40 marks out of subject total for class marks and class examinations	Two assignments of 100-1500 words on English and World Literature, 20% of final assessment. Both are done as 'independent study 1 Comparison of two texts: originally in English 2 Comparison of two texts one originally in English, one World Literature

Oral Work	Two examinations, twenty minutes each, content not specified in specification but candidates given unseen question with 20 minutes preparation time	Two examinations, fifteen minutes each. 30% of total assessment Each deals with ONE literary text studied in class First focuses on passage from text studied, candidates given 15 minutes preparation time Second examination is the presentation of a topic on text previously studied, can be delivered to a teacher or to a group of peers
Synoptic assessment	Syllabus claims that Year 7 examinations will also test 'knowledge gained in previous years.' The papers themselves do not 'police' this requirement	No statements about this in specification

General Points

The IB course is a Literature, not a Language and Literature course. The way that the specification is set up suggests that candidates will be required to study texts in a more focused, literary way that in the EB. Criteria for marking intimate that the IB places higher emphasis on literary techniques and strategies than the EB. As the syllabus is generic, without set books, there is no evidence of the challenge of the books chosen, though it is likely to be 'canonical' and with the emphasis on books widely recognised to be worthy of post 16 study. In terms of a comparison of standards between EB and IB I would suggest that the IB's standard is probably higher, though over a narrower range of types of texts. Certainly the mark criteria suggest that much more emphasis is given in the IB to matters of formal literary criticism.

Commentary on examination scripts

No IB scripts have been seen for comparison purposes. The Assessment Criteria for the IB suggest that to get high marks candidates would have to show strong skills in formal use of language, precisely used, together with good understanding of how literary texts create meanings in a variety of ways. There would also need to be evidence of independence of thought and some understanding of others' views of a text.

Knowledge about Shakespeare:

Although candidates are not required to have knowledge of Shakespeare in the IB, many will study at least one play by Shakespeare

Knowledge about drama, the short story, autobiography, travel writing.

This is part of the specification for the EB, but is presumably tested through the Preliminary marks and Class examinations. There is no prohibition on talking about these elements in the second part of the examination paper. The IB does not require a range of texts outside the formally 'literary.'

Knowledge about Poetry

In the EB this can be tested through "practical criticism' on the exam paper. There is no compulsion to do that question. IB also has unseen passages (paper one) and poetry is a compulsory part of the comparison, thus testing candidates' 'feel' for poetry, which could be argued to be synoptic.

Knowledge about Novel

In the EB, this can be tested on the exam paper, but candidates choose which texts to write about, so might choose not to include the novel. IB candidates have to do an essay in the second examination paper using two texts from one genre. Presumably the novel is one of these genres so could be covered here.

Knowledge about variety of genres

The EB talks about candidates having a wide knowledge of different varieties and genres of writing. The IB syllabus restricts itself to four different types of literary writing.

Links with other literatures

There is no evidence from EB examination scripts that candidates read widely in languages/ literatures other than Literature in English. IB candidates are obliged to consider World Literature texts.

1.94 Doc 1.2

Mapping Table – European Baccalaureate / Abitur

Comparability Study – L1 - Germany

Subject: L1

Syllabus compared: EB and the German Abitur

28. Complete the first column with a detailed list of the topic areas covered in the European Baccalaureate syllabus.
29. Insert a tick, or similar, to show where the topic is covered by the comparator specification – please delete option columns if there are no options.
30. Include comments to describe where a topic is covered in greater depth in one or other specification, where possible estimate how much time it would take to deliver the extra depth.

EB syllabus content	Present in core of comparator	Covered in greater/ less depth in EB	Covered in more/ less depth in IB Language A1
Oral work			
Reading			
Writing from different periods	No		
Play by Shakespeare	No		
One pre-20th century text	No		
Variety of works from different genres	Yes	Evidence of Abitur limited to prose writing, either fictional or non-fictional	
Thematic work Year 7	No		
Personal reading programme	No		
Other literatures	No		
Writing			
Write accurately			Candidates have to translate from English to German: this is a high level skill in the candidate's own language, not in English Translation from German to English shows very high levels of language understanding, akin to A level in the UK
Write effectively to instruct, describe, argue, explore, entertain	No		Only in response to limited task comprehension questions
Write with understanding of Literature and critical sources		No evidence in Abitur	

Describe rhetorical devices			
Plan and draft in limited time	Yes		
Write Summaries	Yes		Comprehension exercises demand that candidates 'sum up'
			Abitur candidates have to write in the target language, something that the EB does not assess
Knowledge about Language			
Theoretical Frameworks	Yes		Translation implies all of this
Contextual variation	Yes		Translation implies this
Language change	No		
Comparative Linguistics	No		
Regional accents and dialects	No		
			EB does not demand work in two languages, native and target
Comparison of Assessment Objectives		None given, so impossible to assess the Abitur	

Content included in the Abitur but not in EB syllabus

Please list any topics that are included in the A Level / IBO specification but not in the EB syllabus

54. **Translation into and from native language**

Comparison Table for comparison of assessment models

Use this table to make direct comparisons between the syllabuses in the following areas:

34. structure of the assessment model, including the format of assessment for the specification/syllabus
35. whether coursework is assessed, the kinds of coursework assessed and contribution to overall grade
36. whether oral assessment is part of the assessment model, and the extent and format of oral assessment
37. whether the assessment model is unit-based or requires candidates to take a synoptic view of the topics, and to what extent

NOTE: the prose commentary on the assessment models should draw attention to significant differences in the requirements for the European baccalaureate and the Abitur.

	European Baccalaureate	**Abitur**
Assessment structure, format and timings	Candidates take 5 units for the one two in English which suggests that 20% of curriculum time is given to English in Year 6-7	Information supplied suggests by implication that there are written examinations in English in

	Final examination represents 36% of total assessment Language 1 4 hours Practical Criticism : analysis of poetry or prose Comparison of two previously studied literary texts	Comprehension Translation from German to English Translation from English to German
Coursework assessment	None though 40 marks out of subject total for class marks and class examinations	Not possible to ascertain
Oral Work	Two examinations, twenty minutes each, content not specified in specification but candidates given unseen question with 20 minutes preparation time	Not specified, but it would be highly unlikely for a language examination not to have an oral component
Synoptic assessment	Syllabus claims that Year 7 examinations will also test 'knowledge gained in previous years.' The papers themselves do not 'police' this requirement	Not possible to assess

General Points

The Abitur papers given are from a language examination designed for students to show their competence in a foreign language. Examiners would expect, therefore a much more limited range of expertise in terms of texts and writing skills than those that would be displayed by a native speaker. The true comparison would, of course, be with a specification that is designed for native speakers, i.e. the equivalent of an A level in English language/ literature, not an A level in a foreign language.

Commentary on examination scripts

No Abitur scripts have been seen for comparison purposes.

Knowledge about Shakespeare:

Not seen

Knowledge about drama, the short story, autobiography, travel writing.

In having to do comprehension exercises it is clear that candidates will have studied a wide variety of different types of prose, both literary and non-literary. It is unlikely that they will have studied whole texts in preparation for this paper

Knowledge about Poetry

No evidence in Abitur material supplied

Knowledge about Novel

EB This can be tested on the exam paper, but candidates choose which texts to write about, so might choose not to include the novel. Abitur candidates only tested on this through comprehension exercise

Knowledge about variety of genres

The EB talks about candidates having a wide knowledge of different varieties and genres of writing: by inference, the Abitur is restricted to prose, both fictional and non-fictional.

Links with other literatures

There is no evidence from EB examination scripts or exam papers that candidates read widely in languages/ literatures other than Literature in English. Abitur candidates working in a target language (English) are working in a language other than native language and will presumably have experience of their own literature through the German section of the examination. No links between English and German literature are made.

1.94 Doc 1.3

Comparability Study Mapping Table – European Baccalaureate /Irish Leaving Certificate

English Syllabus compared

31. Complete the first column with a detailed list of the topic areas covered in the European Baccalaureate syllabus.
32. Insert a tick, or similar, to show where the topic is covered by the comparator specification – please delete option columns if there are no options.
33. Include comments to describe where a topic is covered in greater depth in one or other specification, where possible estimate how much time it would take to deliver the extra depth.

EB syllabus content	Present in core of comparator	Covered in greater depth in EB	Covered in greater depth in …Irish Leaving Certificate.
EB syllabus content			
Oral work	Yes	Yes because of role in assessment	Development of oralcy a significant aspiration. Methodologies of dialogue, group discussion, oral presentations recommended. Syllabus emphasises accuracy/appropriateness in language use, both oral and written
Reading			
Writing from different periods	Yes	EB through unseen literary passages	Comparative/Single Texts offer choice from different periods/cultures
Play by Shakespeare	Yes	Less depth here; general questions, not compulsory in examination	Compulsory: as Single Text choice or one of Comparative texts studied
One pre-20th century text	Optional	Not compulsory in examination	Not compulsory but may be taken as Single Text or one of Comparative texts.
Variety of works from different genres	Yes	Experienced through comprehension exercises or commentary on unseen passages	Greater depth at LC: evident in Unseen Texts in Language study for comprehension or as Mode in Comparative section
Thematic work Year 7	Generally		Comparative demands Mode on Theme/Issues (not in 2010) Language Paper structured around a general theme
Personal reading programme	Yes	Not assessed in terminal exam, questions refer to texts studied, not wider reading	Similar approach in exam but broader questions/assignments in Language paper offer more opportunities to reflect reading.

Other literatures		More depth as candidates supposed to exploit links with other literatures	Comparative course reflects other cultures and world literature
Writing			
Write accurately	Yes		
Write effectively to instruct, describe, argue, explore, entertain	Yes		Composing assignments offer opportunities to reflect language study in areas of information, argument, persuasion, narration, aesthetic use of language. Heavily weighted in exam at 25%
Write with understanding of Literature and critical sources	Yes		More in-depth study of text demanded and greater range and number studied
Describe rhetorical devices	Yes		Greater emphasis on language study in Texts in Language Paper and opportunity to utilise in own writing;
Plan and draft in limited time	Yes		More demanding tasks in exam papers with limited time
Write Summaries	No		
Knowledge about Language			
Theoretical Frameworks	Yes		In critical and close reading of texts
Contextual variation	Yes		Less theoretical approach; more practical application
Language change	No		
Comparative Linguistics	No		
Regional accents and dialects	No		
Comparison of Assessment Objectives			
		Both assess a competence in the accurate and appropriate use of language: similar objective	Greater demands to: analyse in depth, infer at sophisticated levels, speculate and question assumptions; to evaluate and critically respond to texts; to identify and analyse the form, structure and style of a text; to compare and contrast a range of texts under a variety of abstract categories; to compose effectively, with style and precision in discursive essays, arguments, reports

Content included in Irish Leaving Certificate English (Comparator syllabus) but not in EB syllabus

Please list any topics that are included in the Leaving Certificate specification but not in the EB syllabus…

55. **Compulsory Shakespearean Text**

56. **Study of work of a number of poets: Irish, English, American, West Indian**

57. **Comparative study in a number of abstract modes e.g. cultural and historical contexts, authors' viewpoint, literary form and period**

58. **Composition writing in a variety of genres**

Comparison Table for comparison of assessment models

Use this table to make direct comparisons between the syllabuses in the following areas:

38. structure of the assessment model, including the format of assessment for the specification/syllabus
39. whether coursework is assessed, the kinds of coursework assessed and contribution to overall grade
40. whether oral assessment is part of the assessment model, and the extent and format of oral assessment
41. whether the assessment model is unit-based or requires candidates to take a synoptic view of the topics, and to what extent

NOTE: the prose commentary on the assessment models should draw attention to significant differences in the requirements for the European baccalaureate and A Level or IB.

	European Baccalaureate	**Irish Leaving Certificate**
Assessment structure, format and timings	Candidates take 5 units for the one two in English which suggests that 20% of curriculum time is given to English in Year 6-7 Final examination represents 36% of total assessment Language 1 4 hours Practical Criticism : analysis of poetry or prose Comparison of two previously studied literary texts	Syllabus assessed by a terminal written examination. (Feasibility of oral and aural assessment still being researched). Two Papers: Language – 2hrs, 50mins Literature – 3hrs, 20mins Equal allocation of marks to each paper. English, one of six subjects necessary for Leaving Certificate Paper One specifically aimed at testing the comprehending and composing abilities of students. Candidates required to answer a number of comprehension questions, fulfil a functional writing task, and write an extended composition in a specific genre. Paper Two is divided into three sections: Section A – an in-depth study of a text

		Section B - Comparative Study of three texts Section C – Poetry : (i) Unseen Poem; (ii) A general question on one of the prescribed poets
Coursework assessment	None though 40 marks out of subject total for class marks and class examinations	None
Oral examination	Two examinations, twenty minutes each, content not specified in specification but candidates given unseen question with 20 minutes preparation time.	None
Synoptic assessment	Syllabus claims that Year 7 examinations will also test 'knowledge gained in previous years.' The papers themselves do not 'police' this requirement	

General Comments

Syllabus

The syllabus for European Schools outlines the aims, methods and assessment for years 1-7. Years 5-7 which prepare students for oral and written Baccalaureate examinations are given 3 pages in this syllabus under the headings of *Oral Work, Reading, Writing,* and *Knowledge about Language*.

The approach is different and more comprehensive in the Irish school system. A detailed syllabus outlines the aims, objectives, learning outcomes, assessment for the Junior cycle of years 1-3. It outlines the intended focus of attention in the three interrelated elements that constitute the course: personal literacy, social literacy and cultural literacy. The interdependence of these elements is the essential foundation for the teaching of English in the Junior cycle.

A second syllabus then builds on the aims of the Junior syllabus and outlines a more sophisticated range of skills and concepts. This is a 20 page comprehensive document providing opportunities for the development of the higher-order thinking skills of analysis, inference, synthesis and evaluation. Itemised lists of skills related to specific categories of language use are presented as the expected learning outcomes. Developing students' interest in literature is also central to Leaving Certificate English. A range of resources from different periods and cultures is included and students are encouraged to approach them in a comparative manner.
The course for these two years is organised around two general domains: comprehending and composing. The concept of shaping is central to these two domains. In their comprehending tasks students learn how language shapes experience through style, genre and context. In their composing tasks students are afforded the opportunity of using language to shape experience for themselves. The principle of integrating the teaching of language and literature, already central to the Junior syllabus, is of great moment here as well.
To give a more structured sense of development to the course, these two domains are encountered in the context of specific areas of language use and through the study of certain

texts and resources. For the purpose of the syllabus language is classified under five general headings:

The language of information
The language of argument
The language of persuasion
The language of narration
The aesthetic use of language

In conclusion, the Leaving Certificate syllabus is more detailed in approach and more demanding of the higher-order thinking skills.
It emphasises a greater integration of language and literature study.
A list of prescribed texts for assessment is provided every year with great variation.

Examination Papers

Here again the approach is very different.
"Practical criticism" features in EB whereas more specific demands are made in LC in response to texts for comprehension.
Both content and stylistic questions are found in LC with room for personal response.
Questions are more general and open in EB papers.
There is no compulsion to answer a Poetry section in EB as it is tested through optional "practical criticism" question. Poetry is a compulsory section in Literature paper in LC. A personal response is required to an unseen poem in LC and a discussion of a poet's work.
Students also have to discuss a Shakespearean text in LC but not in EB.

A long composing assignment is central to LC and awarded 100 of 400 marks for English. This does not appear on EB papers.

The comparative approach features in both EB and LC but is more demanding in LC. Good scripts from EB reveal a two-pronged approach whereby each text is discussed separately in response to a quotation in the question. LC students expected to have a greater comparative element worked through their answering. The emphasis is different also. In EB the focus is more on content, plot and character than on attitudes, values, structures and styles which are demanded in LC.

Time limit more demanding at LC. In EB 2 parts of a question have to be answered in 4 hours.
In LC Paper Two 3 sections have to be answered in 3hrs, 20 mins.
LC English can be taken at Higher or Ordinary Level.

Assessment

Assessment in EB focuses on Language and Content and awards marks accordingly around a wide and general range of criteria such as "sophisticated expression" "a pleasure to read" "unexpected subtleties" "distinguished work".
The criteria for assessment in LC are:

- Clarity of Purpose
- Coherence of Delivery
- Efficiency of Language use
- Accuracy of Mechanics

Each answer is in the form of a response to a specific task requiring candidates

- To display a clear and purposeful engagement with the set task
- To sustain the response in an appropriate manner over the entire answer
- To manage and control language appropriate to the task
- To display levels of accuracy in spelling and grammar

A grade grid is then provided.
30% of the marks are awarded to each of the first three criteria and 10% to the Accuracy of mechanics.

Again the approach in LC seems to be more specific in its demands of the marking.
There is no oral examination in LC English and no marks for Course work.

1.95 Doc 1.1

Comparability Study Biology

Mapping Table – European Baccalaureate / OCR A Level and IBD Subject Biology

Syllabuses compared OCR GCE A level and International Baccalaureate (Higher)

34. Complete the first column with a detailed list of the topic areas covered in the European Baccalaureate syllabus.
35. Insert a tick, or similar, to show where the topic is covered by the comparator specification – please delete option columns if there are no options.
36. Include comments to describe where a topic is covered in greater depth in one or other specification, where possible estimate how much time it would take to deliver the extra depth.
37. (✓) indicates there is no specific learning outcome for the topic but it would inevitably be covered in the specification/syllabus by nature of other topics listed.

EB syllabus content **Year 6**	**Present in OCR A level core**	**Present in OCR option**	**Present in IBD(H) core**	**Present in IBD(H) option**	**Covered in greater depth in EB**	**Covered in greater depth in OCR A level (code numbers refer to sections in the specification)**	**Covered in greater depth in IBD(H) (code numbers refer to topics in the syllabus)**
Chemical Composition of cells (biochemistry) **(15 hours)**	✓		✓				protein (6.5) polar and non-polar amino acids
DNA structure	✓		✓				includes packaging of DNA, ref to histones and nucleosomes
Enzymes (9 hours)							
role of catalysts	✓		✓			following the course of enzyme-catalysed reactions; activation energy	enzymes in metabolic pathways; activation energy
structure of enzymes	✓		✓		apoenzymes and		

					coenzymes		
model of enzyme action							induced fit
factors that influence enzyme activity	✓		✓			experimental investigation of factors specified; types in inhibition specified	types of inhibition specified; allostery in control of metabolic pathways
Cell structure (9 hours)							
structure and function of organelles	✓		✓				
prokaryotic cells v eukaryotic cells	✓		✓				
animal cells v plant cells	✓		✓				

EB syllabus content **Year 6**	**Present in OCR A level core**	**Present in OCR option**	**Present in IBD(H) core**	**Present in IBD(H) option**	**Covered in greater depth in EB**	**Covered in greater depth in OCR A level (code numbers refer to sections in the specification)**	**Covered in greater depth in IBD(H) (code numbers refer to topics in the syllabus)**
techniques for studying cells (other than microscopy)		2	✓ electroph-oresis only		✓ ultracentrifugation, radioactive labelling, autoradiography chromatography		
Excitable cells (15 hours)							
structure and function of neurones	✓		✓				
perception of stimuli	✓	5		E			
sense organs		5		E	EB asks for two sense organs – likely to be ear and eye	Ear and eye *difficult to tell if in more detail or not*	Eye only *difficult to tell if in more detail or not*
synaptic transmission	✓	5		E			
roles of synapses	✓	5		E		5.4.6, 5.4.6 and 5.9.3	E.7
structure of muscle cells		5	✓				

muscular contraction (sliding filaments)		5	✓				
Homeostasis (6 hours) one example	✓		✓			5.4.6	5.6
The body's defences (12 hours)							
self and non-self	(✓)		(✓)				
ABO and blood transfusion		2	✓				
MHC/HLA and grafting/transplants		2					
types of antigens	(✓)						
cells of immune system	✓		✓				
origin and maturation of cells of immune system	✓						
lymphocyte receptors	(✓)		(✓)		✓		
non-specific response	✓		✓				
specific response	✓		✓				

EB syllabus content **Year 6**	**Present in OCR A level core**	**Present in OCR option**	**Present in IBD(H) core**	**Present in IBD(H) option**	**Covered in greater depth in EB**	**Covered in greater depth in OCR A level (code numbers refer to sections in the specification)**	**Covered in greater depth in IBD(H) (code numbers refer to topics in the syllabus)**
clonal selection	✓		✓				
antibody production	✓		✓				
memory cells	✓		✓				
allergies	✓			H			
autoimmune disorders					✓		
immunological deficiencies	✓		✓				
vaccinations	✓		✓				Benefits and dangers of vaccination
bone marrow grafts					✓		

Human and animal behaviour * (9 hours)							
innate behaviour		5		E			E.1 and E.3
learned behaviour		5		E		5.9.6	E.4
social behaviour		5		E			✓
Water resource management *or*		3			✓		
Recycling / treatment of waste		3 and 4					

EB syllabus content Year 7	Present in OCR A level core	Present in OCR option	Present in IBD(H) core	Present in IBD(H) option	Covered in greater depth in EB	Covered in greater depth in OCR A level (code numbers refer to sections in the specification)	Covered in greater depth in IBD(H) (code numbers refer to topics in the syllabus)
Cell membranes (9 hours)							
fluid mosaic model of membrane structure	✓		✓				
movement across membranes	✓		✓				
Photosynthesis (9 hours)							
chloroplast structure and function	✓		✓				
light dependent stage	✓		✓				
light independent stage	✓		✓				
limiting factors	✓		✓				
C4 plants			(✓)		✓		
photorespiration					✓		
Respiration (9 hours)							
mitochondrion structure and function	✓		✓				
biochemistry of respiration	✓		✓				
anaerobic respiration	✓		✓				
roles of ATP	✓		✓				
relative gains of ATP in aerobic and anaerobic	✓		✓				
role of photosynthesis, etc in cycles of matter and energy	(✓)		✓		✓		
Classical genetics (9 hours)							
Mendelian genetics	✓		✓			5.4.4 EB Refers to revision of Year 5 topic	Topics 3 and 8
chromosome theory	✓		✓				

autosomal linkage		2	✓				
crossing over	✓	2	✓				
chromosome mapping					✓		
multiple alleles	✓		✓				
multiple genes (polygeny)		2	✓				
epistasis		2					

EB syllabus content Year 7	Present in OCR A level core	Present in OCR option	Present in IBD(H) core	Present in IBD(H) option	Covered in greater depth in EB	Covered in greater depth in OCR A level (code numbers refer to sections in the specification)	Covered in greater depth in IBD(H) (code numbers refer to topics in the syllabus)
Molecular genetics (12 hours)							
DNA replication	✓		✓				✓
one gene: one polypeptide	✓		✓				
genetic code	✓		✓				
transcription	✓		✓				
transcription in prokaryotes	✓		✓				
transcription in eukaryotes			✓				✓
translation	✓		✓				
post-translation modification of proteins	(✓)		(✓)		✓		
gene regulation (Jacob and Monod)	✓		✓				
genetic modification	✓		✓		PCR not in A level		
gene mutation	✓	2	✓				
chromosome mutation		2					
different forms of chromosome mutation					✓		
genome mutation:							
aneuploidy		2	✓				
polyploidy				F			
mutagenic agents	✓				✓		
Human heredity (6 hours)							
family trees / pedigrees	✓	2	✓				
twin studies					✓		
amniocentesis		2					
cytogenetic studies		2			✓		

hereditary diseases:							
gene mutations		2	✓				
chromosome mutations		2	✓				
sex-linked diseases			✓				

EB syllabus content Year 7	Present in OCR A level core	Present in OCR option	Present in IBD(H) core	Present in IBD(H) option	Covered in greater depth in EB	Covered in greater depth in OCR A level (code numbers refer to sections in the specification)	Covered in greater depth in IBD(H) (code numbers refer to topics in the syllabus)
Evolution (9 hours)							
classification	✓		✓				4.4
evidence from classification	✓						
process of fossilisation				D			
evidence from fossils				D			
Archaeopteryx					✓		
evidence from comparative anatomy		(5)		D			
evidence from biochemistry				D			
evidence from karyotypes					✓ *could be an e.g. in IBD(H)*		
evidence from biogeography				D	✓		
evidence from embryology				D	✓		
relative and absolute dating of fossils				D			
Origin of life (3 hours)							
chemical evolution (Miller-Urey experiment)				D			D.1 (no questions will be set on this topic in the EB)
endosymbiosis				D	✓		
Theories of evolution (2 hours)							
Lamarckism				D			
Darwinism	✓		✓				
Neo-Darwinism	✓			D			D.5
Causes of variability	✓		✓	D			

Population genetics (2 hours)							
genetic drift	(✓)				✓		
polymorphisms				D			D.6 (balanced and transient)
Hardy-Weinberg				D			

EB syllabus content Year 7	Present in OCR A level core	Present in OCR option	Present in IBD(H) core	Present in IBD(H) option	Covered in greater depth in EB	Covered in greater depth in OCR A level (code numbers refer to sections in the specification)	Covered in greater depth in IBD(H) (code numbers refer to topics in the syllabus)
Natural selection (2 hours)	✓		✓				
industrial melanism				D *as an e.g.*			D.3 has examples of evolution in action
convergence (analogy)					✓		
species definition	✓		✓				
allopatric speciation	✓			D			
Human evolution (3 hours)							
Man, Australopithecines, great apes				D			D.4

* EB students study *either* innate behaviour and learned behaviour *or* social behaviour.

Content included in OCR A level specification and IBD(H) syllabus but not in EB syllabus

Topic	Present in OCR A level		Present in IBD(H)		Comments
	Core	Option	Core	Option	
Advantages of using light and electron microscopy	✓		✓		
Surface area to volume ratio	✓		✓		
Tissues, organs and organ systems	✓		✓		
Differentiation of cells for specific functions	✓	✓ Option 1	✓		
Structure and reproduction of viruses		✓ Option 4	✓		Much more about viruses in the OCR option
Bacterial wall structure / Gram staining		✓ Option 4			
Asexual reproduction in Prokaryotae, Protoctista, Fungi, Animalia		✓ Options 1 and 4			
Diversity within the plant kingdom			✓		
Diversity in movement in animal kingdom			✓		
Structure of dicotyledonous plants			✓		
Mitosis and cytokinesis	✓		✓		
Mitosis involved in asexual reproduction, growth, tissue repair	✓		✓		
Tumours are result of uncontrolled cell division	✓		✓		
Meiosis	✓		✓		
Experimental evidence for semi-conservative method of DNA replication	✓				
Mendelian genetics	✓		✓		In EB knowledge is assumed from Year 5
Mendel's laws of segregation and independent assortment	(✓)		✓		
Sex linkage	✓		✓		
Sex determination			✓		
Continuous and discontinuous variation		✓ Option 2	✓		
Genetics of disease, pesticide and antibiotic resistance (eukaryote and prokaryote)		✓ Option 2			
Evolution					
Other theories of life on Earth – panspermia and special creation				✓ Option D	

Evidence and applicability of scientific method to further investigations of these theories				✓ Option D	
Human health and disease					
Definitions of health and disease	✓				
Categories of disease	✓				
Disease statistics	✓				

Topic	Present in OCR A level		Present in IBD(H)		Comments
Differences in standards of health worldwide	✓				
Diet and human nutrition	✓		*not for Higher*		
Physiology of exercise	✓		*not for Higher*		
Smoking and disease	✓			✓ Option H	
Coronary heart disease	✓			✓ Option H	
Pathogens and their transmission	✓		✓		
Biological, social and economic problems associated with control of infectious diseases	✓				
Forms of passive and active immunity	✓		✓		
Use of antibiotics	✓		✓		
Human Genome Project	✓		✓		
Blood clotting			✓		
Human Physiology					
Digestion and absorption		✓ Option 5	✓	✓ Option H	
Circulatory system (blood, heart, vessels)	✓		✓	✓ Option H	
Lymph	✓			✓ Option H	
Gas exchange	✓		✓	✓ Option H	
Effect of exercise on ventilation	✓			✓ Option H	
Acclimation to high altitude	✓			✓ Option H	
Transport of gases	✓			✓ Option H	
Excretion and the structure and function of the kidney	✓		✓		
Kidney dialysis			✓		
Endocrine system and hormonal control	✓	✓ Option 1	✓	✓ Option H	
The liver		✓ Option 5		✓ Option H	
Autonomic nervous system		✓ Option 5		✓ Option E	

Structure of the human brain and functions of four main regions		✓ Option 5		✓ Option E	
Sense of pain and roles of endorphins and enkephalins				✓ Option E	
Effects of psychoactive drugs on the nervous system				✓ Option E	
Alzheimer's disease		✓ Option 5			

Topic	Present in OCR A level		Present in IBD(H)		Comments
Parkinson's disease				✓ Option E	
Effects of ageing on skeletal system – osteoarthritis and osteoporosis.		✓ Option 5			
Anatomy of human arm, role of joints, lever action		✓ Option 5	✓		
Respiratory Quotient (RQ)	✓				
Mammalian anatomy and histology					
Histology of gut, liver and pancreas		✓ Option 5		✓ Option H	
Histology of bone and cartilage		✓ Option 5			
Histology of testis and ovary		✓ Option 1	✓		
Monoclonal antibodies – production and use in treatment and diagnosis		✓ Option 4	✓		OCR GCE A level option 4 – use in pregnancy testing only, not treatment.
Human reproduction					
Structure of reproductive systems		✓ Option 1	✓		
Gamete production		✓ Option 1	✓		
Roles of hormones in controlling gametogenesis		✓ Option 1	✓		
Secondary sexual characteristics, puberty			✓		
Menstrual cycle		✓ Option 1	✓		
Fertilisation		✓ Option 1	✓		
Internal development – roles of placenta and amnion		✓ Option 1	✓		
Birth		✓ Option 1	✓		
Contraception, abortion, IVF *including ethical issues*		✓ Options 1 and 2	✓		
Effect of mother's behaviour on growth and development of fetus		✓ Option 1			
Plant transport					
Absorption of water and ions	✓		✓		
Movement of water through apoplast and symplast pathways	✓		✓		

Distribution of vascular tissue	✓		✓		
Transport of water in xylem	✓		✓		
Transport of assimilates in phloem	✓		✓		
Transpiration (including role of guard cells)	✓		✓		
Factors influencing rate of transpiration	✓		✓		
Food storage in plants			✓		
Topic	**Present in OCR A level**		**Present in IBD(H)**		**Comments**
Adaptations of xerophytes	✓		✓		
Adaptations of hydrophytes			✓		
Adaptation of organisms to their environment	✓		✓		OCR GCE A level has structural and physiological adaptations
Definition of growth and methods to determine growth rates / absolute and relative growth rates		✓ Option 1			
Agriculture					
Intensive v extensive agriculture		✓ Option 3			
Effect of intensive agriculture on the environment		✓ Option 3			
Applied Plant Science					
Plant productivity (monoculture, hydroponics, greenhouses, etc)				✓ Option F	
Cultivation of a crop (wheat, maize or rice)				✓ Option F	
Organic v non-organic farming		✓ Option 3		✓ Option F	
Biological control v chemical control of pests		✓ Option 3		✓ Option F	
Applied Animal Science					
Animal husbandry (rearing of cattle, chicken or sheep)				✓ Option F	
Veterinary techniques (vaccination, etc)				✓ Option F	
Use and misuse of antibiotics		✓ Option 2		✓ Option F	

Plant Growth Regulators (PGRs)					
Roles of auxins	✓			✓ Option F	
Roles of gibberellins	✓				
Role of abscisic acid in leaf fall and closure of stomata	✓				
Commercial uses of PGRs				✓ Option F	
Roles of PGRs in dormancy		✓ Option 1			
Use of PGRs in micropropagation		✓ Option 1		✓ Option F	

Topic	**Present in OCR A level**		**Present in IBD(H)**		**Comments**
Plant and animal breeding					
Principles of plant breeding	✓	✓ Option 2		✓ Option F	OCR GCE A level requires an example of artificial selection in the core which could be either animal or plant
Principles of animal breeding		✓ Option 2		✓ Option F	
Heritability (VP = VG + VE)		✓ Option 2			
Progeny testing		✓ Option 2			
Artificial Insemination (and ethical issues)		✓ Option 2			
Embryo transplantation (and ethical issues)		✓ Option 2			
Maintenance of biodiversity for agriculture (land races, rare breeds, wild plants)		✓ Options 2 and 3		✓ Option F	
Genetic engineering in agriculture					
Uses of GMOs in agriculture		✓ Option 2	✓		
Advantages and disadvantages of GMOs		✓ Option 2	✓		
Transgenic techniques		✓ Option 2		✓ Option F	
Ethical issues		✓ Option 2		✓ Option F	
Use of reverse transcriptase in genetic engineering	✓	✓ Options 2 and 4	✓		
Gene therapy		✓ Option 2	✓		
Genetic screening of humans		✓ Option 2	✓		
Genetic fingerprinting / DNA profiling		✓ Option 2	✓		

Microbiology and biotechnology					
Production of insulin by bacteria, etc	✓	✓ Option 4			
Cloning *and ethical issues*		✓ Options 1, 2 and 4	✓		
Plant tissue culture		✓ Options 2 and 4			
Microbiological techniques (aseptic technique, dilution plating, etc)		✓ Option 4			
Large scale production of microorganisms and their products (batch and continuous culture)		✓ Option 4			
Role of biotechnology in food production (traditional and novel)		✓ Option 4			
Commercial applications of enzymes		✓ Option 4	✓		

Topic	Present in OCR A level		Present in IBD(H)		Comments
Use of biosensors (e.g. blood glucose monitoring)		✓ Option 4			
Enzyme immobilisation		✓ Option 4			
Plant reproduction					
Flower structure and adaptations to pollination		✓ Option 1		✓ Option F	
Sexual reproduction in flowering plants		✓ Option 1			
Germination		✓ Option 1			
Asexual reproduction in flowering plants		✓ Option 1		✓ Option F	
Artificial propagation of flowering plants		✓ Option 1		✓ Option F	
Control of flowering (long- and short-day plants), phytochrome		✓ Option 1		✓ Option F	
Populations					
Population growth (in bacteria) / S-shaped population growth curve	✓		✓		
Effects of limiting factors on population growth	✓				
Effects of natality, mortality, migration on population size			✓		
Concept of carrying capacity	✓		✓		
Estimate population size using mark-release-recapture		✓ Option 3	✓		
Ecology					
Definitions of ecological terms	✓		✓		
Factors that affect distribution and abundance of species	✓	✓ Option 3		✓ Option G	
Niche concept	✓			✓ Option G	
Interactions (parasitism, mutualism, etc)	✓			✓ Option G	
Competition and competitive exclusion	✓			✓ Option G	

Feeding relationships (trophic levels)	✓		✓	✓ Option G	
Energy flow in ecosystems	✓		✓		
Biomass and production				✓ Option G	
Succession	✓	✓ Option 3		✓ Option G	
Predator-prey relationships	✓		(✓)		

Topic	**Present in OCR A level**		**Present in IBD(H)**		**Comments**
The nitrogen cycle	✓			✓ Option G	More detailed treatment in IB(H)
Chemoautotrophy				✓ Option G	
Roles of bacteria in nitrogen cycle				✓ Option G	More detailed treatment in IB(H)
Increasing N fertility of soils, e.g. use of legumes in crop rotation and intercropping		✓ Option 3		✓ Option G	
The carbon cycle			✓		
Practical Ecology					
Investigate distribution and abundance using random sampling (quadrats, transects)	✓	✓ Option 3	✓		
Measuring abiotic factors		✓ Option 3			
Soil structure analysis (plus properties of soil and plant growth)		✓ Option 3			
Biodiversity and Conservation					
Definition of conservation and reasons for conserving wildlife, habitats and resources		✓ Option 3			
Land reclamation		✓ Option 3			
Conservation of biodiversity (rainforest)		✓ Option 3		✓ Option G	
Factors that cause extinction		✓ Option 3		✓ Option G	
Simpson's diversity index				✓ Option G	
Use of biotic indices and indicator species to monitor pollution		✓ Option 3		✓ Option G	
Overexploitation and conservation of fish stocks		✓ Option 3		✓ Option G	
Conflict between production and	✓				

conservation (use of fertilisers, e.g.)					
Ecosystem management (temperate woodlands)	✓				
In situ conservation (nature reserves, African elephant)		✓ Option 3		✓ Option G	
Ex situ conservation (zoos / botanic gardens, seed banks, gene banks, sperm banks)		✓ Options 2 and 3		✓ Option G	
Role of national agencies in conservation (e.g. RSPB)		✓ Option 3			
Role of international agencies in conservation (e.g. CITES)		✓ Option 3		✓ Option G	

Topic	Present in OCR A level		Present in IBD(H)		Comments
Impacts of humans on the environment					
Roles of carbon dioxide, methane, CFCs in global warming		✓ Option 3	✓		IBD(H) 4.5 two examples one of which has to be the greenhouse effect
Ozone and its destruction		✓ Option 3		✓ Option G	
Ways to reduce impact of emissions		✓ Option 3	✓		
Effects of sewage and fertilisers on freshwaters	✓ (fertiliser)	✓ Option 3		✓ Option G	
Sampling freshwater and BOD		✓ Option 3			
Pollution by DDT, PCBs and heavy metals		✓ Option 3			
Origin and effects of acid deposition (acid rain)		✓ Option 3		✓ Option G	
Generation of methane from biomass		✓ Option 4		✓ Option G	
Production of gasohol		✓ Option 4		✓ Option G	
Mathematical techniques					
calculating a mean	✓		✓		
standard deviation	(✓)	✓ Option 3	✓		Expected knowledge about standard deviation in IBD(H); implied in OCR GCE A level core, need to calculate it in Option 3
Statistical analysis					
chi-squared test	✓	✓ Option 2			
t-test		✓ Option 3		✓ Option G	

Summary of subject content.

Most of the topics covered by the EB syllabus for Years 6 and 7 are also covered by the OCR GCE A level and IB. There are very few topics that are unique to the EB. Most of the common topics are in the core syllabus for the OCR GCE A level and IB. Therefore there is very close agreements between what constitutes 'core' Biology at this level. Topics **not** covered by the EB are in the syllabuses for lower years, such as mitosis and meiosis (Year 5), ecology, plant transport and mammalian transport (Year 4) and human reproduction (Year 5) or they are topics that fill the five OCR options and the five IB(H) options. There is very little repetition from previous years. The EB course builds on work in previous years without repeating any or much of it.

The Year 7 course highlights evolution and more time is spent on aspects of this such as the origin of life, evidence for evolution and human evolution. OCR A level candidates would not study these topics at all, IB(H) candidates may do if they take Option D. These topics provide EB candidates with a 'synoptic' aspect to the course as students are likely to draw together knowledge from previous years.

It is very hard to judge the level of detail required for the EB syllabus, but a perusal of the two examination papers (2007 and 2008) and their mark schemes suggests it is very similar to A level and IB.

Comparison Table for comparison of assessment models

Use this table to make direct comparisons between the syllabuses in the following areas:

42. structure of the assessment model, including the format of assessment for the specification/syllabus
43. whether coursework is assessed, the kinds of coursework assessed and contribution to overall grade
44. whether oral assessment is part of the assessment model, and the extent and format of oral assessment
45. whether the assessment model is unit-based or requires candidates to take a synoptic view of the topics, and to what extent

NOTE: the prose commentary on the assessment models should draw attention to significant differences in the requirements for the European baccalaureate and A Level or IB.

	European Baccalaureate	**OCR GCE A Level / IBD (H)**
Assessment structure, format and timings	The EB is not a modular course. Marks from Biology contribute to the final baccalaureate as follows: 'A' marks given by teachers at the end of each semester in Year 7. The marks are given for performance in class work. The final 'A' mark is the average of the marks for the two semesters. A 'B' mark for a 2 ¼ hour examination set by the teacher (the 'Pre-Bac') and taken at the end of the first semester in Year 7. A 3 hour written examination or a 20 minute oral examination taken in May of Year 7 (the 'Bac'). The examination paper is divided into three sections: P, G and E. There are two questions of 40 marks each in sections P and G. The questions in section E are out of 20 marks each The candidates choose one question from each section. P addresses section 7.1 of the syllabus covering cell membranes and energetics. G addresses section 7.2 covering genetics. E addresses section 7.3 covering evolution.	**OCR GCE A level** is a modular course. Divided into AS (usually taken in Year 12) and A2 (Year 13). AS and A2 contribute 50% each to the final aggregated mark. AS – three Units: 2801 *Biology Foundation* (60 minutes) written paper 2802 *Human Health and Disease* (60 minutes) written paper 2803 *Transport* (45 minutes) written paper **and** *either* coursework *or* a practical examination (90 minutes) A2 – three Units: 2804 *Central Concepts* (90 minutes) written paper 2805 One option chosen from five (90 minutes) written paper 2806 *Unifying Concepts in Biology* (75 minutes) written paper **and** *either* coursework *or* a practical examination (90 minutes) Candidates are not required to write discursive essays. Point mark schemes are used for all examinations. Marking points are separated by semi-colons in the mark schemes. Marks for quality of written communication (QWC) are awarded for some extended-response questions. 90 minute papers have two and 60 minute papers have one.

	Each question is subdivided into part questions. Some of these are simple recall questions; some involve drawing labelled drawings or constructing genetic diagrams. Some questions involve data analysis and interpretation, but the information given is closely related to the topics and cannot be considered to be unfamiliar as with Question 1 in Paper 2 of IB and all the questions in 2806 and many in 2805 with OCR. Candidates are not required to write discursive essays. The mark scheme gives solutions to the questions and suitable answers. The mark scheme is not a point mark scheme with marking points clearly indicated and separated from each other. In some cases two answers are required, but three marks are allocated. It is not clear how the three marks are applied. There is no mention of marks for quality of written communication in the mark schemes. The 'A' mark is aggregated with the marks for the 'Pre-Bac' and the 'Bac' to give a mark that contributes towards a final total out of 100 for the European Baccalaureate. The information provided does not mention opportunities for resitting before certification.	All units are available in January and May/June. Retakes of Unit exams are permitted. The best mark for each Unit is used in aggregation. Resits are available before final aggregation. **IBD(H)** is not a modular course. Examinations are taken at the end of the course in May or November. Paper 1 (20%) (60 minutes) 40 multiple choice questions covering the core. No questions on the Options are included. Paper 2 (36%) (135 minutes) written paper. Section A – a data based question and several short response questions; Section B - two questions (chosen from four); each question is subdivided into three sections, some requiring extended responses. The paper is set on the core. Paper 3 (20%) (75 minutes) written paper. Several short-answer questions and one extended-response question in each of the two chosen options. There are no choices. Point mark schemes are used for all examinations. Marking points are separated by semi-colons in the mark schemes. Two marks for quality of written communication are awarded for each question in Section B of Paper 3. Two versions of Papers 2 and 3 are set for different Time Zones at each session – May and November. Resits are not available before final certification. These marks are aggregated with marks from other subject areas to give a final points score to a maximum of 45 for the IB diploma.

Coursework assessment	'A' marks (see above) could include marks from work similar to coursework assignments in OCR GCE A level coursework and IBD(H) internal assessment, such as laboratory reports. There is no requirement for candidates to complete coursework in the way in which A level candidates and their teachers would understand the term. Students may have the chance to take a 2-period laboratory course in Biology but it is not a requirement of the EB.	**OCR GCE A level:** Assessment of Experimental and Investigative Skills For AS, candidates may submit coursework ***or*** take the AS Practical Examination. For A2, candidates may submit coursework ***or*** take the Practical Examination. This assessment comprises 20% of the final A level in Biology. Coursework consists of Planning, Implementing, Analysing and Evaluating. Candidates may submit several different pieces of work or one investigation covering all four skills. One mark for each skill only is permitted. The Practical Examination has a Planning Exercise which is prepared over a period of 7 to 10 days before the examination. The Practical Test has two questions which assess the other three skills: Implementing, Analysing and Evaluating. One question usually involves microscopy.
		IBD(H): Coursework represents 24% of the final assessment. It may come from Practical and Research work carried out throughout the course but may also involve assessment of candidates' work in the Group 4 project. IB science students are required to complete a Group 4 project during which they must work with other students on a collaborative task. This may be one task that all students in the school/college are involved with or several tasks for groups of 5-10 students to tackle. Their individual contributions to the group project may be part of the assessment. Throughout the practical programme their personal skills, working alone, working with others, and their awareness of environmental impact are assessed.

Oral examination	Candidates may select to take an oral examination instead of the written paper. Oral examinations last 20 minutes. Candidates are allowed a 20 minute preparation time. Marks are awarded by the candidate's teacher and an external examiner on a scale of 0 to 10. The final mark is the average of the two marks awarded.	**OCR GCE A level:** None **IBD(H):** None
Synoptic assessment	The work in Years 6 and 7 appears to be synoptic on the earlier years in that topics covered in those early years may be revisited although there is no indication in the syllabus that this should be the case, except for Mendelian genetics in Year 7. The question paper is set on topics from Year 7 only. The EB question papers for 2007 and 2008 did not have any questions that relied on information from Year 6. None of the questions required synoptic skills as described in the QCA Performance Descriptions. Each question is set on a specific topic from the syllabus and does not require knowledge or understanding from other topics.	**OCR GCE A level:** Synoptic assessment comprises 20% of the final assessment. It is in the following Units: 2805 30 marks (out of 90) are designated as synoptic. Questions are included that test knowledge and understanding across the three AS units and 2804 (*Central Concepts*) in ways that are relevant to each Option. 2806/01 All 60 marks are synoptic. This paper has four or five questions set on topics from the three AS units and 2804 (*Central Concepts*). It is a skills based paper that matches the QCA Performance Descriptions for synoptic assessment in Biology at A level. 2806/02 and 2806/03 50% of the marks are synoptic (skills P and A) There is no requirement to write a discursive essay that draws together information from across the specification. However, this skill is assessed in shorter extended answer questions in 2805 and in 2806/01. **IBD(H):** Question 1 in Paper 2 requires candidates to analyse and interpret unfamiliar information. This question is similar to the questions set by OCR in its synoptic paper *Unifying Concepts in Biology*. This satisfies the some of the descriptors in the QCA Performance Descriptions for synoptic assessment.

		Each question in Section B of Paper 2 is subdivided into three sub-sections and candidates are not expected to write lengthy, discursive essays supported by factual knowledge from across the syllabus. These questions do not satisfy the requirement to link together information from different parts of the syllabus and cannot be considered to be synoptic.

Summary conclusions

All three syllabuses state that candidates will be expected to develop skills appropriate to a study of Biology at this level. The GCE A level and IB examinations and internal assessment make it clear that all the skills will be assessed. It is not clear from the materials supplied for the EB whether this is the case. Much depends on the assessments that constitute the 'A' mark (see above). There is no indication that the A mark is moderated as is the case with A level and IB.

The EB syllabus recommends that the 4-period EB Biology course should take a minimum of 150 hours over two years. The syllabus suggests that teachers will have more time than this and there may be up to 180 hours available based on a 30 week year. Lessons at Schola Europaea are 45 minutes in length. In the UK, UCAS assumes A levels have 360 guided learning hours. The time for delivery of the IB syllabus is recommended as 240 hours with 180 hours for theory and 60 hours for activities towards the internal assessment and the Group 4 project. The EB Year 7 course roughly corresponds to the time required to teach one of the A2 Units. The nearest match as far as content is concerned is with 2804 (*Central Concepts*). This unit should take about half a year to complete equating to approximately 90 hours. The 'size' of the content in Year 7 of the EB equates almost exactly with that in *Central Concepts*.

Although there are some differences in the styles of questions between OCR A2 examination papers and the EB paper, the level of knowledge and understanding expected in both is very similar as revealed by the mark schemes. The standards expected of Year 7 EB students are very close to those expected of candidates taking the OCR A2 core paper *Central Concepts*. The EB has topics that are not on the OCR syllabus, but used to be on previous UCLES syllabuses. The level of detail suggested by the examination papers is very similar to that expected at A level in the UK.

There is no synoptic assessment in the EB paper equivalent to that in OCR papers 2805 and 2806/01 and in the A2 practical assessment. The synoptic skills are considered to be very demanding and therefore more is expected of OCR students taking this part of their assessment. None of the examination papers scrutinised have lengthy free-response essays that are marked using a generic mark scheme indicating levels of response as in, for example, the synoptic paper set by AQA in the UK or in the Advanced Extension Award in Biology.

Scrutiny of the EB scripts from May 2008 and the OCR scripts from June 2007 suggests that the standard of responses from the two groups of students on the EB paper and 2804 is very similar. The EB scripts do not have any marks on them at all. The best candidates at Bruxelles III have written answers that are clear and concise, covering most of the points expected. There are no questions on the paper on material that would be unfamiliar to them as there is on 2804.

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Biology Annex - Comparability Study

EB							Abitur				
P1	C	R	A	S	Marks	A1	C	R	A	S	Marks
(a)(i)	2	3	3	3	2	1.1	3	2	3	4	5
(ii)	1	1	2	1	2	1.2	3	2	4	3	8
(iii)	2	2	2	3	3	2.1	2	4	2	3	8
(b)(i)	1	3	1	1	3	2.2	2	1	3	1	6
(ii)	2	3	1	3	3	2.3.1	3	2	4	4	6
(c)(i)	2	2	3	2	6	2.3.2	2	1	3	3	7
(ii)	2	2	3	2	4	A2					
(d)(i)	1	1	1	1	4	1.1	2	4	3	3	4
(ii)	1	3	1	1	4	1.2	3	4	4	4	5
(iii)	1	2	1	1	3	1.3	3	3	4	3	4
(iv)	1	2	1	1	2	2.1	3	4	4	4	10
(v)	1	2	1	1	2	2.2	2	1	3	1	5
(vi)	1	2	1	1	2	2.3	2	2	2	2	6
P2						2.4	4	4	4	4	6
(a)(i)	1	1	1	1	2	B1					
(ii)	1	2	1	1	2	1.1	1	1	1	1	4
(iii)	2	1	1	1	4	1.2	1	2	2	2	4
(b)(i)	1	1	1	1	4	1.3.1	2	3	2	2	7
(ii)	1	1	1	1	4	1.3.2	3	2	2	2	3
(iii)	1	1	1	1	2	2.1	2	2	2	2	5
(c)(i)	3	4	3	2	6	2.2	3	4	4	4	6

Biology Annex - Comparability Study continued/..2

EB							Abitur				
P1	C	R	A	S	Marks	A1	C	R	A	S	Marks
(ii)	1	2	1	1	3	3.1	2	4	2	3	6
(iii)	1	1	2	1	2	3.2	4	4	3	4	5
(d)(i)	2	2	3	2	3	B2					
(ii)	2	2	3	2	3	1.1	3	2	2	3	6
(iii)	2	2	2	2	2	1.2.1	2	2	2	2	5
(iv)	2	2	2	2	2	1.2.2	2	2	2	2	4
(v)	1	1	2	1	1	2.1	2	2	3	2	6
G1						2.2	2	2	2	2	6
(a)(i)	3	1	3	2	3	3.1	2	2	2	2	4
(ii)	2	1	2	1	6	3.2	3	3	3	3	9
(iii)	2	1	2	1	4						
(iv)	2	1	2	1	7						
(b)(i)	2	1	2	1	4	C1					
(ii)	2	1	2	1	3	1.1	2	1	3	3	8
(c)(i)	1	1	2	1	4	1.2	2	1	3	2	6
(ii)	2	1	2	1	6	1.3	3	2	4	2	6
(iii)	2	1	2	2	3	1.4	4	2	4	2	6
G2						2.1	2	3	3	3	3
(a)(i)	2	1	2	1	4	2.2	3	4	3	4	7
(ii)	1	1	2	1	4	2.3	3	3	3	3	4
(iii)	1	1	2	2	2	C2					

Biology Annex - Comparability Study continued/…3

EB							Abitur				
P1	C	R	A	S	Marks	A1	C	R	A	S	Marks
(iv)	1	1	2	1	2	1.1	2	4	3	2	4
(b)(i)	1	1	1	1	2	1.2	2	2	3	1	8
(ii)	1	2	2	1	4	1.3	3	2	2	3	8
(iii)	1	1	1	1	3	1.4	3	2	3	3	8
(iv)	1	1	1	1	2	2.1	3	2	2	4	4
(c)(i)	1	1	2	1	5	2.2	1	4	1	1	4
(ii)	1	1	2	1	3	2.3	3	4	3	4	4
(d)(i)	1	1	2	1	2						
(ii)	1	1	1	1	2						
(iii)	2	1	2	2	3						
(iv)	1	1	1	1	2						
E1											
(a)(i)	2	1	2	2	2						
(ii)	2	1	2	2	3						
(iii)	2	1	2	2	4						
(iv)	2	1	2	2	3						
(b)(i)	2	2	3	2	4						
(ii)	3	1	3	2	2						
(iii)	2	3	3	1	2						
E2											

Biology Annex - Comparability Study continued/…4

EB							Abitur				
P1	C	R	A	S	Marks	A1	C	R	A	S	Marks
(a)	2	3	2	4	4						
(b)(i)	1	1	1	1	6						
(c)(i)	1	1	1	1	3						
(ii)	1	1	1	1	3						
(d)(i)	2	1	2	2	2						
(ii)	2	1	2	2	2						

1.95 Doc 1.3

Comparison between Biology Examination papers – European Baccalaureate and German Abitur

Richard Fosbery September 2008

European Baccalaureate

Examination in Biology

A 3 hour written examination or a 20 minute oral examination taken in May of Year 7 (the 'Bac').

The examination paper is divided into three sections: P, G and E. There are two questions of 40 marks each in sections P and G. The questions in section E are out of 20 marks each. The candidates choose one question from each section.

P addresses section 7.1 of the syllabus covering cell membranes and energetics. G addresses section 7.2 covering genetics. E addresses section 7.3 covering evolution.

Each question is subdivided into part questions. Some of these are simple recall questions; some involve drawing labelled diagrams or constructing genetic diagrams. Some questions involve data analysis and interpretation, but the information given is closely related to the topics and cannot be considered to be unfamiliar as with all the stimulus material in the questions in the Abitur.

Candidates are not required to write discursive essays.

The mark scheme gives solutions to the questions and suitable answers. The mark scheme is not a point mark scheme with marking points clearly indicated and separated from each other. In some cases two answers are required, but three marks are allocated. It is not clear how the three marks are applied.

There is no mention of marks for quality of written communication in the papers or the mark schemes.

German Abitur

Examination in Biology

A 4 hour written examination paper.

The examination paper is divided into three sections. The 2008 paper had questions on:

A – Genetics
B – Biochemistry and Metabolism
C – Evolution and Neurobiology

There are two questions in each section. Candidates choose to answer one question from any section.

Each question is subdivided into about 7 part questions. The total number of marks for each question is 40.

The time allocation (4 hours) is certainly enough for candidates to complete the task. I am sure that many do not need the full time allocation. In fact I am told that one student completed her Abitur in biology in three hours and that this was not unusual.

Each question has detailed stimulus material to read and assimilate. All questions are illustrated with diagrams, graphs or drawings.

There is a mixture of recall questions and more demanding questions requiring analytical, interpretative and evaluative skills.

In the recall questions, candidates are expected to make diagrams to show certain aspects of biology which they have obviously learnt.

Some questions, notably those in Section A, are more demanding than others.

No mark scheme was provided so it was impossible to determine the standard of responses expected. I suspect that the level is high.

Candidates are not required to write discursive essays.

There is no mention of marks for quality of written communication in the papers.

Question analysis.

I used the CRAS analysis developed by UCLES in 1999 to analyse the question papers. The results are on the accompanying spread sheet. Entries in red identify the recall questions. Other questions require application of knowledge and/or responses to stimulus material. Details of the CRAS system are supplied.

This revealed the Abitur questions to be of a much higher demand. For example there are far more CRAS scores of 4 in my analysis of the Abitur papers. There are far more questions on the EB paper with scores of 1 and 2. This applies to all four criteria of the CRAS analysis:

Complexity
Resources
Abstractness
Strategy

There were three questions where identical or very similar topic areas were tested.

1. The light dependent stage of photosynthesis.

EB – P2 (c)(i)

Give the location in the cell of the reaction of the light dependent stage of photosynthesis, and describe the reactions of this stage. [6]

Abitur – B1 2,2

Illustrate in a simplified labelled diagram the light dependent reactions in higher plants. [6]

These two questions ask for recall of some complex biochemistry for this level. However, the questions suggest that both groups of candidates would have learnt a standard diagram that shows the light dependent stage of photosynthesis. The EB candidates have to do more than just reproduce a learnt diagram, so the level of demand is slightly higher for them.

2. Pedigree analysis.

EB – G1

(a) The candidates are provided with information about total colour blindness and given a pedigree.
They are expected to determine the mode of transmission by identifying it as a recessive disorder. They could also be expected to deduce that it is an autosomal condition, but the mark scheme does not require that.

Abitur – A1 1.1

The candidates are provided with information about Wilson's disease and are given a pedigree to analyse. This is also an autosomal recessive disorder. Without a mark scheme I cannot tell what the candidates are expected to deduce. It may also be the case that they are expected only to state that it is recessive.

These questions are identical in demand, although without a mark scheme for the Abitur paper I cannot be sure whether the autosomal inheritance is expected in the answers or not. If so, then the demand is higher.

3. Use of the genetic code

EB – G1

(a)(iii) The candidates have to use the genetic code which is provided for them in tabulated form to list the amino acids in a short piece of protein.

Abitur – A1 2.2

The candidates are provided with the genetic code in the form of a wheel and asked to give the base sequence that codes for 36 amino acids that are in six domains within a protein

Abitur A2 2.2.

The candidates are provided with the same diagram of the genetic code as in A1 and expected to use it to give the amino acid sequence coded by a given nucleotide sequence.

These questions are identical in demand. The skill required is the same. The Abitur requires candidates to perform the skill on much more information but that does not raise the level of demand.

There are far more recall questions in the EB paper than in the Abitur. Many of these are short questions in which the strategy for the answer is given. The twelve recall part questions in the Abitur have more marks and the candidates are not given as much help in organising their answers.

The topics in these recall questions suggest that the material tested in the Abitur is more extensive than that tested in the EB which is an examination on the final year of the course. The material in these recall questions in the Abitur paper compares almost exactly with that covered in UK A level Biology courses. The level of demand seems about equivalent as well although the questions in Section A are more demanding than A level questions and equivalent to the data analysis questions in The UK Advanced Extension Award paper (AEA).

Both papers test analytical and interpretative skills. The questions of this type on the Abitur paper provide candidates with more detailed stimulus material of a much more demanding nature. It is unlikely that the candidates will have come across the stimulus material before. The EB paper uses much more familiar and less demanding stimulus material and in each case there is far less to read and assimilate. In these questions the Abitur is far more demanding. The questions asked are also more demanding in that the stimulus material requires careful reading and analysis.

On balance the Abitur requires far more analysis of information and application of principles than the EB paper. The level of demand is therefore considerably higher. Although I must qualify that by stating that I have not seen mark schemes so do not know what is expected by the examiners. I suspect that they require high levels of response. I consider the level of demand to be equivalent to that of the UK AEA examination in biology. The level of demand of the EB is equivalent to that of the non-synoptic module at A2 in the OCR Biology specification.

Richard Fosbery

27th September 2008

1.95 Doc 1.4

EB- French Baccalauréat - Biology

(Mr Dominique Raulin – 8 octobre 2008)

4. Biology is studied in scientific formation (série S): in the other formation, biology is not compulsory and is studied with physics and chemistry.
5. Here, we compare EB to French Bac in scientific formation.

Curriculum
5.1Biology within the EB
The biology syllabus is composed of two periods per week, in years 6 and 7. The syllabus is built in six parts : each one is short and written in day-to-day language. For example, 1 – Aims – b) to stimulate a respect for the environment... or 2 – objectives c) To develop in the students the ability to express their ideas using a scientific vocabulary...

There are five aims, four objectives and five skills. The first impression of the specification is of simplicity and easyness.

The general parts, 4 and 5, present an outline of the course (4 topics in 6^{th} and 3, in 7^{th}), and minimum time allocations (2 to 3 weeks for each topic in 6^{th} and, average 3 to 5 weeks in 7^{th}).

The syllabus is presented into three columns: topic, core and supplement:

In the first column (topic), titles of chapters are detailed: for example, 6 - 1 Nutrition – 6 – 1.1 Food composition; 6 – 1.4 Making and preserving food

The second column (core) is like a summary of a handbook or a dictionary: for example, carbonhydrates, fats, proteins, or processing and conserving techniques…

The third column (supplement) is sparsely stated: it gives some greater detail or some possible extensions. For example, 'diseases of nervous system: Alzheimer, Parkinson's, MS, etc'.

In conclusion, the main impression is of a relatively lightly specified content and relatively conceptually undemanding content. The text is readily accessible and understandable.

5.21.2. Biology in the French Baccalauréat

In France, students have 4 hours per week in 6^{th} (2 hours of experiences) and 3 hours in 7^{th} (1 h 30 of experiences); in 7^{th}, it is possible to add two hours per week to study others' experiences.
The first impression of the text is that it takes the form of a literary text and thus requires considerable effort of attention and concentration from teachers. Many official reports point out that too many teachers do not read the first parts of official texts (General presentation).

There are two main parts: Biology ang Geology (science of World). For each part and chapters, the time is indicated: for example Geology, 10 weeks, in year 6.

Content is presented into two columns: possible activities; notions and topics:

the first column (possible activities) gives to the teachers some ideas about possible approaches to study topics or to present a new notion

the second column appears very scientific and defined to a high level of specificity. For example, Chemical compositions

5.31.3. Comparison:

General points:

The specification of curriculum is lighter in EB than in France and seems to allow more autonomy to teachers in the choice of methods and support.

The level required at French bac seems to be much more scientific and demanding.

The objectives seem to be clearer in EB, principally because their presentation is simpler and more precise.

Regarding content
The topics studied in the respective qualifications are very different, both in content and level required - the comparison in relation to precise standards is thus difficult.

In conclusion, the approaches of each formation are very different: time, topics, concepts, and content.

2. The assessments in the respective qualifications

2.1. In the French bac:

Requirements of bac S are presented in an text additional to the syllabus.
The marking scheme is composed of two parts:
The written examination (3 h): this values reproduction of knowledge and aptitude for scientific reasoning; 16 points
Abilities to develop scientific experiences (practical work) is valued in continuous assessment; 20 points. 25 situations of assessment are defined by the ministry and are published three months before the end of the school year.

2008 – session

The written examination consists of three parts: each question is very short and based on documents given in the question paper. The objective is to value the ability to build a scientific argument and undertake scientific reasoning. For example, expose how... or, from the documents and with your knowledge, discuss why...
The requirement is to produce structured scientific argument.

Abilities to develop scientific experiences (practical work): the list is presented in two columns: first, specification of the assessment context; second, specifications about activity and outcomes required. There are many topics and so, it is impossible that candidates can simply learn every topic by heart.

2.2. Within the EB

In year 7, the Bac consists of the A-mark based on oral participation and written work, and the B-mark established by the written examination in January. Students can also choose to sit the written or the oral examination in the Bac.

Guidelines for the setting of baccalaureate questions are given: six points. For example, translations into different languages must scrupulously follow the sense of each question.

2007-session:

3 hours
There are 16 pages in the QP: two exercises P; two exercises G (Genetic) and two exercises E (Evolution).
Candidates must choose one exercise P, one exercise G, one exercise E.
Each exercise is composed of a double-sheet with texts and diagrams.
Each exercise consists of a large number of questions. For example, in P1, four questions: two sub questions in first question, three in the third one, and five in the fourth one.
The answers expected are a scientific text: the focus is on the ability to construct scientific reasoning about biology.

In comparison with the syllabus, exercises seem very demanding and lack articulation with the specifics of the specification.

5.42.3. Comparison

The two question papers are very different: very short and without choice within the French bac, and very long, with choices within the EB.

In the two question papers, the principal outcome required is a form of scientific reasoning

In the EB, the ability to develop scientific skills is not emphasised.

In conclusion, syllabus and assessments of the two qualifications are very different.

6. 3. The scripts and their marking

One key surprise is the likeness of the outcomes of the EB and French bac: candidates write scientific text.

Criteria are very similar: argument, use of documents (knowledge in the French bac, or document in question paper in the EB).

6.1.1.1 Marking
In the EB, for each question, the mark scheme is specified in the question paper; in the French bac, the mark scheme of each exercise is given in the question paper. Candidates do not know the mark allocation between different questions.

At EB, there are several markers; in the French bac, only one.

Conclusion:
Compared to the assessment of Mathematics at French Baccalauréat, assessment in Mathematics at EB:
The two assessments show a similar, distinctive idea of the study of biology – both do not place explicit value on the critical issue of “experimental practice”: knowledge seems to be more important than aptitude to use and apply it.

1.95 Doc 1.5

Mapping Table – European Baccalaureate / Irish leaving Certificate Higher level Subject Biology

Syllabuses compared Irish leaving Certificate Higher level Baccalaureate (Higher)

38. Complete the first column with a detailed list of the topic areas covered in the European Baccalaureate syllabus.
39. Insert a tick, or similar, to show where the topic is covered by the comparator specification – please delete option columns if there are no options.
40. Include comments to describe where a topic is covered in greater depth in one or other specification, where possible estimate how much time it would take to deliver the extra depth.
41. (✓) indicates there is no specific learning outcome for the topic but it would inevitably be covered in the specification/syllabus by nature of other topics listed.

EB syllabus content **Year 6**	**Present in LC core**	**Present in LC option**	**Covered in greater depth in EB**	**Covered in greater depth in LC**
Chemical Composition of cells (biochemistry) **(15 hours)**	✓		✓	
DNA structure	✓		✓	
Enzymes (9 hours)				
role of catalysts	✓		✓	
structure of enzymes	✓		✓	

model of enzyme action	✓		✓	
factors that influence enzyme activity	✓		✓	
Cell structure (9 hours)				
structure and function of organelles	✓		✓	
prokaryotic cells v eukaryotic cells	✓		✓	
animal cells v plant cells	✓		✓	

EB syllabus content **Year 6**	**Present in LC I core**	**Present in LC option**	**Covered in greater depth in EB**	**Covered in greater depth in THE LC**
techniques for studying cells (other than microscopy)	✓			
Excitable cells (15 hours)				
structure and function of neurones	✓			
perception of stimuli	✓			
sense organs	✓		✓	
synaptic transmission	✓			

roles of synapses	✓			
structure of muscle cells	✓		✓	
muscular contraction (sliding filaments)				
Homeostasis (6 hours) one example	✓			
The body's defences (12 hours)				
self and non-self	✓		✓	
ABO and blood transfusion	✓			
MHC/HLA and grafting/transplants			✓	
types of antigens	✓			
cells of immune system	✓		✓	
origin and maturation of cells of immune system	✓		✓	
lymphocyte receptors				
non-specific response	✓			
specific response	✓			

EB syllabus content	**Present in LC**	**Present in the LC**		**Covered in greater depth in EB**	**Covered in greater depth in the LC**

Year 6	**core**	**option**			
clonal selection				✓	
antibody production	✓				
memory cells	✓				
allergies				✓	
autoimmune disorders				✓	
immunological deficiencies				V	
vaccinations	✓				
bone marrow grafts				✓	
Human and animal behaviour * (9 hours)					
innate behaviour				✓	
learned behaviour				✓	
social behaviour				✓	
Water resource management *or*	✓			✓	
Recycling / treatment of waste	✓			✓	

EB syllabus content **Year 7**	**Present in the LC core**	**Present in the LC option**	**Covered in greater depth in EB**	**Covered in greater depth in the LC**

Cell membranes (9 hours)				
fluid mosaic model of membrane structure	✓		✓	
movement across membranes	✓		✓	
Photosynthesis (9 hours)				
chloroplast structure and function	✓			
light dependent stage	✓			
light independent stage	✓		✓	
limiting factors			✓	
C4 plants			✓	
photorespiration			✓	
Respiration (9 hours)				
mitochondrion structure and function	✓		✓	
biochemistry of respiration	✓			✓
anaerobic respiration	✓		✓	
roles of ATP	✓			
relative gains of ATP in aerobic and anaerobic	✓		✓	
role of photosynthesis, etc in cycles of matter and energy	✓			
Classical genetics (9 hours)				

Mendelian genetics	✓		✓	
chromosome theory	✓		✓	
autosomal linkage	✓		✓	
crossing over				
chromosome mapping				
multiple alleles	✓		✓	
multiple genes (polygeny)				
epistasis				

EB syllabus content **Year 7**	**Present in the LC core**	**Present in the LC option**	**Covered in greater depth in EB**	**Covered in greater depth in the LC**
Molecular genetics (12 hours)				
DNA replication	✓		✓	
one gene: one polypeptide	✓			
genetic code	✓		✓	
transcription	✓			
transcription in prokaryotes				
transcription in eukaryotes			✓	

	✓			
translation	✓			
post-translation modification of proteins				
gene regulation (Jacob and Monod)				
genetic modification				
gene mutation	✓		✓	
chromosome mutation	✓		✓	
different forms of chromosome mutation	✓		✓	
genome mutation: aneuploidy polyploidy				
mutagenic agents	✓		✓	
Human heredity (6 hours)				
family trees / pedigrees	✓		✓	
twin studies				
amniocentesis	✓		✓	
cytogenetic studies				

hereditary diseases: gene mutations chromosome mutations sex-linked diseases	✓ ✓ ✓			

EB syllabus content **Year 7**	**Present in the LC core**	**Present in the LC option**	**Covered in greater depth in EB**	**Covered in greater depth in the LC**
Evolution (9 hours)				
classification	✓		✓	
evidence from classification	✓		✓	
process of fossilisation				
evidence from fossils	✓		✓	
Archaeopteryx				
evidence from comparative anatomy	✓		✓	
evidence from biochemistry				
evidence from karyotypes	✓		✓	
evidence from biogeography				
evidence from embryology	✓		✓	
relative and absolute dating of fossils				
Origin of life (3 hours)				
chemical evolution				

(Miller-Urey experiment)				
endosymbiosis	✓		✓	
Theories of evolution (2 hours)				
Lamarckism				
Darwinism	✓			
Neo-Darwinism				
Causes of variability	✓		✓	
Population genetics (2 hours)				
genetic drift				
polymorphisms				
Hardy-Weinberg				

EB syllabus content **Year 7**	**Present in the LC core**	**Present in the LC option**	**Covered in greater depth in EB**	**Covered in greater depth in the LC**
Natural selection (2 hours)				
industrial melanism	✓		✓	
convergence (analogy)				
species definition	✓			
allopatric speciation				
Human evolution (3 hours)				
Man, Australopithecines, great apes				

EB students study *either* innate behaviour and learned behaviour *or* social behaviour.

Content included in the LC syllabus but not in EB syllabus

Please any topics that are included in the LC specification but not in the EB syllabus

See separate documents

Comparison Table for comparison of assessment models

Use this table to make direct comparisons between the syllabuses in the following areas:

46. structure of the assessment model, including the format of assessment for the specification/syllabus
47. whether coursework is assessed, the kinds of coursework assessed and contribution to overall grade
48. whether oral assessment is part of the assessment model, and the extent and format of oral assessment
49. whether the assessment model is unit-based or requires candidates to take a synoptic view of the topics, and to what extent

NOTE: the prose commentary on the assessment models should draw attention to significant differences in the requirements for the European baccalaureate and A Level or IB.

	European Baccalaureate	**LC**
Assessment structure, format and timings	The EB is not a modular course. Marks from Biology contribute to the final baccalaureate as follows: 'A' marks given by teachers at the end of each semester in Year 7. The marks are given for performance in class work. The final 'A' mark is the average of the marks for the two semesters. A 'B' mark for a 2 ¼ hour examination set by the teacher (the 'Pre-Bac') and taken at the end of the first semester in Year 7. A 3 hour written examination or a 20 minute oral examination taken in May of Year 7 (the 'Bac'). The examination paper is divided into three sections: P, G and E. There are two questions of 40 marks each in sections P and G. The questions in section E are out of 20 marks each The	A three hour written examination covering two years' work and taken at the end of the course. The exam paper is organised as follows: Section A 9100marks): 5 out 0f 6 short answer questions, each worth 20 marks and answered on the question paper. Two questions from Part 1 of the syllabus, two from Part 2 and two from Part 3. Section B (60 marks): three questions, two of which must be answered – questions based on prescribed practical work. Section C (240 marks): 4 out of 6 long answer questions to be answered – answers on a separate booklet. One question from Part 1 of the syllabus, 2 from Part 2 and 3 from Part 3. Answers generally require a degree of explanation or description of a subject. There is little or no interpretation of data except an occasional reading of values from a graph, and occasionally a graph may have to be drawn from figures supplied.

	candidates choose one question from each section. P addresses section 7.1 of the syllabus covering cell membranes and energetics. G addresses section 7.2 covering genetics. E addresses section 7.3 covering evolution. Each question is subdivided into part questions. Some of these are simple recall questions; some involve drawing labelled drawings or constructing genetic diagrams. Some questions involve data analysis and interpretation. Candidates are not required to write discursive essays. The mark scheme gives solutions to the questions and suitable answers. The mark scheme is not a point mark scheme with marking points clearly indicated and separated from each other. In some cases two answers are required, but three marks are allocated. It is not clear how the three marks are applied. There is no mention of marks for quality of written communication in the mark schemes. The 'A' mark is aggregated with the marks for the 'Pre-Bac' and the 'Bac' to give a mark that contributes towards a final total out of 100 for the European Baccalaureate. The information provided does not mention opportunities for re-sitting before certification.	By contrast, the Bac exam has a very large component of interpretation data and is much more demanding in terms of higher level thinking. All answers are marked and the best combination which fulfils the rubric is awarded. In Section A excess wrong answers cancel correct answers. A unit mark of 3 per point is the norm but exceptions are fairly common. The marking scheme is rigid and there is little scope for individual interpretation, except possibly in diagrams and even then there are tight guidelines. Diagrams are usually given 6 marks if correct, 3 if one major part is missing and 0 if more than one major part is missing. Labels are marked without taking this diagram mark into consideration. For example, in T.S. of artery, three-layers/small lumen gets [6] marks, one layer missing gets [3] and two missing gets [0]. `Initially, a sample of 20 papers is taken at random from the markers bundle of scripts and marked according to the marking scheme and then sent to the advising examiner for checking. After this clarifications and modifications are given and all papers have to be re-marked. This is done so as to achieve uniformity of marking. About 5-10% of each examiner's scripts are checked by an advising examiner. Appeals are allowed. Following the publication of the results, each pupil may examine his/her paper and decide whether or not to appeal. Appeals (usually about 20% per marker) are remarked by a different examiner and then forwarded to the advising examiner. If there is any change the paper is marked afresh by the advising examiner. A further appeal may be made to the State Examination Commission.

Coursework assessment	Not a feature	There is no coursework assessment.
Oral examination	Candidates may select to take an oral examination instead of the written paper. Oral examinations last 20 minutes. Candidates are allowed a 20 minute preparation time. Marks are awarded by the candidate's teacher and an external examiner on a scale of 0 to 10. The final mark is the average of the two marks awarded.	None
Synoptic assessment		Not really a feature of the assessment process.

Summary conclusions

See separate documents

Comparison of syllabi.

Topics highlighted in with yellow are not covered in Leaving Certificate.
Topics with no comment in the right hand column are about the same in both BACC and LC.

BACC	Leaving Certificate
2 period year and 4 period year	2 levels – Higher / Ordinary
	180 hours – 5 periods per week
3 sections Topic / Core / Supplement [experiments]	4 sections in syllabus Topic / depth of treatment / contemporary issues / practical
Novel situations	Only prescribed situations
Compulsory subject	Optional subject
Exam questions guidelines	No guidelines
laid out over 4 years	over 2 years – not laid out year by year

Biology Year 4	
Syllabus content	
Characteristics of Living things	
Levels of organization	
Unicellular / multicellular	
Human Physiology	
Nutrients	Food tests and enzymes experiments
Digestion mechanical and chemical	Depth of cover??
Hydrolysis enzyme catalysed	not done in great detail
Absorption use storage of nutrients	
Healthy diet	
Alcoholism	Not specifically
Respiratory system	Exps vital capacity/ rate and gas exchange not done in LC - only Breathing rate in LC
Gaseous exchange in lungs	
Cellular respiration overall eqn.	Krebs cycle done in basic detail LC
smoking	
Transport	
Circulatory system blood and lymph	Experiments on pulse rate
Composition blood and lymph	Heart dissection
Roles in transport defence and clotting	
Cardiovascular diseases	
Excretion	
Urinary system – structure and function	Dissection of Pig Kidney
Roles of liver, lungs and skin in excretion	Dialysis
Plant physiology	
Structure and function relationships	

Leaf structure	
Balance of gas exchange	Not in any detail – compensation point no longer required.
Photosynthesis	details of light and dark phases required
Respiration	
Absorption of water and mineral ions	
Vascular tissue	
Transport in plant	
Ecology	
Ecosystem study	Field trips not required but encouraged
Biotic and abiotic factors	
Producers consumers decomposers	
Food chains / webs /pyramids of biomass / energy	Not pyramid of energy rather flow and 10% transfer Accumulation of toxins up food chain
Carbon cycle	
Protection of environment	
Year 5	
Communication within organism	Microscopic studies of all topics here
nervous	
Anatomy of brain, spinal chord, nerves Medicines and drugs	Experimental endocrinology – i.e. interpretation of removal or injection of glandular extracts experiment results
Reflex arc	
Hormone definition	
Overview of endocrine glands	
Reproduction	
Site of hereditary material	
Process of mitosis	
Role in growth, repair, reproduction	

Chromosomes and karyotype	
DNA simple structure	
DNA replication	
Meiosis and sexual reproduction	
Fertilisation Need for reduction in chromosome number Diagrams of meiosis	
Human Reproduction	
Male and female reproductive structures	Medically assisted procreation
Sperm formation and structure	
Egg formation and structure	
Hormonal influence on both	
Secondary sexual characteristics	
Intercourse and fertilisation	
Implantation and hormonal control of pregnancy	
Structure that protect and nourish foetus	
Birth	
Contraception – methods advantages inconveniences	
STDs causes, symptoms, prevention SIDA, Chlamydia, gonorrhoea, syphilis, herpes	Not in any real detail in LC
Genetics	
Monohybrid and Dihybrid crosses	
Genotype and phenotype	
Test cross	Not specified
Sex chromosomes	
Sex-linkage in Drosophila	not required
Human heredity	
Family trees	not required except in simple haemophilia
Blood group inheritance - Transfusion problems / Rh incompatibility in womb	very basic

Sex-linkage - Haemophilia and colour blindness	
Chromosomal mutations	only basic idea i.e. definition
Monosomy and trisomy	
Nutrition	
Food composition – carbohydrates, fats, proteins, vitamins, minerals, water	
Food tests	
Role of food components Energy growth, Importance of vitamins & minerals	
Food chains energy flow	
Balanced diets – vegetarian diets	
Dietry problems - Anorexia, malnutrition, Vitamin & mineral deficiencies Disorders from overeating	Meeting with dietician Cholesterol, Arteriosclerosis Visit a food industry company
Making and preserving food	
Processing and conserving techniques	
Disease Pathogens	
Pathogens bacteria, viruses and other parasites	Testing for infection
transmission of disease - Parasitic worms, Insect vectors - Airborne infections, Contagious diseases	
non-specific defence	
natural barriers - coagulation, phagocytosis,	allergic reactions
specific defence	
Humural and cellular reactions of immune system	
Environmental Interactions	
Nerves – cells, synapse and transmission	diseases of NS
Hormones – hormone action	
blood sugar level control	meeting with sports doctor
Elements of animal and human Behaviour	Relationship between animal and human behaviour – possible collaboration with philosophy course

Effects of chemicals on nervous system	
medicines and drugs	**meeting with specialists [psycologists, police, doctor, ex-drug addict etc.**
Impact of man on nature	
treatment and recycling of waste	
types, sorting, adding value, stocking, incineration, making compost.	**visit recycling centre**
Biodiversity plant and animal	**Visit botanic garden and zoo**
species in danger of extinction	
maintaining biodiversity	
Atmospheric pollution – gases, pollutants, acid rain, greenhouse effect, ozone	
Water purification	
Production and importance of drinking water	
sewage treatment	**visit sewage farm**

Leaving Certificate Biology

Suggested Time Allowance in Class Periods:

Unit 1		**Ordinary**	**Higher**
Sub-unit 1.1:	The Scientific Method	2	2
Sub-unit 1.2:	The Characteristics of Life	3	3
Sub-unit 1.3:	Nutrition	11	11
Sub-unit 1.4:	General Principles of Ecology	8	13
Sub-unit 1.5:	A Study of an Ecosystem	11	11
	TOTAL	**35**	**40**

Unit 2			
Sub-unit 2.1:	Cell Structure	9	9
Sub-unit 2.2:	Cell Metabolism	24	32
Sub-unit 2.3:	Cell Continuity	3	4
Sub-unit 2.4:	Cell Diversity	3	3
Sub-unit 2.5:	Genetics	27	36
	TOTAL	**66**	**84**
Unit 3			
Sub-unit 3.1:	Diversity of Organisms	14	17
Sub-unit 3.2:	Organisation and the Vascular Structures	21	24
Sub-unit 3.3:	Transport and Nutrition	15	16
Sub-unit 3.4:	Breathing System and Excretion	12	14
Sub-unit 3.5:	Responses to Stimuli	32	37
Sub-unit 3.6:	Reproduction and Growth	30	38
	TOTAL	**124**	**146**

4 sections to syllabus
Sub-unit and Topic / Depth of Treatment / Contemporary Issues and Technology / Practical Activities


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