



European School
IB Diploma Programme



IB DIPLOMA PROGRAMME European School

Student Handbook

A survival guide for your final two years of school, including details on TOK, CAS and EE



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Introduction

ES Mission Statement

“It is our commitment and goal at European School to bring up tolerant, intelligent, self-confident children who possess a genuine sense of social and moral responsibility.

We provide a caring community within which pupils can acquire the skills essential for self-education, enabling them to mature over time into successful accomplished professionals.

Our way: a new road to Europe based on our national values”.

IB Learner Profile

The aim of IB programmes is to develop internationally minded people who, recognizing their common humanity and shared guardianship of the planet, help to create a better and more peaceful world.

As IB learners we strive to be:

- **INQUIRERS:** We nurture our curiosity, developing skills for inquiry and research. We know how to learn independently and with others. We learn with enthusiasm and sustain our love of learning throughout life.
- **KNOWLEDGEABLE:** We develop and use conceptual understanding, exploring knowledge across a range of disciplines. We engage with issues and ideas that have local and global significance.
- **THINKERS:** We use critical and creative thinking skills to analyse and take responsible action on complex problems. We exercise initiative in making reasoned, ethical decisions.
- **COMMUNICATORS:** We express ourselves confidently and creatively in more than one language and in many ways. We collaborate effectively, listening carefully to the perspectives of other individuals and groups.
- **PRINCIPLED:** We act with integrity and honesty, with a strong sense of fairness and justice, and with respect for the dignity and rights of people everywhere. We take responsibility for our actions and their consequences.
- **OPEN-MINDED:** We critically appreciate our own cultures and personal histories, as well as the values and traditions of others. We seek and evaluate a range of points of view, and we are willing to grow from the experience.
- **CARING:** We show empathy, compassion and respect. We have a commitment to service, and we act to make a positive difference in the lives of others and in the world around us.
- **RISK-TAKERS:** We approach uncertainty with forethought and determination; we work independently and cooperatively to explore new ideas and innovative strategies. We are resourceful and resilient in the face of challenges and change.
- **BALANCED** We understand the importance of balancing different aspects of our lives- intellectual, physical, and emotional-to achieve well-being for ourselves and others. We recognize our interdependence with other people and with the world in which we live.
- **REFLECTIVE** We thoughtfully consider the world and our own ideas and experience. We work to understand our strengths and weaknesses in order to support our learning and personal development.

IB Mission Statement

The International Baccalaureate aims to develop inquiring, knowledgeable and caring young people who help to create a better and more peaceful world through intercultural understanding and respect.

To this end the organization works with schools, governments and international organizations to develop challenging programmes of international education and rigorous assessment.

These programmes encourage students across the world to become active, compassionate and lifelong learners who understand that other people, with their differences, can also be right.



1. IB Programme at the European School

ES offers IB Diploma Programme

- Students in the IB Diploma Programme must study at least 3 subjects at Higher Level (HL) and at least 2 at Standard Level (SL) selected from the six groups / electives offered. In addition these students must complete an Extended Essay (EE), Theory of Knowledge course (ToK) and meet the Creativity, Action and Service (CAS) requirements.
- At the end of the courses IB Diploma Programme, students will obtain the IB Diploma, DP Course Results, ES transcript, ES activity record and ES school leaving certificate.

2. The IB Diploma Programme

2.1. Recognition of the IB Diploma

The IB actively promotes wide recognition and acceptance of the IB diploma as a basis for entry to courses at universities and other institutions of higher education, but the requirements of individual institutions and the relevant authorities of a country are

subject to change beyond the IB's control. Candidates bear the responsibility of verifying the entry requirements of the universities and other institutions of higher education to which they are interested in applying.

2.2 Use of candidate data

Date relating to a candidate including data such as name, address, email addresses, date of birth, and phone numbers may be used for the following purposes:

- registering candidates in the DP and administering the DP
- to provide DP support and services for the candidate including providing information to institutions of higher education (such as universities and colleges or governmental authorities related to admission to institutions of higher education)
- research and statistical analysis related to the IB Organization's mission
- advertising and promotional purposes for the IB Organization
- educational, training, commercial and other compatible purposes
- to engage in and process transactions with the candidate or school
- to fulfill statutory, regulatory, reporting and/or legal obligations.

Candidates or their legal guardians may inquire as to the nature of the candidate data processed about him or her by their school to the extent permitted under data protection or privacy law applicable to the candidate and their respective School.

2.3 Content of the IB Diploma Programme

Candidates for the IB diploma must satisfy assessment requirements in six subjects and the core, each studied over a period of two years.

- The six subjects must be selected from six groups as prescribed by the IB for the appropriate examination session.
- At least three and not more than four subjects being offered at Higher Level and the others at Standard Level.
- Approximately 240 hours to complete Higher Level courses and 150 hours to complete Standard Level courses
- In addition to the six subjects, candidates for the IB diploma must:
 - take a course in Theory Of Knowledge (TOK) and complete the required assessment. This 100 hour course runs over the two-year period of the Diploma Programme
 - complete an approved programme of extra-curricular activities known as CAS
 - Opportunities are created at ES for our students to be involved in creative pursuits, physical activities and service projects in the local, national and international contexts. These three elements of Creativity, Action and Service are not mutually exclusive and students' involvement in these interwoven areas should challenge them to develop a value system which enhances their personal growth and fosters more caring and socially responsible attitudes.
 - complete and submit for assessment an Extended Essay (EE) in a subject available for this purpose.
 - At ES, we conduct a briefing session for all students in the Diploma Programme to prepare them for the task of the Extended Essay. An introduction to academic writing and the research and writing process, a briefing on objectives and requirements, assessment criteria of the

Extended Essay and a survey of good and bad research questions are some aspects that are included. After the session, students will be given some time to make their choice of subject and topic. Thereafter, a supervisor will be assigned to guide them through the research and writing process.

Additional guidance will be provided through our Academic Writing curriculum.

2.4 Registration

All students must be registered by the school's DP coordinator for each intended examination session and must take the requisite courses and examinations within the school. Registrations and payment of fees must be made by the relevant deadlines.

The following categories of registration are available:

- Diploma: candidates intending to complete the requirements for the award of an IB diploma.
- Retake: Diploma candidates who are seeking to improve on their results. The highest grade obtained for a subject will contribute towards the IB diploma.

2.5 Responsibilities of candidates

Candidates are required to act in a responsible and ethical manner throughout their participation in the Diploma Programme and examinations. In particular, candidates must avoid any form of malpractice.

Any form of malpractice may disqualify the candidate from the award of the Diploma.

2.6 Assessment

Examiners are appointed by the IB to assess candidates' work in Diploma Programme examinations and other forms of external assessment using common markschemes. Most courses also require additional work which is internally assessed and externally moderated. (All components must be submitted for assessment to receive a grade for a course.)

2.7 Grades

Performance in each subject is graded on a scale of 7 points (maximum) down to 1 point (minimum). Performance in theory of knowledge and the extended essay are each graded on a scale of A (maximum) to E (minimum). The CAS requirement is not assessed. For the IB Diploma, a maximum of 3 points is awarded for combined performance in theory of knowledge and the extended essay. The maximum total DP points score is 45.

Table 1: Point obtained and description of achievement

Point	Description
7	Excellent
6	Very Good
5	Good
4	Satisfactory
3	Weak
2	Poor
1	Very Poor

Table 2: Point matrix for grades obtained for TOK and EE

ToK/EE	A	B	C	D	E
A	3	3	2	2	Failing condition
B	3	2	2	1	
C	2	2	1	0	
D	2	1	0	0	
E	Failing condition				

2.8 IB diploma requirements

All assessment components for each of the six subjects and the additional Diploma requirements must be completed in order to qualify for the award of the IB Diploma.

The IB Diploma will be awarded to a candidate provided all the following requirements have been met.

- CAS requirements have been met.
- The candidate's total points are 24 or more.
- There is no "N" awarded for theory of knowledge, the extended essay or for a contributing subject.
- There is no grade E awarded for theory of knowledge and/or the extended essay.
- There is no grade 1 awarded in a subject/level.
- There are no more than two grade 2s awarded (HL or SL).
- There are no more than three grade 3s or below awarded (HL or SL).
- The candidate has gained 12 points or more on HL subjects (for candidates who register for four HL subjects, the three highest grades count).
- The candidate has gained 9 points or more on SL subjects (candidates who register for two SL subjects must gain at least 5 points at SL).

A maximum of three examination sessions is allowed in which to satisfy the requirements for the award of the IB Diploma. The sessions need not be consecutive.

2.9 Form of the results

Diploma Candidates

Successful IB Diploma Candidates will receive an IB Diploma and a document entitled "Diploma Programme (DP) Results" listing the total IB Diploma points score, the subject grades, confirmation of the completion of all CAS requirements and any points awarded and individual grades for the combination of theory of knowledge and the extended essay. An IB Diploma Candidate who fails to satisfy the requirements for the award of an IB Diploma will receive DP Course Results indicating the grades obtained in individual subjects, together with results in theory of knowledge and the extended essay, and confirmation of the completion of all CAS requirements, as appropriate.

Bilingual IB Diploma Candidates

The bilingual diploma is awarded to a successful candidate who fulfills one or both of the following criteria:

- completion of two languages selected from group 1 with the award of a grade 3 or higher in both
- completion of one of the subjects from group 3 or group 4 in a language that is not the same as the candidate's group 1 language. The candidate must attain a grade 3 or higher in both the group 1 language and the subject from group 3 or 4.

Diploma Programme Course Candidates

DP Course Candidates receive Diploma Programme Course Results (DP Course Results) indicating the results obtained in individual subjects and the core requirements, as appropriate.

2.10 Inquiry upon results

A candidate's assessment material may be re-marked, returned to the school (in electronic format or as a photocopy) and/or subject to re-moderation (for internal assessment) as part of the enquiry upon results service, the details and fees for which can be obtained from the school's DP coordinator.

Re-marking a candidate's assessment material may lead to a higher or a lower grade for the subject.

2.11 Special cases

A learning support requirement(s) is any permanent or temporary requirement(s) that could put a candidate at a disadvantage and prevent him or her from being able to demonstrate their skills and knowledge adequately or as may otherwise be defined by law. The IB Organization is able to authorize inclusive assessment arrangements for a candidate with assessment access requirements. Requests for this consideration are made through the school's DP coordinator.

If a candidate's performance has been affected by adverse circumstances, the final award committee may give special consideration to the case, provided that this would not give an advantage in comparison with other candidates. Requests for this consideration are made through the school's DP coordinator.

2.12 Candidates with incomplete assessment

"Incomplete assessment" means that a candidate has not submitted one or more components of the assessment requirements in a subject. In cases of incomplete assessment in a subject, the IB Organization may, at its discretion, award a grade for the subject if an acceptable reason is provided by the school for the incomplete assessment being beyond the candidate's control, and the candidate has submitted sufficient work, leading to at least 50 per cent of the total marks available in that subject and including an externally assessed component. Any application for special consideration in cases of incomplete assessment must be submitted to the IB Organization by the school's DP coordinator on behalf of the candidate. The application must be received within 10 calendar days of the completion of the final assessment component of the subject

2.13 Malpractice

Candidates suspected of academic misconduct

The IB Organization defines academic misconduct as behaviour (whether deliberate or inadvertent) that results in, or may result in, the candidate or any other candidate gaining an unfair advantage in one or more components of assessment. Behaviour that may disadvantage another candidate is also regarded as academic misconduct. Academic misconduct is a breach of these regulations and includes, but is not restricted to, the following:

- plagiarism—this is defined as the representation, intentionally or unintentionally, of the ideas, words or work of another person without proper, clear and explicit acknowledgment

- collusion—this is defined as supporting academic misconduct by another candidate, for example, allowing one’s work to be copied or submitted for assessment by another
- duplication of work—this is defined as the presentation of the same work for different assessment components and/or DP core requirements
- misconduct during an IB examination (for example, taking unauthorized material into an examination, behaviour that disrupts the examination or distracts other candidates, or communicating with another candidate)
- any other behaviour that gains an unfair advantage for a candidate or that affects the results of another candidate (for example, falsifying a CAS record, disclosure of information to and receipt of information from candidates about the content of an examination paper within 24 hours after a written examination via any form of communication/media).

Procedure on malpractice

When a school, an examiner or the IB Organization establishes evidence to suspect academic misconduct by a candidate, the school will be required to conduct an investigation and provide the IB Organization with statements and other relevant documentation concerning the case.

Candidates suspected of academic misconduct must be invited, through the school’s DP coordinator, to present a written statement that addresses the suspicion of academic misconduct.

The outcome is determined by the IB Organization

Note: Section 2 of the ES Handbook for Students is based on *General regulations: Diploma Programme* published on behalf of the International Baccalaureate Organization. A copy of the complete document is available from the DP Coordinator.

3. Responsibility of IB Students

- There is an expectation that IB students model exemplary behaviour, conduct and appearance.
- All students must adhere to the discipline policy in the Student Planner.
- Maintain good standing at the school.
- Candidates are required to act in a responsible and ethical manner throughout their participation in the Diploma Programme and examinations. In particular, candidates must avoid any form of malpractice.
- IB students are required to attend classes on a regular basis to meet the minimum instructional hours set by the IB.

Any form of malpractice may disqualify the candidate from the award of the Diploma.

Candidates who are not in good standing with the school are not eligible to take the IB exams.

4. School Examinations and Assessments

4.1 Assessment schedule

Grade 11

- End of year examinations will normally take place in the month of May/June.

Grade 12

- Mock examinations will be held in March/April.
- Lessons will resume after the mock examination and attendance is expected.
- IB Diploma Programme examinations will normally commence in May.

After the IBDP exams Grade 12 students will only be expected to report to school for the prize-giving ceremony, graduation rehearsals and graduation.

4.2 Anticipated grades for university admittance

Colleges and universities frequently require predicted grades on applications for admission.

Predicted grades will be computed according to the DP Subject Guide assessment weightings for each subject on Manage Bac.

Anticipated grades are usually given to a student to send to the universities. In case the candidate needs it before the DP XII 1st mid-semester report is published, grade XI final grades must be used. In other case the anticipated grade will be calculated in the following way. Grade XI grade will be 40% and grade XII mid-term grade – 60%.

Under the special circumstances the review of computed anticipated grade is possible in grade XII.

Note: Students who require Extended Essay (EE) grades for college/university applications must submit their final essay to their supervisor by 15 September.

4.3 Format of ES assessments

Grade 11 – grade will be calculated considering the 1st semester grade (40%) and 2nd semester grade (60%), end-of-year exam grades will be a part of 2nd semester grade.

Grade 12 – (format identical to IB exams) -see Appendix A

DP Course descriptions offered at ES - see Appendix B

APPENDIX A - IB SUBJECT ASSESSMENT FORMAT

Group 1 Subjects

LANGUAGE A: Literature

i) Higher Level

External Assessment: 70 %

Paper 1 Literary commentary The paper consists of two passages: one prose and one poetry. Students choose one and write a literary commentary. (20 marks)	2 hrs	20%
Paper 2 Essay The paper consists of three questions for each literary genre. In response to one question students write an essay based on at least two works studied in part 3. (25 marks)	2 hrs	25%

Written Assignment: 25%

Students submit a reflective statement and literary essay on one work studied in part 1. (25 marks)

The reflective statement must be 300-400 words in length.

The essay must be 1200-1500 words in length.

Internal Assessment (30 %)

Individual oral commentary and discussion 15% (20 minutes)

Formal oral commentary on poetry studied in part 2 with subsequent questions (10 minutes) followed by a discussion based on one of the other part 2 works (10 minutes). (30 marks)

Individual Oral Presentation: 15% (10-15 minutes)

The presentation is based on works studied in part 4. It is internally assessed and externally moderated through the part 2 internal assessment task. (30 marks)

ii) Standard Level

External Assessment: 70 %

Paper 1 Guided literary analysis The paper consists of two passages: one prose and one poetry. The students choose one and write a guided literary analysis in response to two questions. (20 marks)	1 hr 30 mins	20%
Paper 2 Essay The paper consists of three questions for each literary genre. In response to one question students write an essay based on at least two works studied in part 3. (25 marks)	1 hr 30 mins	25%

Written Assignment: 25%

Students submit a reflective statement and literary essay on one work studied in part 1. (25 marks)
The reflective statement must be 300-400 words in length. The essay must be 1200-1500 words in length.

Internal Assessment (30 %)

Individual oral commentary 15% (10 minutes)

Students present a formal oral commentary and answer subsequent questions on an extract from a work studied in part 2. (30 marks)

Individual Oral Presentation: 15% (10-15 minutes)

The presentation is based on works studied in part 4. It is internally assessed and externally moderated through the part 2 internal assessment task. (30 marks)

LANGUAGE A: Language and Literature

i) Higher Level

External Assessment: 70%

Paper 1 Comparative textual analysis The paper consists of two pairs of unseen texts. Students write a comparative analysis of one pair of texts. (20 marks)	2 hrs	25%
Paper 2 Essay: In response to one of six questions students write an essay based on at least two of the literary texts studied in part 3. The questions are the same at SL but the assessment criteria are different. (25 marks)	2 hrs	25%)

Written Assignment: 20%

Students produce at least four written tasks based on material studied in the course. Students submit two of these tasks for external assessment. (20 marks for each task) One of the tasks submitted must be a critical response to one of the prescribed questions for the HL additional study.

Each task must be 800-1000 words in length plus a rationale of 200-300 words.

Internal Assessment: 30% Individual oral commentary: 15%

Students comment on an extract from a literary text studied in part 4 of the course. (30 marks)

Further oral activity: 15%

Students complete at least two further oral activities, one based on part 1 and one based on part 2 of the course.

The mark of one further oral activity is submitted for final assessment. (30 marks)

ii) Standard Level

External Assessment: 70%

Paper 1 Textual analysis The paper consists of two unseen texts. Students write an analysis of one of these texts. (20 marks)	1 hr 30 mins	25%
Paper 2 Essay In response to one of six questions students write an essay based on both the literary texts studied in part 3. The questions are the same at SL but the assessment criteria are different. (25 marks)	1 hr 30 mins	25%

Written Assignment: 20%

Students produce at least three written tasks based on material studied in the course. Students submit one written task for external assessment. (20 marks)

The task must be 800-1000 words in length plus a rationale of 200-300 words.

Internal Assessment: 30% Individual oral commentary: 15%

Students comment on an extract from a literary text studied in part 4 of the course. (30 marks)

Further oral activity: 15%

Students complete at least two further oral activities, one based on part 1 and one based on part 2 of the course.

The mark of one further oral activity is submitted for final assessment. (30 marks)

Group 2 – Language Acquisition Subjects

Language B

i) Higher Level

External Assessment: 50%

Paper 1 Receptive skills Text-handling exercise on five written texts, based on the core.	1 hr 30 mins	25%
Paper 2 Written productive skills Two compulsory writing exercise Section A: One task of 250-400 words, based on the options, to be selected from a choice of five. Section B: Response of 150-250 words to a stimulus text, based on the core.	1 hr 30 mins	25%

Written Assignment: Receptive and written productive skills - 20%

Creative writing of 500-600 words plus a 150-word rationale, based on one of the literary texts read.

Internal assessment: 30%

Individual oral (8-10 minutes) – 20%

Based on the options: 15 minutes' preparation time and a 10-minute (maximum) presentation and discussion with the teacher.

Interactive Oral Activity – 10%

Based on the core: Three classroom activities assessed by the teacher.

ii) Standard Level

External Assessment: 50%

Paper 1 Receptive skills - Text-handling exercise on four written texts, based on the core.	1 hr 30 mins:	25%
Paper 2 Written productive skills - One writing exercise of 250-400 words from a choice of five, based on the options.	1 hr 30 mins	25%

Written Assignment: Receptive and written productive skills: 20%

Inter-textual reading followed by a written exercise of 300-400 words plus a 100-word rationale, based on the core.

Internal assessment: 30%

Individual oral (8-10 minutes) – 20%

Based on the options: 15 minutes' preparation time and a 10-minute (maximum) presentation and discussion with the teacher.

Interactive Oral Activity – 10%

Based on the core: Three classroom activities assessed by the teacher.

LANGUAGE B: Ab initio

External Assessment: 75%

Paper 1 Receptive skills - Understanding of four written texts. (40 marks) Text-handling exercises.	1 hr 30 mins	30%
Paper 2 Productive skills Two compulsory writing exercises (25 marks) Section A (7 marks) One question to be answered from a choice of two. Section B (18 marks) One question to be answered from a choice of three.	1 hr	25%

Written Assignment: Receptive and productive skills - 20%

A piece of writing, 200-300 words, in the **target language** carried out in class under teacher supervision. (20 marks)

Internal assessment: 25% Individual oral (10 minutes) – 25%

Three-part internally assessed by the teacher and externally moderated by the IB towards the end of the course.

- Part 1: Presentation of a visual stimulus (from a choice of two) by the student
- Part 2: Follow-up questions on the visual stimulus
- Part 3: General conversation including at least two questions on the written assignment

Group 3 - Individuals and Societies Subjects

BUSINESS MANAGEMENT

i) Higher Level

External Assessment: 75%

<p>Paper 1 Based on a case study issued in advance, with additional unseen material included in sections B and C.</p> <p>Section A Students answer three structured questions in total from a choice of four. Maximum marks is 30.</p> <p>Section B Students answer one compulsory structured question.</p> <p>Section C Students answer one compulsory extended response question primarily based on HL extension topics.</p>	2 hrs 15 mins	35%
<p>Paper 2</p> <p>Section A Students answer one of two structured question based on stimulus material with a quantitative focus.</p> <p>Section B Students answer two of three structured questions based on stimulus material.</p> <p>Section C Students answer one of three extended response questions. This question is based primarily on two concepts that underpin the course.</p>	2 hrs 15 mins	40%

Internal assessment: 25 %

Students research and report on an issue facing an organization or a decision to be made by an organization (or several organizations). Maximum 2000 words.

ii) Standard Level

External Assessment:75%

<p>Paper 1 Based on a case study issued in advance, with additional unseen material included in section B.</p> <p>Section A Students answer three of four structured questions.</p> <p>Section B Students must answer one compulsory structured question.</p>	1 hr 15 mins	35 %
<p>Paper 2</p> <p>Section A Students answer one of two structured questions based on stimulus material with a quantitative focus.</p> <p>Section B Students answer one of three structured questions based on stimulus material.</p> <p>Section C Students answer one of three extended response questions. This question is based primarily on two concepts that underpin the course.</p>	1 hr 45 mins	40 %

Internal assessment: 25% Written commentary

Students produce a written commentary based on three to five supporting documents about a real issue or problem facing a particular organization. Maximum 1500 words.

Geography

i) Higher Level

External Assessment: 80%

Paper 1 Section A Four compulsory short-answer questions covering each of the four topics • within the core theme. Section B One extended response question from a choice of three.	1 hr 30 mins	25%
Paper 2 HL students must answer one question from three optional themes; that is, they must produce three responses in total.	2 hrs	35%
Paper 3 Students are required to answer one essay question from a choice of three.	1 hr	20%

ii) Standard Level

External Assessment: 75%

Paper 1 Section A Four compulsory short-answer questions covering each of the four topics • within the core theme. Section B One extended response question from a choice of three.	1 hr 30 mins	40%
Paper 2 For each of the seven optional themes there is a choice of two questions. SL students must answer one question from two optional themes; that is, they must produce two responses in total.	1 hr 20 mins	35%

Internal Assessment HL – 20%, SL - 25%

The fieldwork study must be related to material in a specific sub-topic or development column listed in the syllabus, whether it is from the core theme, the optional themes or the HL extension. It can combine two or more topics or themes.

The fieldwork must be on a local scale and involve the collection of primary information. The chosen topic may be physical or human, or may integrate the two approaches.

Initial data collection may be a group effort or an individual effort, however the analysis, evaluation, treatment of the data, and conclusion **MUST** be by the individual student alone.

Students should produce **ONE** written report of their investigation. The report must **NOT** exceed 2,500 words and be written in APA format.

A total of approximately 20 hours should be allotted to the IA work at both the SL and HL levels. This should include: An explanation of the Internal Assessment, a review of ethical guidelines and risk assessment, time at the survey site, in-class time, consultation time, and any review and time for monitoring progress of the IA.

HISTORY

i) Higher Level

External Assessment: 80%

Paper 1 A document-based paper set on prescribed subjects drawn from the 20 th century world history topics.	1 hr	20 %
Paper 2 An essay paper based on the 20 th century world history topics.	1 hr 30 mins	25%
Paper 3 An essay paper based on one of the regional options.	2 hrs 30 mins	35 %

Internal assessment: 20%

Historical Investigation

Students must undertake a historical investigation.

Internally assessed by the teacher and externally moderated.

ii) Standard Level

External Assessment: 75%

Paper 1 A document-based paper set on prescribed subjects drawn from the 20 th century world history topics.	1 hr	30%
Paper 2 An essay paper based on the 20 th century world history topics.	1 hr 30 mins	45%

Internal assessment: 25%

Historical Investigation

Students must undertake a historical investigation.

Internally assessed by the teacher and externally moderated.

Group 4 - Sciences Subjects

BIOLOGY, PHYSICS

Assessment

(i) Higher Level

External Assessment: 80%

Paper 1 Multiple-choice questions on the core and AHL material	1 hr	20 %
Paper 2 <ul style="list-style-type: none">• Data-based question.• Short-answer and extended-response questions on core and AHL material.• Two out of three extended response questions to be attempted by candidates.	2 hrs 15 mins	36 %
Paper 3 <ul style="list-style-type: none">• Section A: short-answer questions based on experimental skills and techniques, analysis and evaluation, using unseen data linked to the core material.• Section B: short-answer and extended-response questions from one option.	1 hr 15 mins	24 %

Internal assessment: 20%

Individual investigation assessed on personal engagement, exploration, analysis, evaluation, and communication.

(ii) Standard Level

External Assessment: 80%

Paper 1 Multiple-choice questions on core material	45 mins	20 %
Paper 2 <ul style="list-style-type: none">• Data-based question.• Short-answer and extended-response questions on core material.• One out of two extended response questions to be attempted by candidates.	1 hr 15 mins	40 %
Paper 3 This paper will have questions on core and SL option material. <ul style="list-style-type: none">• Section A: short-answer questions based on experimental skills and techniques, analysis and evaluation, using unseen data linked to the core and SL option material.• Section B: short-answer and extended-response questions from one option.	1 hr	20 %

Internal assessment: 20%

Individual investigation assessed on personal engagement, exploration, analysis, evaluation, and communication.

COMPUTER SCIENCE

(ii) Standard Level

External Assessment: 70%

Paper 1 Section A (30 minutes approximately) consists of several compulsory short answer questions. The maximum mark for this section is 25. Section B (60 minutes approximately) consists of three compulsory structured questions. The maximum mark for this section is 45.	1 hr 30 mins	45 %
Paper 2 Paper 2 is an examination paper linked to the option studied. The paper consists of between two and five compulsory questions. (45 marks)	1 hr	25 %

Internal assessment: 30%

The development of a computational solution. Students must produce:

- a cover page that follows the prescribed format
- a product
- supporting documentation (word limit 2,000 words).

(34 marks)

Group 4 project (10 hours)

To be assessed using the criterion Personal skills. (6 marks)

(total 40 marks)

Group 5 - Mathematics Subjects

MATHEMATICS HL

External Assessment: 80%

Paper 1 Section A Compulsory short-response questions on core Section B Extended-response questions on core	2 hrs	30 %
Paper 2 Section A Compulsory short-response questions on core Section B Compulsory extended-response questions on the core	2 hrs	30 %
Paper 3 Compulsory extended-response questions on the syllabus options	1 hr	20%

Internal assessment: 20%

Mathematical exploration

Internal assessment in mathematics HL is an individual exploration. This is a piece of written work that involves investigating an area of mathematics. (20 marks)

MATHEMATICS SL

External Assessment: 80%

Paper 1 Section A Compulsory short-response questions	1 hr 30 mins	40 %
Section B Compulsory extended-response questions		
Paper 2 Section A Compulsory short-response questions	1 hr 30 mins	40 %
Section B Compulsory extended-response questions		

Internal assessment: 20%

Mathematical exploration

This is a short report written by the student based on a topic chosen by him or her, and it should focus on the mathematics of that particular area.

MATHEMATICAL STUDIES SL

External Assessment: 80%

Paper 1 Compulsory short-response questions	1 hr 30 mins	40 %
Paper 2 Compulsory extended-response questions	1 hr 30 mins	40 %

Internal assessment: 20% Individual project

This is a piece of written work based on personal research involving the collection, analysis and evaluation of data.

DP Course description you are offered at ES

Group 1 Language A

European School IB Diploma programme offers the students the following Group 1 subjects:

Language A: Literature SL / HL

Language A: Language and Literature SL / HL

The Language A course is built on the assumption that language and literature are concerned with our conceptions, interpretations and experiences of the world. The study of language helps us understand the influences on us from language around us and the study of literature can be seen as an exploration of the representation of the complex pursuits, anxieties, joys and fears to which human beings are exposed in their daily lives.

The IB has a policy of mother-tongue entitlement that promotes respect for the literary heritage of a student's home language and provides an opportunity for students to continue to develop oral and written skills in their mother tongue while studying in a different language of instruction. This means that whatever your mother tongue is, we will try to provide you a Language A course in it.

The Language A programme is a course studied in the "first language" of the student or the language in which the student is most comfortable. If the student is sufficiently fluent and motivated, it is possible to take a second Language A course in place of a Group 2 language (see group 2 subjects).

In 2011 we offered Georgian Language A Literature and Russian Language A Literature self-taught. In 2012, we will offer Georgian Language A Literature, Russian Language A Literature (self-taught) and English Language A Language and Literature. Note: Georgian students with mother tongue Georgian must take their language in this group.

Group 1 aims

The aims of **language A: literature** and **language A: language and literature** at SL and at HL are to:

1. introduce students to a range of texts from different periods, styles and genres
2. develop in students the ability to engage in close, detailed analysis of individual texts and make relevant connections
3. develop the students' powers of expression, both in oral and written communication
4. encourage students to recognize the importance of the contexts in which texts are written and received
5. encourage, through the study of texts, an appreciation of the different perspectives of people from other cultures, and how these perspectives construct meaning
6. encourage students to appreciate the formal, stylistic and aesthetic qualities of texts
7. promote in students an enjoyment of, and lifelong interest in, language and literature.

Language A: literature aims

8. develop in students an understanding of the techniques involved in literary criticism
9. develop the students' ability to form independent literary judgments and to support those ideas.

Language A: language and literature aims

10. In addition, the aims of the language A: language and literature course at SL and at HL are to:

11. develop in students an understanding of how language, culture and context determine the ways in which meaning is constructed in texts
12. encourage students to think critically about the different interactions between text, audience and purpose.

Georgian A 1 - Literature

The programme we offer to students is balanced and cohesive. Students have the possibility to make links within variety of literary works. Through the study of a wide range of literature, the language A: literature course encourages students to appreciate the artistry of literature and to develop an ability to reflect critically on their reading. Works are studied in their literary and cultural contexts, through close study of individual texts and passages, and by considering a range of critical approaches. The study of world literature works in translation is especially important in introducing students, through literature, to other cultural perspectives.

According to IB Language A1 standards this course includes World Literature in translation as well as Georgian literature. In our curriculum we have included the works of famous world writers such as Shakespeare, Faulkner, Akutagawa, Márquez and Pasternak.

As well as the reading and close analysis of these author's works, students are encouraged to appreciate the different perspectives of people from other cultures and to consider the role that culture plays in making sense of literary works. In addition, our course does not only teach these particular literary works, but it gives students the understanding that reading literature is a lifelong enjoyment.

Language A Literature is offered at both Higher Level (HL) and Standard Level (SL).

The distinction between SL and HL in Literature course

Part of the course	SL	HL
Part 1: Works in translation	Study of two works in translation from the prescribed literature in translation (PLT) list	Study of three works in translation from the prescribed literature in translation (PLT) list
Part 2: Detailed study	Study of two works, each of a different genre, chosen from the prescribed list of authors (PLA)	Study of three works, each of a different genre (one of which must be poetry), chosen from the prescribed list of authors (PLA)
Part 3: Literary genres	Study of three works of the same genre, chosen from the PLA	Study of four works of the same genre, chosen from the PLA
Part 4: Options	Study of three works freely chosen	Study of three works freely chosen
External assessment	SL	HL
Paper 1: Literary analysis	A literary analysis of a previously unseen passage in response to two guiding questions	A literary commentary on a previously unseen passage
Internal assessment	SL	HL
Individual oral commentary	A 10-minute oral commentary based on an extract from one of the works studied in part 2	A 10-minute oral commentary on poetry studied in part 2, followed by a discussion based on one of the other two works studied

DP Assessment weighting for final end of semester and end of year High School grades

Assessment	Weighting
Writing task	10%
Oral activities	10%
Paper	20%
Exam	60%

English A: Language and literature

Course outline

The course is designed for students who have experience of using the language of the course in an academic context. The language background of students varies considerably-from monolingual student to student with more complex language profiles. The students study the texts both, literary and non- literary and analyze form, content, purpose and audience through the social, historical, cultural contexts. The course develops an understanding of “critical literacy” in students and contributes to a global perspective promoting an insight and understanding of the different ways in which cultures influence and shape the experience of life common to all humanity

The aim of the course

- Introduce students to a range of texts from different periods, styles and genres
- Develop in students the ability to engage in close, detailed analysis of individual texts and make relevant connections
- Develop the students’ powers of expression, both in oral or written communication
- Encourage students to recognize the importance of the contexts in which texts are written and received
- Encourage, through the study of texts, an appreciation of the different perspectives of people from other cultures, and how these perspectives construct meaning
- Encourage students to appreciate the formal, stylistic and aesthetic qualities of texts
- Promote in students enjoyment of, and lifelong interest in language and literature
- Develop in students an understanding of how language, culture and content determine the ways in which meaning is constructed in texts
- Encourage students to think critically about the different interactions between text, audience and purpose

The distinction between SL and HL

Part of the course	SL	HL
Part 1 and 2: Language in cultural context, and language and mass communication	Fewer topics covered in order to achieve learning outcomes than at HL	More topics covered in order to achieve learning outcomes than at SL
Part 3: Literature-texts and context	Study of two works, one of which is a text in translation from the prescribed literature in translation (PLT) list	Study of three works, one or two of which is (are) a text(s) in translation from the prescribed literature in translation (PLT) list
Part 4 Literature-critical study	Study of two works chosen from the prescribed list of authors (PLA) for the language A studied	Study of three works chosen from the prescribed list of authors (PLA) for the language A studied
Written tasks	Production of three written tasks, one of which is submitted for external assessment	Production of four written tasks, two of which are submitted for external assessment. One of the assessed tasks must be a critical response to one of six questions
Paper 1: Textual analysis	An analysis of one non-literary text or extract (1 hour and 30 minutes)	A comparative analysis of a part of texts, at least one of which is non-literary (2 hours)

DP Assessment weighting for final end of semester and end of year High School grades

Assessment	Weighting
Writing task	10%
Oral activities	10%
Paper	20%
Exam	60%

Prior learning

There are no formal requirements for students undertaking the group 1 courses. Students who take these courses will often have varied language profiles and may be multilingual. While it is recommended that students have had experience of writing critical essays about texts, not having done so should not exclude them from studying language A.

Group 2

English B Course description:

The course develops all the aspects of language learning. The study of vocabulary and complex grammar structures will facilitate the accurate use of the English language.

The focus of the course is to provide students with the opportunity to study and use the language, to analyze texts, to raise their cultural awareness and develop interaction and communication

In accordance with the main philosophy of the programme, the consciousness of internationalism is the key issue in our course. While exploring any aspect from the wide variety of resources used, we will try to foster a genuine understanding and respect for all nations and cultures. Through studying different values from around the world students will broaden their knowledge and increase their international awareness.

The literature part of the course will focus on speaking, reading and writing about different literary genres: poetry, short story and the novel. By analyzing the texts, stories, novels, poetry the students will develop the attitude of tolerance, empathy, respect to all the nations in the world, appreciate internationalism, own and other people's culture.

All assignment will help the students develop their critical and analytical skills, draw connections, synthesize ideas, research and utilize outside sources to support the arguments, understand literary devices, make analysis verbally or in the written way.

The topics of the course are closely linked, timeless and universal. They intend to develop and define their language skills and focus on the student's self - expression. The students will be skilled to identify the themes that cut across cultural and linguistic boundaries and facilitate the critical and analytical judgment, discuss and debate the controversial issues, identify conflict areas, refute ethically, generalize the ideas and research the materials.

DP Assessment weighting for final end of semester and end of year High School grades

Assessment	Weighting
Writing task	10%
Oral activities	10%
Paper	20%
Exam	60%

English B

Course Outline

Language B is language acquisition course developed at two levels-standard level (SL) and higher level (HL) for students with some previous learning of the target language (FC Certificate Level). The material designed for these courses will enable the students to develop mastery of language skills and intercultural understanding.

The aims of Language B:

- Develop students' intercultural understanding
- Enable students to understand and use the language they have studied in a range of contexts and for a variety of purposes
- Encourage, through the study of texts and through social interaction, an awareness and appreciation of the different perspectives of people from other countries
- Develop students; awareness of the role of language in relation to other areas of knowledge
- Provide students with a basis for further study, work and leisure through the language

Language B and the international dimension

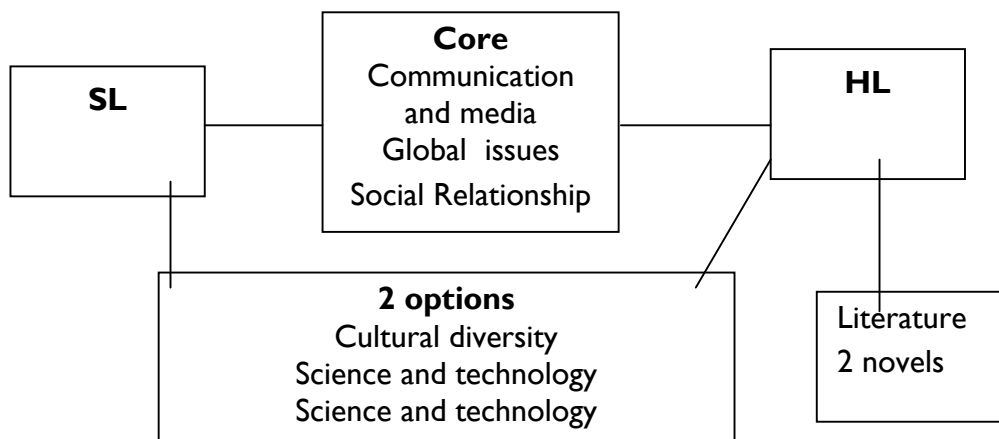
Within the course framework, through the study of authentic texts, students investigate and reflect on cultural values and behaviours in different ways:

- through a core and options suited to fostering an international perspective
- to develop international understanding and foster a concern for global issues
- raises awareness of their own responsibility at a local level
- to develop students' intercultural awareness, which contributes to the relationship between language b and the international dimension.

Syllabus outline

The difference between the standard and high level are determined by the assessment objectives, the depth and breadth of syllabus coverage, the assessment details, the assessment criteria, literature coverage and suggested teaching hours standard level 150 hours, high level 240 hours.

What is this?



Group 3 Individuals and Societies

DP Assessment weighting for final end of semester and end of year High School grades

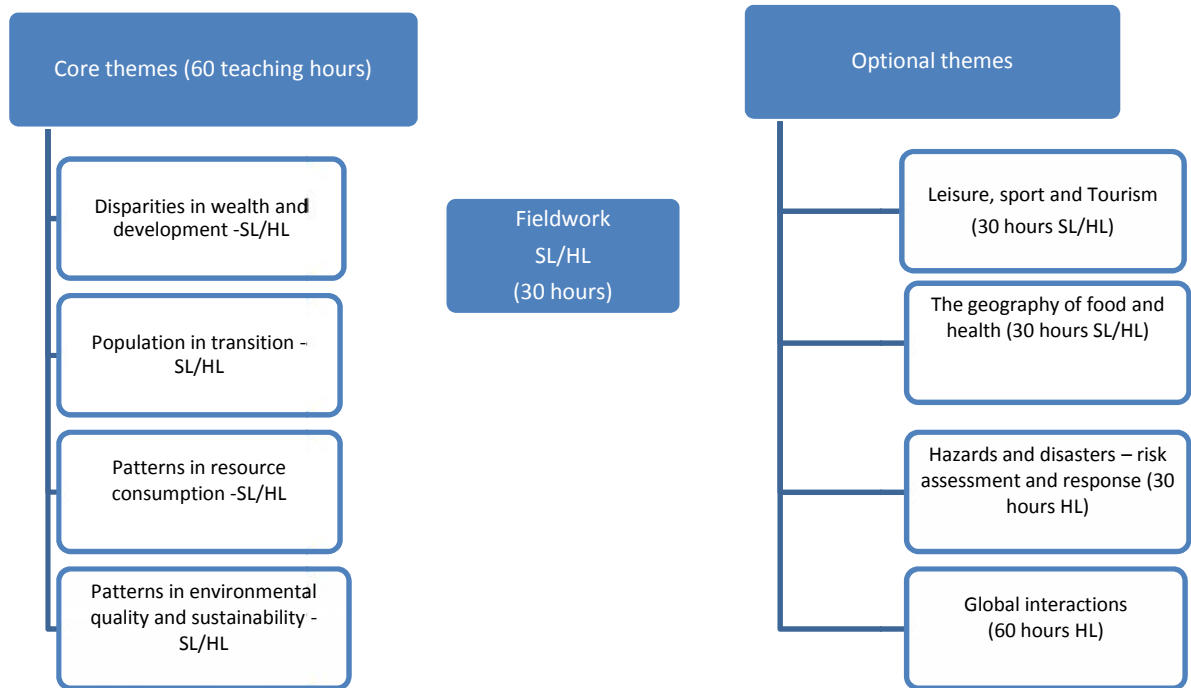
Assessment	Weighting
Writing task	10%
Oral activities	10%
Paper	20%
Exam	60%

Geography course description (SL and HL)

Geography is a dynamic subject that is firmly grounded in the real world and focuses on the interactions between individuals, societies and the physical environment in both time and space. Geography describes and helps to explain the similarities and differences between spaces and places. These may be defined on a variety of scales and from a range of perspectives. It examines key global issues, such as poverty, sustainability and climate change. It considers examples and detailed case studies at a variety of scales, from local to regional, national and international. Geography seeks to develop international understanding and foster a concern for global issues as well as to raise students' awareness of their own responsibility at a local level. Geography also aims to develop values and attitudes that will help students reach a degree of personal commitment in trying to resolve these issues, appreciating our shared responsibility as citizens of an increasingly interconnected world.

Geography aims:

1. Encourage the systematic and critical study of: physical, economic and social environments
2. Develop in the student the capacity to identify, to analyze critically and to evaluate concepts and arguments about the nature, individuals and society
3. Enable the student to collect, describe and analyze data used in studies of society, to test hypotheses, and to interpret complex data and source material
4. Develop an understanding of landscape, natural, ethnical, religious, cultural and economic diversity
5. Develop an understanding of the interrelationships between people, places, spaces and the environment
6. Develop a concern for human welfare and the quality of the environment, and an understanding of the need for planning and sustainable management
7. Appreciate the relevance of geography in analyzing contemporary issues and challenges, and develop a global perspective of diversity and change.



Distinction between SL and HL

Students at standard level (SL) and higher level (HL) in geography are presented with a syllabus that has a common core and optional themes (see the graph above). HL students also study the higher level extension. The syllabus requires the development of certain skills, attributes and knowledge as described in the assessment objectives of the course.

Although the skills and activity of studying geography are common to both SL and HL students, the HL student is required to acquire a further body of knowledge, to demonstrate critical evaluation, and to synthesize the concepts in the higher level extension.

SL students study two optional themes; HL students study three optional themes, providing further breadth

- HL students study the HL extension—global interactions, and examine, evaluate and synthesize the prescribed concepts, which by their nature are complex, contestable, interlinked and require holistic treatment. This provides further depth at HL.

Both courses require fieldwork as an internal assessment. In final grade the weight of fieldwork for SL is 25% and for HL 20%.

The geography course requires no specific prior learning. No particular background in terms of specific subjects studied for national or international qualifications is expected or required. The skills needed for the geography course are developed within the context of the course itself.

DP History HL/SL

At ES-IS we follow what is called 'Route 2': 20th Century World History

Paper 1

Prescribed subject 1: Peacemaking, peacekeeping—international relations 1918-36

This prescribed subject addresses international relations from 1918 to 1936 with emphasis on the Paris Peace Settlement—its making, impact and problems of enforcement—and attempts during the period to promote collective security and international cooperation through the League of Nations and multilateral agreements (outside the League mechanism), arms reduction and the pursuit of foreign policy goals without resort to violence. The prescribed subject also requires consideration of the extent to which the aims of peacemakers and peacekeepers were realized and the obstacles to success.

Paper 2

Introduction to route 2 topics

Students are required to study **two** topics from the following list.

- **Topic 1: Causes, practices and effects of wars**
- **Topic 5: The Cold War**

The topics should be studied through a selection of case studies drawn from different regions. Knowledge of topics beyond 2000 is not required.

The syllabus specifications for every topic include major themes and material for detailed study. Students should study a selection from the material for detailed study using the themes to guide them. It is important to ensure that examples selected for detailed study cover **two** regions as outlined by the map provided. In the examination that tests this component (SL/HL paper 2) questions will be set on major themes. Named questions will be confined to the material in major themes and detailed study. When answering open-ended questions students can use examples from the list and/or alternative examples.

Topic 1: Causes, practices and effects of wars

War was a major feature of the 20th century. In this topic the different types of war should be identified, and the causes, practices and effects of these conflicts should be studied.

Major themes

Different types and nature of 20th century warfare	Civil, Guerrilla, Limited war, total war
Origins and causes of wars	Long-term, short-term and immediate causes Economic, ideological, political, religious causes
Nature of 20th century wars	Technological developments, tactics and strategies, air, land and sea Home front: economic and social impact (including changes in the role and status of women) Resistance and revolutionary movements
Effects and results of wars	Peace settlements and wars ending without treaties Attempts at collective security pre- and post-Second World War Political repercussions and territorial changes Post-war economic problems

Material for detailed study

- **First World War (1914-8)**
- **Second World War (1939-45)**
- Europe and Middle East: **Spanish Civil War (1936-9)**

Topic 5: The Cold War

This topic addresses East–West relations from 1945. It aims to promote an international perspective and understanding of the origins, course and effects of the Cold War—a conflict that dominated global affairs from the end of the Second World War to the early 1990s. It includes superpower rivalry and events in all areas affected by Cold War politics such as spheres of interest, wars (proxy), alliances and interference in developing countries.

Major themes

Origins of the Cold War	Ideological differences Mutual suspicion and fear From wartime allies to post-war enemies
Nature of the Cold War	Ideological opposition Superpowers and spheres of influence Alliances and diplomacy in the Cold War
Development and impact of the Cold War	Global spread of the Cold War from its European origins Cold War policies of containment, brinkmanship, peaceful coexistence, détente Role of the United Nations and the Non-Aligned Movement Role and significance of leaders Arms race, proliferation and limitation Social, cultural and economic impact
End of the Cold War	Break-up of Soviet Union: internal problems and external pressures Breakdown of Soviet control over Central and Eastern Europe

Material for detailed study

- Wartime conferences: Yalta and Potsdam
- US policies and developments in Europe: Truman Doctrine, Marshall Plan, NATO
- Soviet policies, Sovietization of Eastern and Central Europe, COMECON, Warsaw Pact
- Sino–Soviet relations
- Germany (especially Berlin (1945-61)), Afghanistan (1979-88), Korea, Cuba, Vietnam, Castro, Gorbachev, Kennedy, Mao, Reagan, Stalin, Truman

Higher Level

You will complete Paper 1 and 2, but also a third paper based on knowledge gained in the following syllabus content.

Paper 3

HL option 5: Aspects of the history of Europe and the Middle East

This option covers major trends in Europe and the Middle East in the period from the mid 18th century to the end of the 20th century. Europe and the Middle East are geographically close, and their similarities and differences have resulted in periods of cooperation and enmity. Major developments included revolutions; the decline of empires and the establishment of nation states; political, social and economic reforms; and the emergence of dictatorships and the re-emergence of democracy. Although the focus is on major countries, developments in other states can be studied through case studies.

Within the sections there will be, where appropriate, a case study approach in which students will have the opportunity to study their own or another national history of the region.

Only people and events named in the guide will be named in the examination questions.

In some bullets, suitable examples are shown in brackets. These examples will **not** be named in the examination questions as any appropriate examples could be used.

Three sections must be selected for in-depth study.

8. Interwar years: conflict and cooperation 1919 - 39

This section deals with the period between the two World Wars and the attempts to promote international cooperation and collective security. Obstacles to cooperation, such as post-war revisionism, economic crises and challenges to democracy and political legitimacy in Italy, Germany and Spain respectively, all require examination and consideration. The policies of the right-wing regimes and the responses of democratic states are also the focus of this section.

9. The Soviet Union and Eastern Europe 1924 - 2000

This section deals with the consolidation of the Soviet state from 1924 and the methods applied to ensure its survival, growth and expansion inside and outside the borders of the Soviet Union. The rise and nature of the rule of Stalin, Khrushchev, Brezhnev and the policies and practice of Sovietization (post-1945) in Central and Eastern Europe are areas for examination. East–West relations post-1945 in relation to Soviet aims and leadership should also be considered.

10. The Second World War and post-war Western Europe 1939-2000

1. Second World War in Europe; Cold War: impact on Germany, NATO and military cooperation
2. Post-war problems and political and economic recovery in Western Europe: devastation; Debt 1945-9
3. Establishment and consolidation of the Federal Republic of Germany to German reunification
4. Moves towards political and economic integration, cooperation and enlargement post-1945: EEC, EC, EU
5. Spain: Franco's regime and the transition to, and establishment of, democracy under Juan Carlos
6. Case study of one Western European state between 1945 and 2000 (excluding Germany and Spain): the nature of the government; domestic policies; opposition and dissent

Group 4 Experimental Sciences.

DP Assessment weighting for final end of semester and end of year High School grades

Assessment	Weighting
Paper	10%
Test	30%
Exam	60%

The group consists of four subjects offered at ES-IS:

- Biology
- Chemistry
- Computer Science
- Physics

Subjects in this group all have a major practical component. This means that, for a standard level course you will complete 40 hours of practical investigation spread through the two year and submit written reports/ as appropriate.

Every student takes an active part in the interdisciplinary 'Group 4 Project'. This contributes 10 of the 40 hours of practical investigation.

Courses are built up of core topics (80 hours (SL) + 55 hours (HL)) and Options (Total: 30 hours (SL) and 45 hours (HL)). You will take two 'options'.

Assessment for end of semester/year grades are broken down as shown in **table 1** below. Assessment for the award of the Diploma is shown in **table 2**.

Minimum teaching hours	SL	HL
Theory	110	180
Core	80	80
Additional higher level AHL	---	55
Options	30	45
Practical work	40	60
Investigations	30	50
Group 4 project	10	10
Total	150	240

Assessment in Group 4 (for Computer Science assessment – see the CS Section below)

Component	Overall weighting (%)	Approximate weighting of objectives (%)		Duration (hours)	Format and syllabus coverage
		1+2	3		
Paper 1	20	20		$\frac{3}{4}$	30 multiple-choice questions on the core
Paper 2	32	16	16	$1\frac{3}{4}$	Section A: one data-based question and several short-answer questions on the core (all compulsory) Section B: one extended-response question on the core (from a choice of three)
Paper 3	24	12	12	1	Several short-answer questions in each of the two options studied (all compulsory)

Group 4 Subject Aims

Through studying any of the group 4 subjects, students should become aware of how scientists work and communicate with each other. While the “scientific method” may take on a wide variety of forms, it is the emphasis on a practical approach through experimental work that distinguishes the group 4 subjects from other disciplines and characterizes each of the subjects within group 4. It is in this context that all the Diploma Programme experimental science courses should aim to:

1. provide opportunities for scientific study and creativity within a global context that will stimulate and challenge students
2. provide a body of knowledge, methods and techniques that characterize science and technology
3. enable students to apply and use a body of knowledge, methods and techniques that characterize science and technology
4. develop an ability to analyse, evaluate and synthesize scientific information
5. engender an awareness of the need for, and the value of, effective collaboration and communication during scientific activities
6. develop experimental and investigative scientific skills
7. develop and apply the students’ information and communication technology skills in the study of science
8. raise awareness of the moral, ethical, social, economic and environmental implications of using science and technology
9. develop an appreciation of the possibilities and limitations associated with science and scientists
10. encourage an understanding of the relationships between scientific disciplines and the overarching nature of the scientific method.

Group 4 Subject Objectives

The objectives for all group 4 subjects reflect those parts of the aims that will be assessed. Wherever appropriate, the assessment will draw upon environmental and technological contexts and identify the social, moral and economic effects of science.

It is the intention of all the Diploma Programme experimental science courses that students achieve the following objectives.

1. Demonstrate an understanding of:
 - a. scientific facts and concepts
 - b. scientific methods and techniques
 - c. scientific terminology
 - d. methods of presenting scientific information.
2. Apply and use:
 - a. scientific facts and concepts
 - b. scientific methods and techniques
 - c. scientific terminology to communicate effectively
 - d. appropriate methods to present scientific information.
3. Construct, analyse and evaluate:
 - a. hypotheses, research questions and predictions
 - b. scientific methods and techniques
 - c. scientific explanations.
4. Demonstrate the personal skills of cooperation, perseverance and responsibility appropriate for effective scientific investigation and problem solving.
5. Demonstrate the manipulative skills necessary to carry out scientific investigations with precision and safety.

Biology

Biologists have discovered, documented a huge amount of knowledge about life and living things. This DP course sets out to teach you only a limited amount of that knowledge, however it also sets out to, more usefully, help you understand the main principles, concepts and ideas which link the knowledge discovered. Across the units studied there are four main basic biological concepts that you need to keep in mind:

Structure and function

Perhaps one of the most important relationships in biology that helps us to discover through inquire, how the structure of things is linked to their function and vice-versa and the limitations each creates.

Universality *versus* diversity

At the factual level, it soon becomes obvious to students that some molecules (for example, enzymes, amino acids, nucleic acids and ATP) are ubiquitous, and so are processes and structures. However, these universal features exist in a biological world of enormous diversity. Species exist in a range of habitats and show adaptations that relate structure to function. At another level, students can grasp the idea of a living world in which universality means that a diverse range of organisms (including ourselves) are connected and interdependent.

Equilibrium within systems

Checks and balances exist both within living organisms and within ecosystems. The state of dynamic equilibrium is essential for the continuity of life.

Evolution

The concept of evolution draws together the other themes. It can be regarded as change leading to diversity within constraints, and this leads to adaptations of structure and function.

Why study Biology?

Apart from the fascination of how living organisms function in all their forms, the opportunities the study of biology presents for further study and careers, biology offers an interesting and relevant body of knowledge and understanding for us in our daily lives. Much science news tends to be about biological issues. The practical skills developed are useful in everyday life and there are ample opportunities to develop your attributes as a learner.

DP Biology Course Outline – This is not necessarily the teaching sequence

Topic	Syllabus Content	Min. Hours
Topic 1	Statistical analysis	2
Topic 2	Cells	12
Topic 3	The chemistry of life	15
Topic 4	Genetics	15
Topic 5	Ecology and evolution	16
Topic 6	Human health and physiology	20
Topic 7	Nucleic acids and proteins	11
Topic 8	Cell respiration and photosynthesis	10
Topic 9	Plant science	11
Topic 10	Genetics	6
Topic 11	Human health and physiology	17
Options SL		
Option A	Human nutrition and health	15
Option B	Physiology of exercise	15
Option C	Cells and energy	15
Option D	Evolution	15/22
Option E	Neurobiology and behaviour	15/22
Option F	Microbes and biotechnology	15/22
Options HL		
Option H	Further human physiology	22

Chemistry

Chemistry is sometimes called the 'central science' as it looks into the physical world of materials and molecules touching on physics, technology and materials science and it looks into the science of organic materials and biological systems. It is an analytical science which demands a lot of practical investigation and conceptual understanding.

Why study Chemistry?

Chemistry is a complex but fairly straightforward science that helps us understand how materials and processes work. It is interesting to both the scientist and non-scientist alike and through the course your knowledge, skills and attributes as a learner will all develop. Career-wise, chemistry students are much sought after in many fields such as pharmacy, chemical engineering, environmental research, materials science and much more and students wishing to enter the medical world would not be accepted with a good knowledge of chemistry.

DP Chemistry Course Outline

Topic	Syllabus Content	Min. Hours
Topic 1	Quantitative chemistry	12.5
Topic 2	Atomic structure	4
Topic 3	Periodicity	6
Topic 4	Bonding	12.5
Topic 5	Energetics	8
Topic 6	Kinetics	5
Topic 7	Equilibrium	5
Topic 8	Acids and bases	6
Topic 9	Oxidation and reduction	7
Topic 10	Organic chemistry	12
Topic 11	Measurement and data processing	2
HL		
Topic 12	Atomic structure	3
Topic 13	Periodicity	4
Topic 14	Bonding	5
Topic 15	Energetics	8
Topic 16	Kinetics	6
Topic 17	Equilibrium	4
Topic 18	Acids and bases	10
Topic 19	Oxidation and reduction	5
Topic 20	Organic chemistry	10
Options SL and HL		
Option A	Modern analytical chemistry	15/22
Option B	Human biochemistry	15/22
Option C	Chemistry in industry and technology	15/22
Option D	Medicines and drugs	15/22
Option E	Environmental chemistry	15/22
Option F	Food chemistry	15/22
Option G	Further organic chemistry	15/22

Computer Science

Computer Science requires an understanding of the fundamental concepts of computational thinking as well as knowledge of how computers and other digital devices operate. The Diploma Programme Computer Science course is engaging, accessible, inspiring and rigorous.

The Computer Science course emphasizes the need for both a theoretical and practical approach.

Why Study Computer Science?

Computers are all around us and are currently used for almost every part of life in the modern world. However, how many people truly understand the technology they use? Computers are just tools but by using them we can extend our investigation of our universe and cope with the enormous amounts of data we collect, send and use. Computers have changed society also and this course may help you to develop an interest or a career that does just that.

Syllabus component		Min. Hours	
		SL	HL
	Core syllabus content		
SL/HL core	The topics that must be studied, including some practical work, are:	80	80
Topic 1	System fundamentals	20	20
Topic 2	Computer organization	6	6
Topic 3	Networks	9	9
Topic 4	Computational thinking, problem-solving and programming	45	45
HL extension	The topics that must be studied, including some practical work, are:	--	45
Topic 5	Abstract data structures		23
Topic 6	Resource management		8
Topic 7	Control		14
Case study	Additional subject content introduced by the annually issued case study		30
Option	Students study one of the following options:		
		SL/HL core	30
		HL extension	---
Option A	Databases		
Option B	Modelling and simulation		
Option C	Web science		
Option D	Object-oriented programming (OOP)		
Internal assessment			
Solution	Practical application of skills through the development of a product and associated documentation	30	30
Group 4 project		10	10
	Total teaching hours	150	240

Internal assessment

- one piece of internally assessed work, which includes a computational solution - Practical application of skills through the development of a product and associated documentation
- Group 4 project – an inter-disciplinary project involving collaboration between the sciences on a practical project.

Physics

Physics is the most fundamental of the experimental sciences, as it seeks to explain the universe itself, from the very smallest particles—quarks (perhaps 10^{-17} m in size), which may be truly fundamental—to the vast distances between galaxies (10^{24} m).

From Newtonian physics to Einstein, physics has influenced the way we see the world and the way we interact with it. With an understanding of physics, the concept of being able to predict and know our universe was developed and, of course, changed history, spawned the enlightenment, the industrial revolution and the electronic revolution and of course changed the way we view ourselves.

Physics always has the ability to surprise us – taking us from a world where we didn't know, to a world where we thought we could know everything, back, via Einstein and others to a universe where we can only rely on uncertainty. There is still a lot to discover in terms of physics and it is possible that one day your discoveries in the subject will surprise us all too!

In the course, we'll use models, simulations,, electronic data-collection techniques and spread sheets. We'll experiment and investigate and put your imagination to the test. Although mathematics is the 'language of physics' for standard level physics, you don't have to be a mathematical genius and students studying any of the DP maths courses will have sufficient maths to cope.

Why study Physics?

Apart from the interesting career choices, lines of investigation and understanding it allows you to develop, studying physics can show that you are a keen observer, good at thinking things through and able to apply your maths. The fact that, traditionally, students who see themselves as non-scientists tend to take Biology or Chemistry is a false step as these subjects have become more technical and physics somewhat less so and all three subjects are of equal difficulty these days. Those who did shy away from physics at school tend to treat you differently when they understand that you did not!

DP Physics Course Outline

Topic	Syllabus Content	Min. Hours
Topic 1	Physics and physical measurement	5
Topic 2	Mechanics	17
Topic 3	Thermal physics	7
Topic 4	Oscillations and waves	10
Topic 5	Electric currents	7
Topic 6	Fields and forces	7
Topic 7	Atomic and nuclear physics	9
Topic 8	Energy, power and climate change	18
Higher Level Topics		55
Topic 9	Motion in fields	8
Topic 10	Thermal physics	6
Topic 11	Wave phenomena	12
Topic 12	Electromagnetic induction	6
Topic 13	Quantum physics and nuclear physics	15
Topic 14	Digital technology	8
Options SL	These options are available at SL only.	15
Option A	Sight and wave phenomena	15
Option B	Quantum physics and nuclear physics	15
Option C	Digital technology	15
Option D	Relativity and particle physics	15
Options SL and HL		15/22
Option E	Astrophysics	15/22
Core (SL and HL)		15
Option F	Communications	15/22
Option G	Electromagnetic waves	15/22
Options HL	These options are available at HL only.	22
Option H	Relativity	22
Option I	Medical physics	22
Option J	Particle physics	22

Group 5

Mathematical Studies (SL)

Minimum teaching time: 150 hours

DP Assessment weighting for final end of semester and end of year High School grades

Assessment	Weighting
End of unit tests	40%
End of Semester/mock exams	30%
Home assignment	12%
Presentation	10%
Meeting deadlines	8%
Total	100%

This course is catered **for students** with varied backgrounds and abilities. More specifically, it is designed to build your confidence and encourage an appreciation of mathematics in especially if do not anticipate a need for mathematics in your future studies. When taking this course you need to be already equipped with fundamental skills and a rudimentary knowledge of basic processes but it is the least demanding of the three maths courses in group 5.

The aims of this course are to enable you to:

- a. appreciate the multicultural and historical perspectives of mathematics;
- b. develop your logical, critical and creative thinking;
- c. develop an understanding of the principles and nature of mathematics;
- d. employ and refine your powers of abstraction and generalization;
- e. develop patience and persistence in problem solving;
- f. appreciate the consequences arising from technological developments;
- g. transfer skills to alternative situations and to future developments;
- h. communicate clearly and confidently in a variety of contexts.

One of the aims of this course is to enable you to appreciate the multiplicity of cultural and historical perspectives of mathematics. This includes the international dimension of mathematics. You will experience opportunities to achieve this aim by discussing relevant issues as they arise and making reference to appropriate background information. You will be expected to know and use mathematical concepts and principles. In particular, you must be able to:

- Ñ read, interpret and solve a given problem using appropriate mathematical terms;
- Ñ organize and present information and data in tabular, graphical and/or diagrammatic Forms;
- Ñ know and use appropriate notation and terminology;
- Ñ formulate a mathematical argument and communicate it clearly;
- Ñ select and use appropriate mathematical strategies and techniques;
- Ñ demonstrate an understanding of both the significance and the reasonableness of results;
- Ñ recognize patterns and structures in a variety of situations, and make generalizations;
- Ñ recognize and demonstrate an understanding of the practical applications of mathematics;
- Ñ use appropriate technological devices as mathematical tools;
- Ñ demonstrate an understanding of and the appropriate use of mathematical modelling.

Syllabus Outline

Topic N ^o	Topic Area	Min. Hours
Topic 1	Introduction to the Graphic Display Calculator (GDC)	3
Topic 2	Number and Algebra	14
Topic 3	Sets, Logic and Probability	20

Topic 4	Functions	24
Topic 5	Geometry and Trigonometry	20
Topic 6	Statistics	24
Topic 7	Introduction to Differential Calculus	15
Topic 8	Financial Mathematics	10
Project	An individual assignment resulting in the analysis and evaluation of data/information generated, measured or collected by the student.	20

Assessment Outline

External Assessment	3 hours	80%
Paper 1	1½ h: 15 short response questions covering the syllabus	40%
Paper 2	1½ h: 5 Extended response questions covering the syllabus	40%
Internal Assessment		20%
Project	An individual assignment resulting in the analysis and evaluation of data/information generated, measured or collected by the student.	

Mathematics Standard Level (SL)

Minimum teaching time: 150 hours

This course is good for you if you already possess a knowledge of basic mathematical concepts, and who are equipped with the skills needed to apply simple mathematical techniques correctly. The majority of these students will expect to need a sound mathematical background as they prepare for future studies in subjects such as chemistry, economics, psychology and business administration. The course focuses on introducing important mathematical concepts through the development of mathematical techniques. The intention is to introduce students to these concepts in a comprehensible and coherent way, rather than insisting on mathematical rigour. Students should wherever possible apply the mathematical knowledge they have acquired to solve realistic problems set in an appropriate context.

The internally assessed component, the portfolio, offers students a framework for developing independence in their mathematical learning by engaging in mathematical investigation and mathematical modelling. Students are provided with opportunities to take a considered approach to these activities and to explore different ways of approaching a problem. The portfolio also allows students to work without the time constraints of a written examination and to develop the skills they need for communicating mathematical ideas.

The aims of this course are to enable you to:

- appreciate the multicultural and historical perspectives of all group 5 courses
- enjoy the course and develop an appreciation of the elegance, power and usefulness of the subjects
- develop logical, critical and creative thinking
- develop an understanding of the principles and nature of the subject
- employ and refine your powers of abstraction and generalization
- develop patience and persistence in problem solving
- appreciate the consequences arising from technological developments
- transfer skills to alternative situations and to future developments
- communicate clearly and confidently in a variety of contexts.

This course is good for you if you already possess a knowledge of basic mathematical concepts, and you are equipped with the skills needed to apply simple mathematical techniques correctly. Success in this course shows that you have a sound mathematical background as you prepare for future studies in subjects such as chemistry, economics, psychology and business administration.

Syllabus Outline

Topic N ^o	Topic Area	Min. Hours
Topic 1	Algebra	8
Topic 2	Functions and Equations	24
Topic 3	Circular Functions and Trigonometry	16
Topic 4	Matrices	10
Topic 5	Vectors	16
Topic 6	Statistics and Probability	30
Topic 7	Calculus	36
Portfolio	Two assignments provided by the teacher from different areas of the syllabus representing: <ul style="list-style-type: none">• mathematical investigation• mathematical modelling	10

Assessment Outline

External Assessment	3 hours	80%
Paper 1	1½ h: In two sections: A short answers; B Extended response. Questions based on whole syllabus. No calculators used.	40%
Paper 2	1½ h: In two sections: A short answers; B Extended response. Questions based on whole syllabus. Calculators needed.	40%
Internal Assessment		20%
Portfolio	Two assignments provided by the teacher from different areas of the syllabus representing: <ul style="list-style-type: none">• mathematical investigation• mathematical modelling	

Mathematics Higher Level

Syllabus Outline

Topic N ^o	Topic Area	Min. Hours
Topic 1	Algebra	20
Topic 2	Functions and Equations	26
Topic 3	Circular Functions and Trigonometry	22
Topic 4	Matrices	12
Topic 5	Vectors	22
Topic 6	Statistics and Probability	40
Topic 7	Calculus	48
Option	One of the following options must be studied: <ul style="list-style-type: none">• 8 Statistics and Probability• 9 Sets, Relationships and Groups• 10 Series and Differential Equations• 11 Discrete Mathematics	40
Portfolio	Two assignments provided by the teacher from different areas of the syllabus representing: <ul style="list-style-type: none">• mathematical investigation• mathematical modelling	10

Assessment Outline

External Assessment	5 hours	80%
Paper 1	2h: In two sections: A short answers; B Extended response. Questions based on whole syllabus. No calculators used.	30%
Paper 2	2 h: In two sections: A short answers; B Extended response. Questions based on whole syllabus. Calculators needed.	30%
Paper 3	1h: Extended response questions based mainly on the option studied. Calculators needed.	
Internal Assessment		20%
Portfolio	Two assignments provided by the teacher from different areas of the syllabus representing: <ul style="list-style-type: none"> • mathematical investigation • mathematical modelling 	

Group 6 – Options

Having selected one course from each of the groups 1 – 5, in group 6 you need to choose one more subject from groups 1 – 4.

Higher Level and Standard Level courses. Having selected your six courses, you will also need to decide which 3 courses you will take at Higher Level and which three at Standard Level. You need to think carefully as some subjects may not be able to offer HL options for example in previous years Business and Management and Computer Science were only offered at standard level. If you did Maths Studies or Maths SL along with Business and Management and Computer Science, it would mean your other three subjects would have to be at Higher Level.

What courses will you take?

Group	Subject	SL	HL	Group	Subject	SL	HL
Group 1	Georgian A			Group 4	Biology Chemistry Physics Computer Science		
Group 2	English A English B Other B			Group 5	Maths Studies Maths SL Maths HL		
Group 3	History Geography Business and Management Economics			Group 6	One from the other groups		