



INTERNATIONAL
BACCALAUREATE
ORGANIZATION

A Guide to the IB Diploma Programme for Universities & Colleges

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A Guide to the IB Diploma Programme for Universities & Colleges

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A Guide to the IB Diploma Programme for Universities & Colleges

Introduction

This PDF version to the online guide is an introduction to the Diploma Programme for lead administrators, deans and faculty members. It will assist them in developing and/or revising Diploma Programme recognition policies. The guide contains information about course content, student assessment, requirements for the IB diploma, and interpreting the IB transcript. In addition, there is information on how to become an IB World School and on curriculum review.

The IBO has seen tremendous growth in recent years. The Diploma Programme is currently offered by 1,456 member schools worldwide. Increasing numbers of Diploma Programme students are continuing their studies at colleges and universities that recognize their achievements in the Diploma Programme. This guide will help universities and colleges respond to the needs of these students.

The IBO encourages colleges and universities to develop their own recognition policies that are specific to their individual institutions. The IBO regional offices will provide additional information to help determine the best approach for each college or university when considering a recognition policy.

Thank you for your interest in the Diploma Programme.

The aim of this section of the IBO web site is to increase knowledge and understanding of the International Baccalaureate (IB) Diploma Programme for universities and colleges.



A Guide to the IB Diploma Programme for Universities & Colleges

What is the Diploma Programme?

The Diploma Programme is a comprehensive and challenging pre-university course of study, leading to examinations, that demands the best from motivated students and teachers. It is widely recognized for its high academic standards.

- The two-year curriculum is rigorous and intellectually coherent, encouraging critical thinking through the study of a wide range of subjects in the traditional academic disciplines while encouraging an international perspective.
- Beyond completing college-level courses and examinations, Diploma Programme students are also required to engage in community service, individual research, and an inquiry into the nature of knowledge.
- The two-year course of study leads to final examinations in six subject areas and a qualification widely recognized by the world's leading colleges and universities.

Since 1968, more than half a million students in 125 countries have participated in the Diploma Programme.

The Diploma Programme is a challenging two-year programme of international education.



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How the IB diploma is recognized

As the vast majority of students who complete the Diploma Programme move on to further and higher education, university recognition has always been a primary concern for Diploma Programme students, parents and school counsellors.

The discipline and work ethic necessary to complete the Diploma Programme require considerable commitment from students. Diploma Programme students who have performed well in examinations and have earned the IB diploma expect colleges and universities to properly recognize this achievement.

Many colleges and universities have developed their own recognition policies. The individual policies vary greatly, but they all have one thing in common. Through their policies, these institutions make it apparent that they

understand and appreciate the Diploma Programme student and the rigour of the Diploma Programme itself. This recognition comes in many forms but the most common are:

- **Recruitment**—actively recruiting Diploma Programme students
- **Admission**—ensuring that the IB diploma is fully recognized in the admissions process; addressing Diploma Programme students specifically in documentation and publications
- **Placement**—acknowledging the rigour of IB courses and establishing prerequisites for IB courses that are fair and equitable in comparison with those for state, provincial and/or other examination courses; understanding and acknowledging the English language proficiency of international Diploma Programme students
- **Credit**—providing detailed information on the courses for which credit is possible based on Diploma Programme examination scores; specifically understanding and recognizing theory of knowledge (TOK), the extended essay and the content of standard level (SL) courses as well as the content of higher level (HL) courses
- **Scholarships**—providing scholarships or scholarship opportunities specifically for IB Diploma students

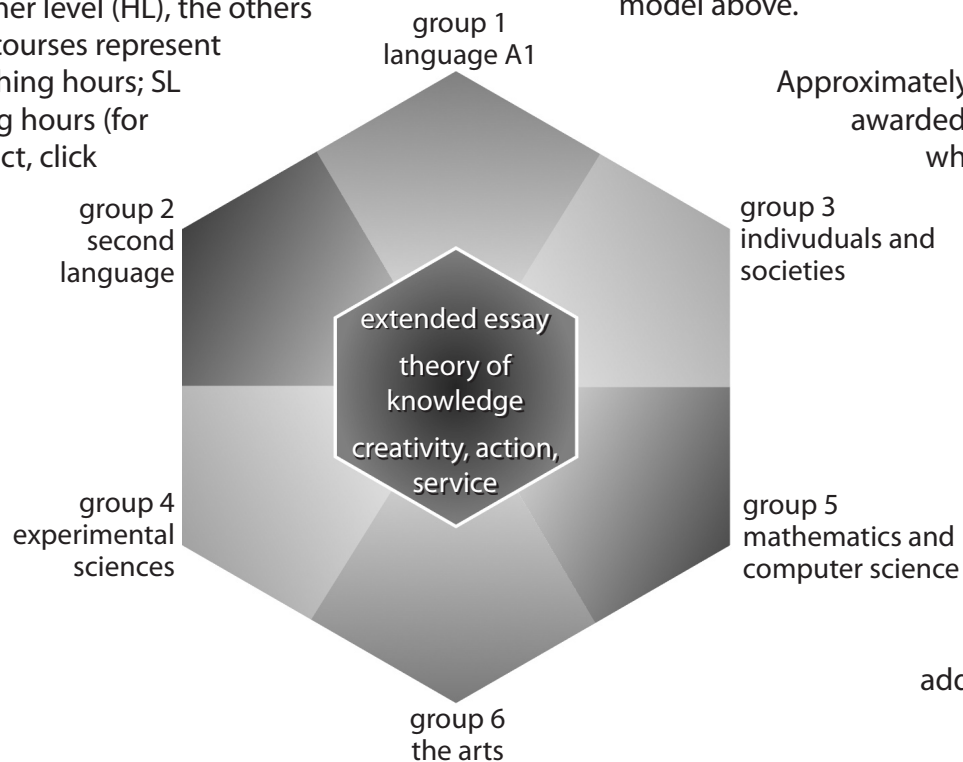
University recognition is a primary concern for Diploma Programme students.

Requirements for the IB Diploma & Certificate

The Diploma Programme is a two-year, full-time programme. Students must choose one subject from each of groups 1 to 5, thus ensuring breadth of experience in languages, social studies, the experimental sciences and mathematics. The sixth subject may be an arts subject chosen from group 6, or the student may choose another subject from groups 2 to 5. At least three and not more than four are taken at higher level (HL), the others at standard level (SL). HL courses represent a recommended 240 teaching hours; SL courses cover 150 teaching hours (for more detail on each subject, click on a group number in the hexagon above).

In each examination, the student is graded on a scale of 1 (minimum) to 7 (maximum). The award of the diploma requires students to

meet defined standards and conditions. These include a minimum total of 24 points and the satisfactory completion of three compulsory core components: 1) theory of knowledge (TOK); 2) extended essay; and 3) creativity, action, service (CAS). Thus, the programme has the strengths of a traditional and broad curriculum, augmented by the three requirements shown at the centre of the programme model above.



Approximately 80% of students are awarded the diploma. A student who does not satisfy the requirements of the full Diploma Programme, or who has elected to take fewer than six subjects, is awarded a certificate for the examinations completed. Students who complete more than six subjects receive an extra certificate for the additional subject(s).

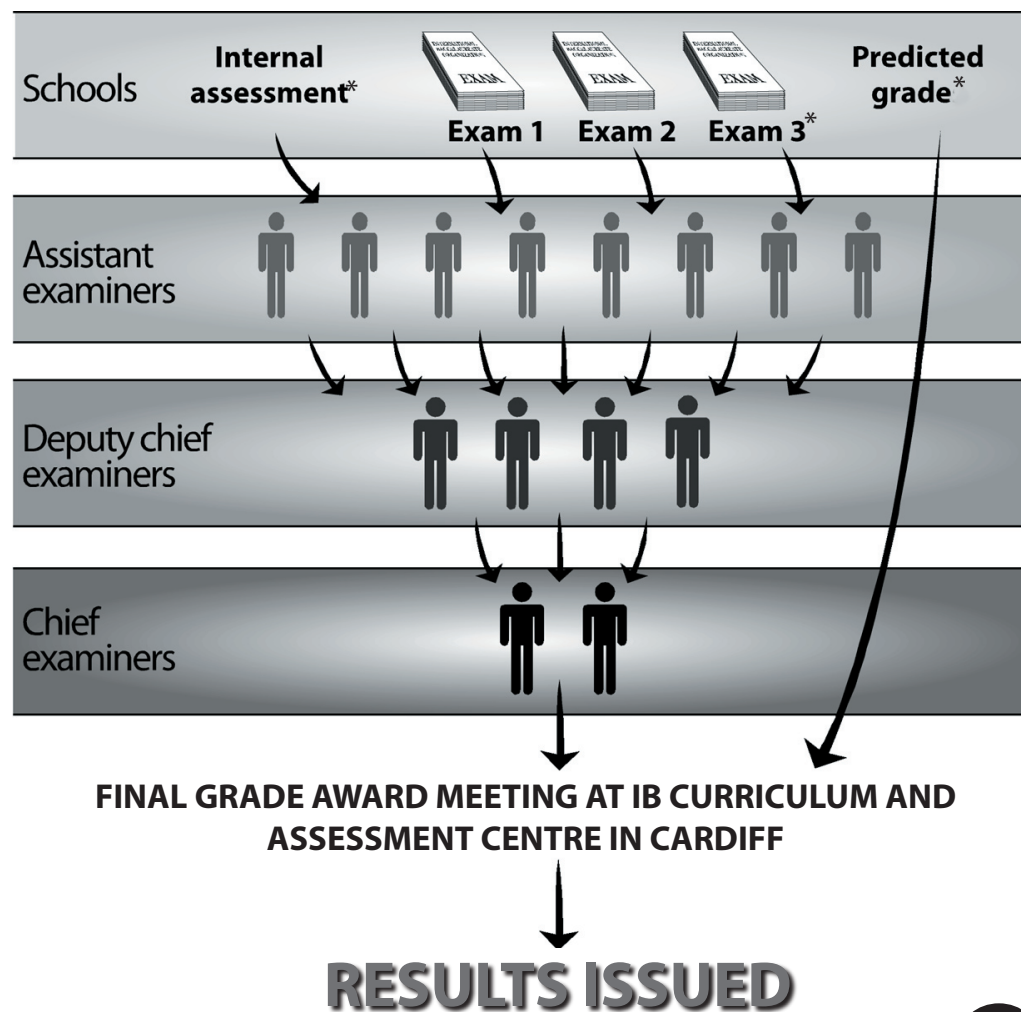
How students are assessed: principles and practice

IB World Schools are found across six continents and students represent many cultural and academic traditions. Despite this, the organization measures student performance according to established standards and criteria that are consistent from place to place and year to year.

The final examinations conclude a two-year teaching period, during which a variety of assessment methods have been used to acknowledge both the content and the process of academic achievement and to take into account different learning styles.

Students' work is assessed by an international board of examiners, who are themselves rigorously trained and monitored by the IBO.

Assessment from examinations to results



An essential principle of IB assessment is that standards are the same worldwide.



A Guide to the IB Diploma Programme for Universities & Colleges

How students are assessed: principles and practice (cont.)

Internal Assessment

An important aspect of the IB assessment process is the internal assessment component which recognizes the professional role of the teacher and gives students a chance to show what they can do over time, not just in the pressured context of a final examination.

- Usually counts for about 20% of the final grade in a subject.
- External moderation of internal assessment marks by IB examiners to ensure international parity.
- Typically includes teacher evaluation of work done in class, homework assignments, special projects, notebooks labs etc.

Written Examinations

Typically there is a series of written examinations at the end of the course, which may consist of two or three separately written examination “papers”. Conventional external examination techniques are chosen from a variety of options including: oral and written, long and short responses, data-based questions, essays, multiple choice questions.

Predicted Grades

The predicted grade is the teacher’s prediction of the grade the candidate is expected to achieve in the subject, based on all the evidence of a candidate’s work and the teacher’s knowledge of IB standards. Predicted grades are also required for Theory of Knowledge and the Extended Essay. Predicted grades are used by grade award meeting when considering grade distributions. They may also be used by the Final Award Committee as additional information about candidates who are subject to special consideration.



How to interpret IB grades and transcripts

A student's examination performance in individual subjects is scored on a scale of 1–7 points with a further 3 points available based on a matrix of performance in the theory of knowledge (TOK) and the extended essay components. Students who display satisfactory levels of performance across all subject areas and achieve a minimum of 24 points (out of a possible 45) are awarded the IB diploma. All others receive a certificate for each of the subjects examined. Subjects are marked according to the following scale:

7	Excellent
6	Very good
5	Good
4	Satisfactory
3	Mediocre
2	Poor
1	Very poor
N	No grade

The TOK course and the extended essay are graded according to the following scale.

A	Excellent
B	Good
C	Satisfactory
D	Mediocre
E	Elementary
N	No grade

Examination results are available in mid-July following the May examination session, and in mid-January following the November examination session. If requested by the student, an official transcript of results will be sent to universities. The transcript indicates subject and level, the grade awarded, total points scored and the completion of the additional diploma requirements. It is typically marked diploma awarded or certificate(s) awarded. Bilingual diploma awarded indicates that the student has:

- studied two languages A1, or
- studied a language A1 and a language A2, or
- taken an examination in at least one subject from group 3 or group 4 in a language other than his or her language A1.

How the IB curriculum is reviewed and maintained (cont.)

Review year 4 (R4)

Final editing of the subject guide and specimen examination papers. Teacher training organized by regional offices. Some teacher support material (TSM) may be produced.

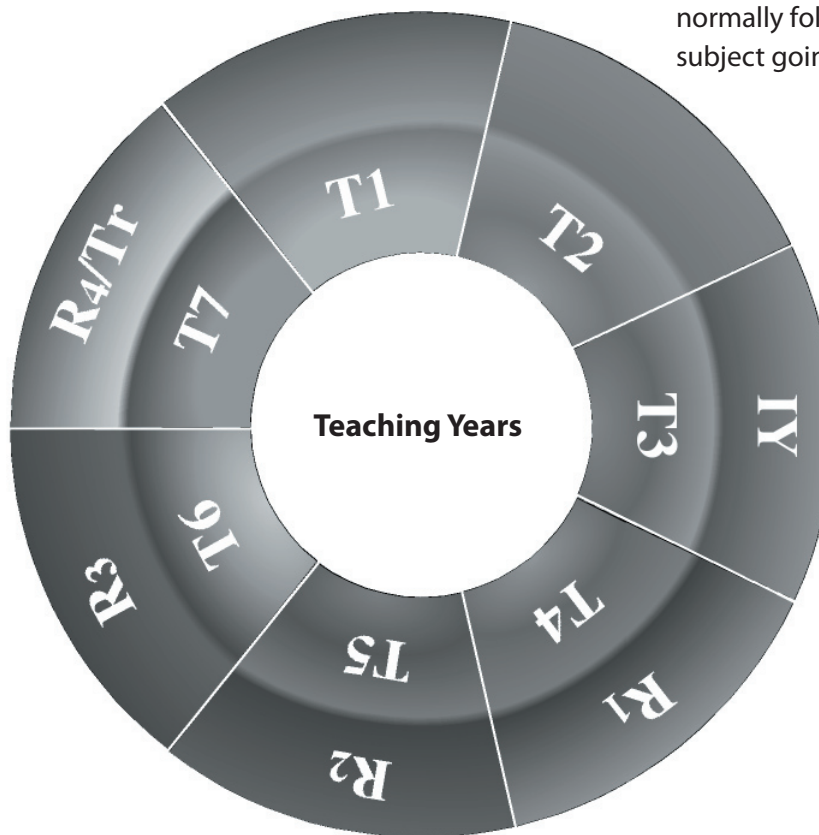
Subject guides are published in all relevant working languages in February of R4 for first teaching in September of the same year. Specimen examination papers or questions will normally be published at the same time and be available for teacher training workshops. It is possible to produce some TSM during R4 but often it will be necessary to wait for the new syllabus to be taught so that authentic student work is available to be used as exemplar material. Depending on how extensive the changes are, the review group may decide to give priority to either specimen examination questions or TSM. Most curriculum reviews will involve two meetings a year. The northern hemisphere autumn and spring are generally the best times to bring teachers from all the IBO regions together, but meetings may be held at any times that are convenient.

Teaching year 1 (T1)

A cycle of one May and one November examination is completed with the new curriculum in teaching year 1.

Teaching year 2 (T2)

One May examination is completed in teaching year 2 with the new curriculum, normally followed by the subject going into review.

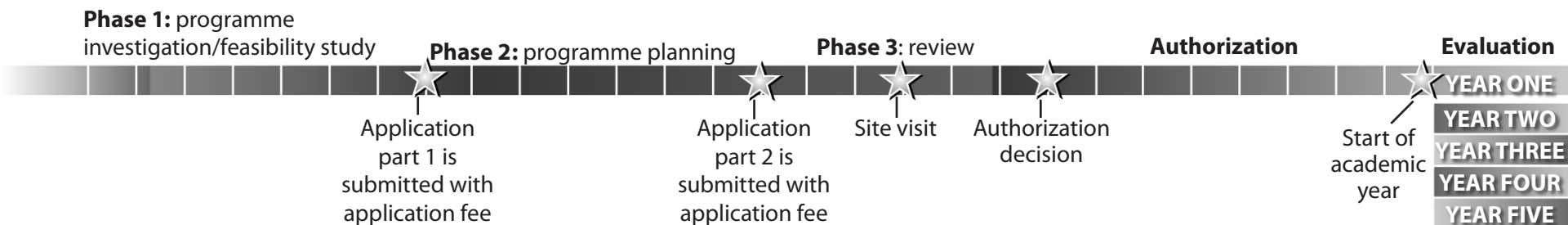




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How do schools become IB World Schools?

Authorization is granted to schools that successfully complete the application process, in which schools present detailed plans and evidence that they are prepared to offer a viable Diploma Programme. IBO offices are available to support schools through the authorization process, which takes place in phases as shown in the following synopsis. Move the blue arrow pointer along the time line to read about each phase. As the process varies from region to region, this graphic is intended as a guide only. Please refer to your IBO regional office for details of the process in your part of the world.



There is no set period of time for programme investigation but a minimum of six months is recommended.

This phase concludes when part 1 of the application is submitted.

Plans are made for the management of curriculum development, staff training, student recruitment, budget, scheduling, etc.

Planning assistance is provided through the online curriculum centre (OCC), advice from the IBO regional office and an optional consultant.

This phase concludes after about seven months when part 2 of the application is submitted.

A site authorization team will visit the school three to four months after part 2 of the application has been received.

A decision is given three to four months after the site visit takes place.

Year one of the Diploma Programme is offered at the start of the next school year.

Programme evaluation takes place every five years after authorization and can lead to loss of authorization.

Schools wishing to offer the Diploma Programme must be officially authorized by the IBO.



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APPENDIX A: Course Descriptions

Language A1

Group 1—best language

Offered at both higher (HL) and standard level (SL) in more than 60 languages.

A pre-university literature course in the student's native or best language.

- Promotes an appreciation of literature and a knowledge of the student's own culture along with that of other societies.
- Develops the student's powers of expression, both in oral and written communication.
- Emphasizes the skills involved in writing and speaking in a variety of styles and situations.
- Offers the student the opportunity to read 11-15 works grouped by genres. Works are chosen from a broad list of prescribed authors and works representing different literary periods, genres and regions in the target language, as well as literature in translation.

The course is assessed through both oral and written examinations that allow students to demonstrate:

- individual language skills
- the ability to analyse critically and to comment upon both familiar and unfamiliar texts
- the ability to express a personal and independent response to literature.

Assessment

Higher level (HL)

- Two written examination papers externally assessed
- World literature assignments: two written papers of 1,000-1,500 words each
- Two oral activities internally assessed by the teacher and externally moderated by the IBO

Standard level (SL)

- Assessment as HL, except only one world literature assignment



A Guide to the IB Diploma Programme for Universities & Colleges

APPENDIX A: Course Descriptions

Language A2

Group 2—second language

Offered at both higher level (HL) and standard level (SL) in 16 languages.

A language and literature course for bilingual speakers and for highly competent users of the target language.

Gives students the opportunity to develop and refine their language skills.

- Includes an exploration of the culture(s) related to the target language.
- Develops students' ability to communicate clearly, fluently and effectively.
- Enables students to engage in critical examination of a wide range of texts.

Assessment

Higher level (HL)

- Two externally assessed written examination papers
- Two externally assessed written tasks: one based on literature and the other on a topic of cultural interest (total of 1,500 words for both tasks)
- Two oral tasks assessed by the teacher and externally moderated by the IBO

Standard level (SL)

- Same assessment model as HL

Language B

Group 2—second language

Offered at both higher level (HL) and standard level (SL) in more than 30 languages.

A foreign language course for students with two to five years' previous experience in learning the target language.

- Promotes an awareness, and sensitivity to, the culture(s) related to the language studied.
- Prepares students to use the language appropriately in a range of situations and contexts and for a variety of purposes.
- Focuses on language acquisition and development in the four primary language skills: listening, speaking, reading and writing.
- Language skills are developed through the study and use of a range of written and spoken material, which extends from everyday oral exchanges to literary texts related to the culture(s) concerned.

Assessment

Higher level (HL)

- Two written examination papers externally assessed
- Two oral activities internally assessed by the teacher and externally moderated by the IBO

Standard level (SL)

- Same assessment model as HL



A Guide to the IB Diploma Programme for Universities & Colleges

APPENDIX A: Course Descriptions

Language ab initio (beginner)

Group 2—second language

Offered at standard level (SL) only, in 12 languages

A foreign language course for students with little or no previous experience of the target language.

- Provides an opportunity for students to further their linguistic skills by taking up a second foreign language, or for students to learn a foreign language for the first time.
- Concentrates on the acquisition of language necessary for practical communication in a variety of everyday situations.
- Develops the four primary skills of listening, speaking, reading and writing.
- Enables students to acquire a basic awareness of the culture(s) related to the language through the study of a core-syllabus and a language-specific syllabus.

Assessment

Higher level (HL)

- Not applicable

Standard level (SL)

- Two written examination papers externally set and externally assessed
- Two oral activities to be internally assessed by the teacher and externally moderated by the IBO

Classical languages (Latin or Classical Greek)

Group 2—second language

Offered at both higher level (HL) and standard level (SL).

A language course for the study of Latin or Classical Greek designed to

- Introduce students to the language, literature and culture of ancient Greece or Rome.
- Develop in students an appreciation of the cultural achievements of ancient Greek or Roman society.
- Promote the acquisition of language skills as the foundation of the course.
- Give students the opportunity to study surviving texts in the original language, as well as additional texts in translation.

Assessment

Higher level (HL)

- Two written examination papers externally assessed
- An activity internally assessed by the teacher and externally moderated by the IBO. Choice of:
 - 1,000-word research dossier
 - 10-minute oral presentation in the target language
 - 200-word composition translating English, French, or Spanish into Latin or Classical Greek.

Standard level (SL)

- Two written examination papers externally assessed



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APPENDIX A: Course Descriptions

Business and management

Group 3—individuals and societies

Offered at both higher level (HL) and standard level (SL).

- Explores how and why individuals form organizations and their problems and life cycles.
- Provides a broad knowledge of the variety of organizations that exist, including profit and non-profit.
- Examines and applies the principles of organization and the techniques widely practised in the ongoing process of decision making in organizations.
- Develops in students an understanding of the interdependency of organizations and its effect on problem solving.
- Examines the role of individuals and groups within organizations.

Assessment

Higher level (HL)

- Two written examination papers externally assessed
- Research project (2,000–2,300 words) internally assessed by the teacher and externally moderated by the IBO

Standard level (SL)

- Two written examination papers externally assessed
- Written assignment (1,000–1,500 words) internally assessed by the teacher and externally moderated by the IBO

Geography

Group 3—individuals and societies

Offered at both higher level (HL) and standard level (SL).

Study of the core theme—population, resources and development—is compulsory.

Optional themes for further study include: topographic mapping, globalization and contemporary issues, and the management of specific environments.

Assessment

Higher level (HL)

- Two written examination papers externally assessed
- Fieldwork leading to one hypothesis-based written report (2,500 words) internally assessed by the teacher and externally moderated by the IBO

Standard level (SL)

- Two written examination papers externally assessed
- One piece of coursework related to fieldwork or research (1,500 words) internally assessed by the teacher and externally moderated by the IBO



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APPENDIX A: Course Descriptions

Economics

Group 3—individuals and societies

Offered at both higher level (HL) and standard level (SL).

- Promotes disciplined economic reasoning skills.
- Enables students to apply the tools of economic analysis to situations and data, and to explain the findings clearly.
- Provides an understanding of how individuals and societies organize themselves in the pursuit of economic objectives.
- Enables students to evaluate economic theories, concepts, situations and data in a way that is considered, rational and unprejudiced.
- Fosters international perspectives that feature a tolerance and understanding of the diversity of economic realities in which individual and societies function.

There are five compulsory parts of the syllabus.

- Introduction to economics
- Microeconomics
- Macroeconomics
- International economics
- Development economics

Assessment

Higher level (HL)

- Three written examination papers externally assessed
- Portfolio of four commentaries (each 650–750 words) internally assessed by the teacher and externally moderated by the IBO

Standard level (SL)

- Two written examination papers externally assessed
- Portfolio of four commentaries (each 650–750 words) internally assessed by the teacher and externally moderated by the IBO

APPENDIX A: Course Descriptions

History

Group 3—individuals and societies

Offered at both higher level (HL) and standard level (SL).

- Promotes the acquisition and understanding of historical knowledge in breadth and in depth, and across different cultures.
- Encourages an appreciation and understanding of history as a discipline, including the nature and diversity of its sources, methods and interpretations.
- Develops in students an international awareness and understanding by promoting the achievement of, empathy with, and understanding of people living in diverse places and at different times.
- Promotes a better understanding of the present through an understanding of the past; an appreciation of the historical dimension of the human condition.
- Develops in students an ability to use and communicate historical knowledge and understanding; and a lasting interest in history.

All students at higher level and standard level study one of the following prescribed subjects from a choice of three:

- Prescribed subject 1: The USSR under Stalin, 1924 to 1941
- Prescribed subject 2: The emergence and development of the People's Republic of China (PRC), 1946 to 1964
- Prescribed subject 3: The Cold War, 1960 to 1979.

All students study a selection of the following topics in twentieth-century world history:

- Causes, practices and effects of war
- Nationalist and independence movements,

decolonization and challenges facing new states

- The rise and rule of single-party states
- Peace and cooperation: international organizations and multiparty states
- The Cold War
- The state and its relationship with religion and with minorities

Students at HL also study one of the following regions in depth:

- Africa
- Americas
- East and South East Asia and Oceania
- Europe (including Russia/USSR)
- South Asia and the Middle East (including North Africa)

Assessment

Higher level (HL)

- Three written examination papers externally assessed
- Historical investigation (1,500–2,000 words) internally assessed by the teacher and externally moderated by the IBO

Standard level (S)

- Two written examination papers externally assessed
- Historical investigation (1,500–2,000 words) internally assessed by the teacher and externally moderated by the IBO



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APPENDIX A: Course Descriptions

Islamic history

Group 3—individuals and societies

Offered at both higher level (HL) and standard level (SL).

The course is designed to provide students with the means of acquiring a deep and open understanding of the Islamic world in its various aspects, and of its contribution to world civilization.

Approached from a historical perspective, the course includes political, social, economic, intellectual and other facets of the Islamic world.

Students at HL and SL study a prescribed topic and at least two historical topics relating to the origins of Islam and its developments through to AH 807/AD 1405.

In addition, students at HL undertake a study of at least two options chosen from the following list.

- The Fatimids AH 297–567/AD 909–1171
- The Ottomans AH 680–1342/AD 1400–1566
- Warfare in the medieval Islamic world
- Muslim rule in Spain AH 92–897/AD 711–1492
- The intellectual contribution of Islam; and
- The Islamic city and Islamic art and architecture AH 41–1342/AD 661–1566.

Assessment

Higher level (HL)

- Three written examination papers externally assessed
- Islamic historical study (1,200–1,500 words) internally assessed by the teacher and externally moderated by the IBO

Standard level (SL)

- Two written examination papers externally assessed
- Islamic historical study (1,200–1,500 words) internally assessed by the teacher and externally moderated by the IBO



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APPENDIX A: Course Descriptions

Information technology in a global society (ITGS)

Group 3—individuals and societies

Offered at both higher level (HL) and standard level (SL).

- Examines the interaction between information, technology and society.
- Develops in students an understanding of the advantages and disadvantages of new technologies as methods of expanding our knowledge of the world at the local and global level.
- Promotes an understanding of the social significance of information technology for individuals, communities and organizations.
- Enables students to analyse and evaluate the ethical considerations arising from the widespread use of information technology at the local and global level.
- Encourages students to recognize that people can hold diverse opinions about the impact of information technology on individuals and societies.

Students at HL and SL study three compulsory topics.

- Social and ethical issues
- IT systems in a social context
 - basics—hardware and networks
 - applications
 - communication systems
 - integrated systems

- Areas of impact (all students are required to study business and employment; students at HL then study five further areas of impact, while students at SL study at least two.)

Assessment

Higher level (HL)

- Three written examination papers externally assessed
- Portfolio and extension: three pieces of written work (each 800–1,000 words) and an extension to one piece (800–1,000 words), internally assessed by the teacher and externally moderated by the IBO

Standard level (SL)

- Two written examination papers externally assessed
- Portfolio: three written pieces (800–1,000 words each) on social and ethical issues, internally assessed by the teacher and externally moderated by the IBO
- Project: an IT solution to a problem set in a social context (comprising a product, a written report of 2,000–2,500 words, and a log book), internally assessed by the teacher and externally moderated by the IBO



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APPENDIX A: Course Descriptions

Philosophy

Group 3—individuals and societies

Offered at both higher level (HL) and standard level (SL).

- Develops in students an intellectually independent and creative way of thinking.
- Encourages students to relate their philosophical understanding to other disciplines, and to personal and civic life.
- Enables students to formulate arguments in a rational and logical way.
- Encourages students to examine critically their own experience and ideological and cultural biases.
- Promotes an awareness of the plurality of philosophical traditions.
- Develops in students a way of thinking that draws on personal reflection and a knowledge of philosophical traditions.

Assessment

Higher level (HL)

- Two written examination papers externally assessed
- Two philosophical exercises (1,000–1,200 words each) internally assessed by the teacher and externally moderated by the IBO

Standard level (SL)

- Same assessment model as HL



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APPENDIX A: Course Descriptions

Psychology

Group 3—individuals and societies

Offered at both higher level (HL) and standard level (SL).

The course is divided into four parts:

1. Perspectives
 - Biological
 - Cognitive
 - Learning
 - Humanistic
2. Options
 - Comparative psychology
 - Cultural psychology
 - The psychology of dysfunctional behaviour
 - Health psychology
 - Lifespan psychology
 - Psychodynamic psychology
 - Social psychology
3. Research methodology
 - Ethics
 - Quantitative research methods
 - Qualitative research methods
4. Experimental study

Students at **HL** must study

- All perspectives
- Two of the options
- All aspects of research methodology
- They must also design and implement three experimental studies

Students at **SL** must study

- The biological, cognitive and learning perspectives
- One of the options
- Ethics and quantitative research methods
- They must also design and implement three experimental studies

Assessment

Higher level (HL)

- Three written examination papers externally assessed
- Experimental study (25 hours) internally assessed by the teacher and externally moderated by the IBO

Standard level (SL)

- Two written examination papers externally assessed
- Experimental study (15 hours) internally assessed by the teacher and externally moderated by the IBO



A Guide to the IB Diploma Programme for Universities & Colleges

APPENDIX A: Course Descriptions

Social and cultural anthropology

Group 3—individuals and societies

Offered at higher level (HL) and standard level (SL).

The course focuses on the comparative study of culture and human societies.

There are three compulsory themes at HL and SL.

- Social organization
- Systems of belief and knowledge
- Processes of change and transformation

Students at HL must also study six fundamental theoretical issues.

- Materialism and idealism
- Agency-centred and structure-centred approaches
- Particularistic and universalistic perspectives
- Synchronic and diachronic perspectives
- Cohesion and conflict
- Relation to empirical material

Assessment

Higher level (HL)

- Three written examination papers externally assessed
- Two compulsory activities internally assessed by the teacher and externally moderated by the IBO:
 - field research using two different data collection techniques
- research report (2,000 words)

Standard level (SL)

- Two written examination papers externally assessed
- Two compulsory activities internally assessed by the teacher and externally moderated by the IBO:
 - a one-hour observation followed by a written report (500–600 words)
 - a critique (criticism and analysis) of the initial report (600–700 words)



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APPENDIX A: Course Descriptions

Biology

Group 4—Experimental sciences

Offered at both higher level (HL) and standard level (SL).

Students at HL and SL study five core topics.

- Cells
- The chemistry of life
- Genetics
- Ecology and evolution
- Human health and physiology

Students at HL must complete additional study in eight topics.

- Nucleic acids and proteins
- Cell respiration and photosynthesis
- Genetics
- Human reproduction
- Defense against infectious disease
- Nerves, muscles and movement
- Excretion
- Plant science

There are optional course topics for students at both HL and SL.

- Evolution
- Neurobiology and behaviour
- Applied plant and animal science
- Ecology and conservation

Further options for students at SL include

- Diet and human nutrition
- Physiology of exercise
- Cells and energy

There is a further option for students at HL.

- Further human physiology

Students at SL are required to study any two options with a duration each of 15 hours. Students at HL are required to study any two options with a duration each of 22.5 hours.

Assessment

Higher level (HL)

- Three written examination papers externally assessed
- Practical/laboratory investigations internally assessed by the teacher and externally moderated by the IBO
- Group 4 project (interdisciplinary): this is not a compulsory assessed element. Schools can choose to assess it as part of the internal assessment

Standard level (SL)

- Same assessment model as HL

APPENDIX A: Course Descriptions

Chemistry

Group 4—experimental sciences

Offered at both higher level (HL) and standard level (SL).

Designed to introduce students to the theories and practical techniques involved in the composition, characterization, and transformation of substances. As the central science, the chemical principles investigated underpin both the physical world in which we live and all biological systems.

Students at HL and SL study 11 core topics.

- Stoichiometry
- Atomic theory
- Periodicity
- Bonding
- States of matter
- Energetics
- Kinetics
- Equilibrium
- Acids and bases
- Oxidation and reduction
- Organic chemistry

Students at HL must complete additional study in nine topics.

- Atomic theory
- Periodicity
- Bonding
- Energetics
- Kinetics
- Equilibrium
- Acids and bases
- Oxidation and reduction
- Organic chemistry

There are optional course topics for students at both HL and SL.

- Medicines and drugs
- Human biochemistry
- Environmental chemistry
- Chemical industries
- Fuels and energy

Further options for students at HL include

- Modern analytical chemistry
- Further organic chemistry

There is a further option for students at SL.

- Higher physical organic chemistry

Students at SL are required to study any two options with a duration each of 15 hours. Students at HL are required to study any two options with a duration of 22.5 hours.

Assessment

Higher level HL)

- Three written examination papers externally assessed
- Practical/laboratory investigations internally assessed by the teacher and externally moderated by the IBO
- Group 4 project (interdisciplinary): this is not a compulsory assessed element. Schools can choose to assess it as part of the internal assessment

Standard level (SL)

- Same assessment model as HL



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APPENDIX A: Course Descriptions

Physics

Group 4—experimental sciences

Offered at both higher level (HL) and standard level (SL).

Designed to introduce students to the laws of physics, the experimental skills required in physics, and the social and historical aspects of physics as an evolving body of human knowledge about nature.

Students at HL and SL study six topics.

- Physics and physical measurement
- Mechanics
- Thermal physics
- Waves
- Electricity and magnetism
- Atomic and nuclear physics

Students at HL must complete additional study in six topics.

- Measurement and uncertainties
- Mechanics
- Thermal physics
- Wave phenomena
- Electromagnetism
- Quantum physics and nuclear physics

There are optional course topics for students at both HL and SL, from which the HL student may only choose two,

while the SL student may choose two from this list as well as the further options listed in the section below.

- Biomedical physics
- The history and development of physics
- Astrophysics
- Relativity
- Optics

Further options for students at SL include

- Mechanics extension
- Quantum physics and nuclear physics
- Energy extension

Students at SL are required to study any two options with a duration each of 15 hours. Students at HL are required to study any two options with a duration each of 22.5 hours

Assessment

Higher level (HL)

- Three written examination papers externally assessed
- Practical/laboratory investigations internally assessed by the teacher and externally moderated by the IBO
- Group 4 project(interdisciplinary): this is not a compulsory assessed element. Schools can choose to assess it as part of the internal assessment

Standard level (SL)

- Assessment as HL



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APPENDIX A: Course Descriptions

Design technology

Group 4—experimental sciences

Offered at both higher level (HL) and standard level (SL).

The course aims to teach students not only design and technology, but also how to adapt to new experiences, and how to approach problems with the appropriate skills and techniques to identify the problem's important elements and develop optimum solutions. It assumes no previous experience in either design technology or designing.

Students at HL and SL study six core topics.

- Designers and the design cycle
- The responsibility of the designer
- Materials
- Manufacturing processes and techniques
- Production systems
- Clean technology and green design

Students at HL must complete additional study in three topics.

- Raw material to final product
- Microstructures and macrostructures
- Appropriate technologies

There are optional course topics for students at both HL and SL, from which the HL student may only choose two, while the SL student may choose two from this list as well

as the further options listed in the section below.

- Food technology
- Computer-aided design, manufacture and production
- Invention, innovation and design
- Health by design
- Electronic products

Further options for students at SL include

- Raw materials to final product
- Microstructures and macrostructures
- Appropriate technologies

Students at SL are required to study any two options with a duration each of 15 hours. Students at HL are required to study two options with a duration each of 22.5 hours.

Assessment

Higher level (HL)

- Three written examination papers externally assessed
- Practical/laboratory investigations internally assessed by the teacher and externally moderated by the IBO
- Group 4 project (interdisciplinary): this is not a compulsory assessed element. Schools can choose to assess it as part of the internal assessment
- Design project

Standard level (SL)

- Same assessment model as HL



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APPENDIX A: Course Descriptions

Environmental systems

Group 4—experimental sciences

Offered at standard level (SL) only.

The course provides students with a coherent perspective on the environment that is essentially scientific, and above all enables them to adopt an informed and responsible stance on the wide range of environmental issues they will inevitably come to face.

Students are required to study four broad topics.

- Systems and models
- The ecosystem
- Global cycles and physical systems
- Human population and carrying capacity

Students are required to complete additional study in option A, plus one other option of their choice, each with a duration of 15 hours.

- A Analyzing ecosystems
- B Impacts of resource exploitation
- C Conservation and biodiversity
- D Pollution management

Assessment

Higher level (HL)

- *Not applicable*

Standard level (SL)

- Three written examination papers externally assessed
- Practical/laboratory investigations internally assessed by the teacher and externally moderated by the IBO
- Group 4 project (interdisciplinary): this is not a compulsory assessed element. Schools can choose to assess it as part of the internal assessment.



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APPENDIX A: Course Descriptions

Mathematics HL

Group 5—mathematics and computer science

Offered at the higher level (HL) only.

This course is for students who will continue to study mathematics or engineering at university, and for students who have a good background and genuine interest in mathematics and who enjoy meeting its challenges and problems.

Before entering the course, students should have a strong understanding of arithmetic, algebra, geometry, trigonometry and statistics.

All students must study seven core topics.

- Algebra
- Functions and equations
- Circular functions and trigonometry
- Matrices
- Vectors
- Statistics and probability
- Calculus

Students also must complete one of the following four options.

- Statistics and probability
- Sets, relations and groups
- Series and differential equations
- Discrete mathematics

Assessment

Higher level (HL)

- Three written examination papers externally assessed
- Portfolio—two assignments, internally assessed by the teacher and externally moderated by the IBO, representing two types of tasks:
 - mathematical investigation
 - mathematical modelling

Standard level (SL)

- *Not applicable*



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APPENDIX A: Course Descriptions

Mathematics SL

Group 5—mathematics and computer science

Offered at standard level (SL) only.

This course provides students who will continue to study mathematics at university with a background of mathematical thought and a reasonable level of technical ability.

Before entering the course, students should have a good understanding of arithmetic, algebra, geometry, trigonometry, and statistics.

All students must study seven core topics.

- Algebra
- Functions and equations
- Circular functions in trigonometry
- Matrices
- Vectors
- Statistics and probability
- Calculus

Assessment

Higher level (HL)

- *Not applicable*

Standard level (SL)

- Two written examination papers externally assessed
- Portfolio—two assignments internally assessed by the teacher and externally moderated by the IBO, representing two types of tasks:
 - mathematical investigation
 - mathematical modeling



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APPENDIX A: Course Descriptions

Mathematical studies SL

Group 5—mathematics and computer science

Offered at standard level (SL) only.

This course is designed for students who do not anticipate a need for mathematics in their future studies. It develops the skills needed to cope with the mathematical demands of a technological society with an emphasis on the application of mathematics to real-life, everyday situations.

Before entering the course, students should have a good understanding of basic arithmetic, algebra, geometry, and trigonometry.

All students must study eight core topics.

- Introduction to the graphic display calculator
- Number and algebra
- Sets, logic and probability
- Functions
- Geometry and trigonometry
- Statistics
- Introductory differential calculus
- Financial mathematics

Assessment

Higher level (HL)

- *Not applicable*

Standard level (SL)

- Two written examination papers externally assessed
- Project: an individual piece of work involving the collection of information or the generation of measurements, and the analysis and evaluation of the information or measurements, internally assessed by the teacher and externally moderated by the IBO

APPENDIX A: Course Descriptions

Further mathematics SL

Group 5—mathematics and computer science

Offered at standard level (SL) only.

This course is for students who have attained a high degree of competence in a range of analytical and technical skills, and who display considerable interest in mathematics. Most students will continue to study mathematics at university, either as a subject in its own right or as a major component of a related subject.

Students must be familiar with the topics in the core syllabus for the mathematics HL course and will be presumed to have already studied one of the four option topics as part of the mathematics HL course.

All students must study one geometry topic and four mathematics HL option topics.

- Geometry
- Statistics and probability
- Sets, relations and groups
- Series and differential equations
- Discrete mathematics

Assessment

Higher level (HL)

- *Not applicable*

Standard level (SL)

- Two written examination papers externally assessed



A Guide to the IB Diploma Programme for Universities & Colleges

APPENDIX A: Course Descriptions

Computer science

Group 5—mathematics and computer science

Offered at both higher level (HL) and standard level (SL).

This course is designed for students interested in problem solving using computers. Skills of logic and analytical thinking will be developed as they are guided through problem solving strategies and definitions to the construction of algorithms to create solutions.

Common core (HL and SL students)

- Systems life cycle and software development
 - The systems life cycle
 - Systems analysis
 - Systems design
 - Social significance and implications of computer systems
 - Software life cycle
 - Software design
 - Documentation
- Program construction in Java

- Computing system fundamentals
 - Language translators
 - Computer architecture
 - Computer systems
 - Networked computer systems
 - Data representation
 - Errors
 - Utility software
- Case study
- Program dossier

Additional HL material (HL students only)

- Computer mathematics and logic
- Number systems and representations
- Boolean logic



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APPENDIX A: Course Descriptions

Computer science (cont.)

Group 5 mathematics and computer science

- Abstract data structure and algorithms
 - Fundamentals
 - Static data structures
 - Dynamic data structures
 - Objects in problem solutions
 - Recursion
 - Algorithm evaluation
- Further system fundamentals
 - Processor configuration
 - Magnetic disk storage
 - Operating systems and utilities
 - Further network fundamentals
 - Computer/peripheral communication
- File organization
- Case study (extended study)

Assessment

Higher level (HL)

- Two written examination papers externally assessed
- Program dossier: an individual piece of work (for which the analysis, design and production of the final system must be well documented) addressing a single problem that can be solved using computer systems and which has an identified end-user. Internally assessed by the teacher and externally moderated by the IBO

Standard level (SL)

- Same assessment model as HL

APPENDIX A: Course Descriptions

Visual arts

Group 6—the arts

Offered at both higher level (HL) and standard level (SL).

- Provides students with the opportunities to make personal, sociocultural and aesthetic experiences meaningful through the production and understanding of art.
- Exemplifies and encourages an inquiring and integrated approach towards visual arts in their various historical and contemporary forms.
- Promotes visual and contextual knowledge of art from various cultures.
- Enables students to learn about themselves and others through individual and, where appropriate, collaborative engagement with the visual arts.

There are core elements in common to each course at HL and SL.

- Introduction to art concepts, criticism and analysis
- Acquisition of studio technical and media skills
- Relation of art to sociocultural and historical contexts

Higher level (HL) course

This course is for the specialist visual arts student, with creative and imaginative abilities, who may pursue the visual arts at university or college level. The course consists of two compulsory parts.

- **Part A—studio work** Practical exploration and artistic production
- **Part B—research workbooks** Independent critical research and analysis, visual and written, in more than one culture

Standard level (SL) course

- **Option A (SLA)** for the visual arts student with creative and imaginative abilities.

Part A—studio work Practical exploration and artistic production

Part B—research workbooks Independent critical research and analysis, visual and written, in more than one culture

- **Option B (SLB)** for the student whose interest in art is mainly critical, cultural and historical

Part A—studio work Practical exploration of artistic techniques

Part B—research workbooks Independent critical research and analysis, visual and written, in more than one culture



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APPENDIX A: Course Descriptions

Visual arts (cont.)

Group 6—the arts

Assessment

General assessment

This consists of an evaluation of each student's body of work as a whole. Both the finished products, and the processes of artistic research and development, are assessed.

Higher level course (HL)

- **Part A—studio work:** exhibition and interview, externally assessed by a visiting IBO examiner
- **Part B—research workbooks:** internally assessed by the teacher and externally moderated by the IBO

Standard level option A (SLA)

- Assessment as HL

Standard level option B (SLB)

- **Part B—research workbooks:** research workbooks and interview, externally assessed by a visiting IBO examiner
- **Part A—studio work:** internally assessed by the teacher and externally moderated by the IBO

APPENDIX A: Course Descriptions

Music

Group 6—the arts

Offered at both higher level (HL) and standard level (SL).

- Promotes a greater awareness and understanding of the power and variety of musical experiences for students who have a general interest in music, and also for students who intend to continue their formal study of music at university or conservatoire level.
- Exposes students to a broad spectrum of music, ranging from classical and modern western traditions to the music of other regions and cultures.
- Balances the creative and practical aspects of music with the theoretical or academic.
- Allows students study musical perception and analysis; enables students to undertake studies of a wide range of musical genres and styles.
- Encourages students to participate in the creation of music through compositions or performance.

Higher level (HL) course

This course is designed for the specialist music student with a background in musical performance and composition, who may pursue music at university or conservatoire level. There are three compulsory parts.

- Musical perception and analysis
- Solo performance—voice or instrument, **one** or **more** recitals
- Composition—**three** contrasting compositions

Standard level (SL) course

- **Solo performance option (SLS)** for the student who has a background in musical performance:
 - musical perception and analysis
 - solo performance—voice or instrument, **one** or **more** recitals
- **Group performance option (SLG)** for students with a general interest in music, or for those without prior experience, particularly members of ensembles:
 - musical perception and analysis
 - group performance— **two** or **more** public performances
- **Composition option (SLC)** for the student who has a background in musical composition:
 - musical perception and analysis
 - composition—**two** contrasting compositions

Musical Perception and Analysis

This part of the syllabus is common to all course options and consists of three elements.

- Study of prescribed work
- Study of musical genres and styles
- Musical investigation



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APPENDIX A: Course Descriptions

Music (cont.)

Group 6—the arts

Assessment

Higher level (HL)

- Listening paper: five musical extracts and five compulsory questions based on the musical perception and analysis part of the syllabus, externally assessed
- Musical investigation: a written media script (2,000 words maximum) investigating the relationships between **two** musical cultures, externally assessed
- Solo performance: presentation of **one** or **more** solo recitals (approximately 20 minutes), internally assessed by the teacher and externally moderated by the IBO
- Composition: **three** contrasting compositions (5–15 minutes total when performed) with recordings and a written statement, internally assessed by the teacher and externally moderated by the IBO

Standard level (SL)

- Listening paper: five musical extracts and five compulsory questions based on the musical perception and analysis part of the syllabus, externally examined
- Musical investigation: a written media script (2,000 words maximum) investigating the relationships between **two** musical cultures, externally assessed
- One of the following options to be internally assessed by the teacher and externally moderated by the IBO:
 - solo performance (SLS)—presentation of **one** or **more** solo recitals (approximately 15 minutes)
 - group performance (SLG)—presentation of **two** public performances (15–30 minutes)
 - composition (SLC)—**two** contrasting compositions (5–15 minutes total when performed) with record

APPENDIX A: Course Descriptions

Theatre arts

Group 6—the arts

Offered at both higher level (HL) and standard level (SL).

This course aims to help students understand the nature of the theatre by making it as well as by studying it, and to understand the forms it takes in other cultures.

Students will be expected to demonstrate the following knowledge and skills:

- a knowledge of the major developments and techniques in the theatrical history of more than one culture
- an ability to interpret and illuminate play scripts and other theatrical texts analytically and imaginatively
- an understanding of the art of the stage and of the essential nature of criticism in the theatre, particularly self-criticism
- an ability to perform before an audience, and to demonstrate an understanding of, and some skill in, acting techniques
- sufficient technical skill to produce satisfactory work in at least one of the theatrical arts or crafts
- an understanding of the processes of theatrical production
- an ability to research imaginatively, selectively and with persistence.

Higher level course (HL)

All students must study five compulsory components at HL.

- Performance skills
- World theatre studies
- Practical play analysis
- Theatre production
- Individual project

Standard level course (SL)

All students must study four components at SL.

- Performance skills
- World theatre studies
- Practical play analysis
- Theatre production



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APPENDIX A: Course Descriptions

Theatre arts (cont.)

Group 6—the arts

Assessment

Higher level (HL)

- Research commission: presentation of a study based on world theatre studies (2,500 words), externally assessed
- Practical play analysis: oral presentation (20–30 minutes maximum) of a directorial approach to a play prescribed by the IBO, externally assessed
- Performance skills and theatre production: participation in practical classwork and a theatre production, internally assessed by the teacher and externally moderated by the IBO
- Portfolio (4,500 words critically and honestly reflecting on the student’s learning and development in theatre arts) and individual project (pursuing with initiative and perseverance and demonstrating a high level of technical skill an individual interest or passion that has arisen during the course), internally assessed by the teacher and externally moderated by the IBO

Standard level (SL)

- Research commission: presentation of a study based on world theatre studies (1,750 words), externally assessed
- Practical play analysis: oral presentation (15–20 minutes maximum) of a directorial approach to a play prescribed by the IBO, externally assessed
- Performance skills and theatre production: participation in practical classwork and a theatre production, internally assessed by the teacher and externally moderated by the IBO

Portfolio (3,000 words reflecting on the student’s learning and development in theatre arts), internally assessed by the teacher and externally moderated by the IBO



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APPENDIX A: Course Descriptions

Extended essay

Each student has the opportunity to investigate a topic of special interest. The essay requirement acquaints diploma candidates with the kind of independent research and writing skills expected by universities. The IBO recommends that a student devote a total of about 40 hours of private study and writing time to the essay, which may be written in one of 60 subjects, including many languages. The essay provides a first opportunity for independent, mentored research and permits students to deepen their programmes of study, for example by selecting a topic in one of their higher level (**HL**) courses. Likewise, they might add breadth to their academic experience by electing to write in a subject not included in their programme choices.

Assessment

Extended essays are externally assessed by examiners appointed by the IBO. There are eight general assessment criteria. For each, different degrees of quality are described by a set of achievement level descriptors.

Each extended essay will also be assessed against the subject assessment criteria for the subject in which it is written. For each of the subject level assessment criteria, different degrees of quality are described by a set of achievement goals.

For both the general and subject specific criteria, some of the criteria may be more important than others and so may have more achievement levels.

Creativity, action, service (CAS)

The IBO's goal is to educate the whole person and foster responsible, compassionate citizens. The CAS programme encourages students to share their energy and special talents with others: students may, for example, participate in theatre or musical productions, sports and community service activities. Students should, through these activities, develop greater awareness of themselves, concern for others, and the ability to work cooperatively with other people.

Assessment: none

While CAS is not an assessed component of the Diploma Programme, a range of evaluation methods, both formal and informal exist to monitor five performance criteria. These include evaluation by the student and evaluation by the school through supervising adults and the CAS coordinator. Likewise, the regional offices are responsible for approving and monitoring CAS in schools.

It should be noted that a Diploma Programme candidate failing to complete the CAS requirement, a minimum of 150 hours over two years, cannot earn the IB diploma.



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APPENDIX A: Course Descriptions

Theory of knowledge

This course is unique to the IBO and is an interdisciplinary requirement intended to stimulate critical reflection on the knowledge and experience gained inside and outside the classroom. The 100-hour course challenges students to question the bases of knowledge, to see the consilience between the academic disciplines, to be aware of subjective and ideological biases, to develop the ability to analyze evidence that is expressed in rational argument. It is a key element in encouraging them to appreciate other cultural perspectives.

Assessment

The assessment model in theory of knowledge comprises two components, both of which should be completed within the 100 hours designated for the course.

- Essay on a prescribed title (1,200–1,600 words): one essay on a title chosen from a list of ten titles prescribed by the IBO for each examination session, externally assessed
- Presentation: as an integral part of the TOK course
 - One presentation (approximately 10 minutes) to the class
 - One written presentation planning document - and presentation marking form including
 - the knowledge issue that is the focus of the presentation
 - a summary in note form of the knowledge issues to be treated during the presentation
 - achievement levels for each of the four assessment criteria, briefly justified, from both student and teacher