

都立国際高校 年間授業計画 / Tokyo Metropolitan Kokusai High School Course Syllabus

○ 科目基礎情報 (Course information)

開講年度 (Academic year)	令和7年度 (2025 年度)
開講学科 (Department)	国際学科国際バカロレアコース / IBDP(International Baccalaureate Diploma Programme)
教科 (Subject Area)	Science
科目 (Subject)	Biology Higher Level (HL)
学年・クラス (Grade・Class)	2 (IBDP 1st year)
単位数 (Number of units)	6
使用教科書 (Text Books)	Hodder IB Diploma Programme Biology 2023 Edition
校外学習 (Field trip)	

○ 教科の目標 (Goals of the subject area)

<p>【知識及び技能】 (Knowledge and Skills)</p> <ul style="list-style-type: none"> acquire a body of knowledge, methods and techniques that characterize science and technology develop an understanding of the relationships between scientific disciplines and their influence on other areas of knowledge. <p>【思考力、判断力、表現力等】 (Ability to think, make judgements, express themselves)</p> <ul style="list-style-type: none"> apply and use a body of knowledge, methods and techniques that characterize science and technology develop an ability to analyse, evaluate and synthesize scientific information <p>【学びに向かう力、人間性等】 (Motivation to learn, Humanity)</p> <ul style="list-style-type: none"> appreciate scientific study and creativity within a global context through stimulating and challenging opportunities develop a critical awareness of the need for, and the value of, effective collaboration and communication during scientific activities

○ 科目の目標 (Goals of the subject)

【知識及び技能】 (Knowledge and Skills)	【思考力、判断力、表現力等】 (Ability to think, make judgements, express themselves)	【学びに向かう力、人間性等】 (Motivation to learn, Humanity)
Demonstrate knowledge and understanding of: a. facts, concepts and terminology b. methodologies and techniques c. communicating scientific information	Apply: a. facts, concepts and terminology b. methodologies and techniques c. methods of communicating scientific information.	Demonstrate the appropriate research, experimental, and personal skills necessary to carry out insightful and ethical investigations.

○ 授業計画 (Course schedule)

	単元の具体的な指導目標 Unit Objectives	指導項目・内容 Topic / Contents	評価規準 Evaluation Criteria	知 思 態			Alotted hours 配当 時数
				①	②	③	
1学期 (1st semester)	Unit (Units) 【Knowledge and Skills】 Demonstrate and effectively communicate knowledge and understanding of facts, concepts, terminologies, and techniques connected to the content of the unit. 【Ability to think, make judgements, express themselves】 Formulate, analyse, evaluate and effectively communicate research questions, hypotheses, techniques, and data essential to the content. 【Motivation to learn, Humanity】 Apply and effectively communicate knowledge and understanding of facts, concepts, terminologies, and techniques essential to the content. Demonstrate experimental and personal skills by engaging in practical activities and working collaboratively with others.	Topic: Ecology and Biodiversity – Within living systems Contents: Diversity of organisms Conservation of biodiversity Adaptation to environment Ecological niches Populations and communities Transfers of energy and matter Stability and change Climate change Classification & cladistics [HL only] Teaching materials: ・ Text book, Powerpoint slides, lab equipment, ICT resources	●【Knowledge/Skills】 ・ Class quiz/tests, Multiple Choice Examination, Extended Response Examination. ●【Ability to think/make judgements/express themselves】 ・ Examination, Lab report, Data Based Questions, Short Answer Examination. ●【Attitude towards learning proactively】 ・ Reflections and student evaluations on lessons/activities. Homework. Class Presentation, Lab protocols (skills/preparation/safety), Class participation/input	○	○	○	39
		Topic: Molecular structure – Tools & raw materials Contents: Water Nucleic acids Carbohydrates and lipids Proteins Teaching materials: ・ Text book, Powerpoint slides, lab equipment, ICT resources		○	○	○	16
		Topic: Practical scheme of work Contents: Laboratory experiments and practical activities. Teaching materials: ・ Text book, Powerpoint slides, lab equipment, ICT resources		○	○	○	28
	定期考査 Examination			○	○		1
	Unit (Units) 【Knowledge and Skills】 Demonstrate and effectively communicate knowledge and understanding of facts, concepts, terminologies, and techniques connected to the content of the unit. 【Ability to think, make judgements, express themselves】	Topic: Cellular structure – Units of life Contents: Cell structure Membranes and membrane transport Organelles and compartmentalization Origins of cells [HL only] Viruses [HL only]	●【Knowledge/Skills】 ・ Class quiz/tests, Multiple Choice Examination, Extended Response Examination. ●【Ability to think/make judgements/express themselves】 ・ Examination, Lab report, Data Based Questions, Short Answer Examination.				

	単元の具体的な指導目標 Unit Objectives	指導項目・内容 Topic / Contents	評価規準 Evaluation Criteria	知 ①	思 ②	態 ③	配当 時数
2学期 (2nd semester)	Formulate, analyse, evaluate and effectively communicate research questions, hypotheses, techniques, and data essential to the content. 【Motivation to learn, Humanity】 Apply and effectively communicate knowledge and understanding of facts, concepts, terminologies, and techniques essential to the content. Demonstrate experimental and personal skills by engaging in practical activities and working collaboratively with others.	Teaching materials: ・ Text book, Powerpoint slides, lab equipment, ICT resources	●【Attitude towards learning proactively】 ・Reflections and student evaluations on lessons/activities. Homework. Class Presentation, Lab protocols (skills/preparation/safety), Class participation/input				18
		Topic: Cells in action – Import, export, and production Contents: Cell specialization Cell and nuclear division Water potential Neural signalling Chemical signalling [HL only] Teaching materials: ・Text book, Powerpoint slides, lab equipment, ICT resources				21	
		Topic: Molecules in action – Construction & Demolition Contents: Enzymes and metabolism Cell respiration Photosynthesis DNA replication Protein synthesis Teaching materials: ・ Text book, Powerpoint slides, lab equipment, ICT resources				25	
		Topic: Practical scheme of work Contents: Laboratory experiments and practical activities. Teaching materials: ・ Text book, Powerpoint slides, lab equipment, ICT resources				31	
	定期考査 Examination					1	
3学期 (3rd semester)	Unit (Units) 【Knowledge and Skills】 Demonstrate and effectively communicate knowledge and understanding of facts, concepts, terminologies, and techniques connected to the content of the unit. 【Ability to think, make judgements, express themselves】 Formulate, analyse, evaluate and effectively communicate research questions, hypotheses, techniques, and data essential to the content. 【Motivation to learn, Humanity】 Apply and effectively communicate knowledge and understanding of facts, concepts, terminologies, and techniques essential to the content. Demonstrate experimental and personal skills by engaging in practical activities and working collaboratively with others.	Topic: Genetics and evolution – Survival under pressure Contents: Evolution and speciation Mutations and gene editing Inheritance Natural selection Gene Expression (HL only) Teaching materials: ・ Text book, Powerpoint slides, lab equipment, ICT resources	● 【Knowledge/Skills】 ・ Class quiz/tests, Multiple Choice Examination, Extended Response Examination. ● 【Ability to think/make judgements/express themselves】 ・ Examination, Lab report, Data Based Questions, Short Answer Examination. ● 【Attitude towards learning proactively】 ・ Reflections and student evaluations on lessons/activities. Homework. Class Presentation, Lab protocols (skills/preparation/safety), Class participation/input				25
		Topic: Practical scheme of work Contents: Laboratory experiments and practical activities. Teaching materials: ・ Text book, Powerpoint slides, lab equipment, ICT resources				28	
	定期考査 Examination					1	

総授業時数 Total hours	234
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