

ECONOMICS

TEACHING AND LEARNING SYLLABUS

Pre-University

Higher 2

Implementation starting with
2022 Pre-University One Cohort



Ministry of Education
SINGAPORE

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SECTION 1: INTRODUCTION

- 1.1 Desired Outcomes of Education and the Value of A-Level Economics
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 - 1.3 Syllabus Aims and Key Learning Outcomes
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1. INTRODUCTION

1.1 Desired Outcomes of Education and the Value of A-Level Economics

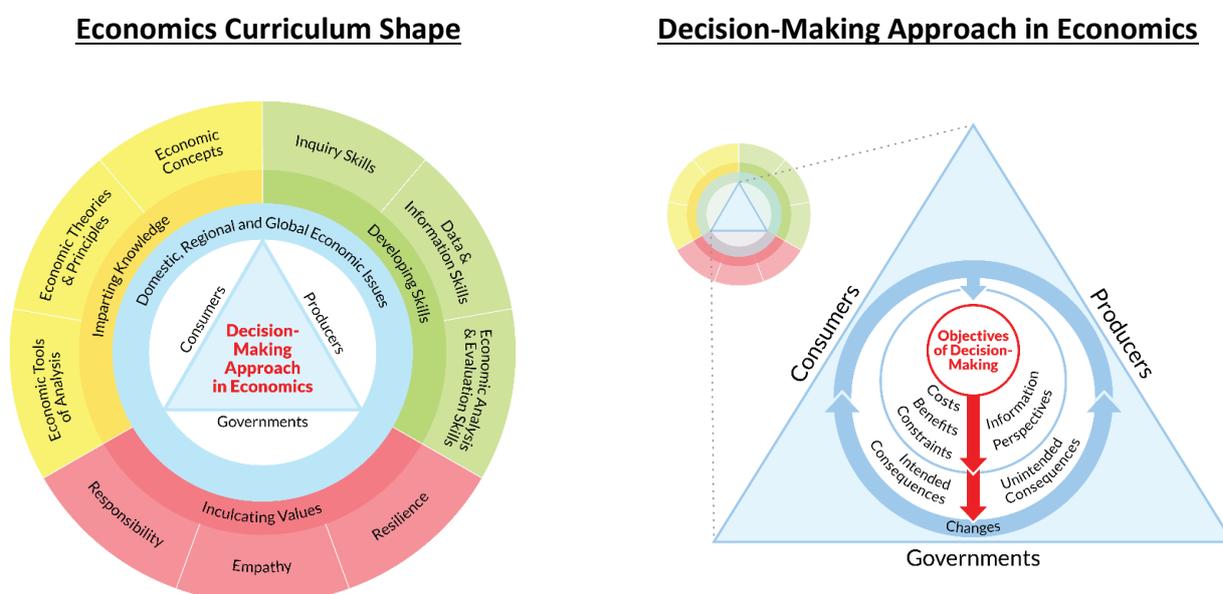
The Desired Outcomes of Education (DOE) are attributes educators aspire for every Singaporean to have by the completion of his formal education. These outcomes establish a common purpose for educators and drive the Ministry of Education's policies and programmes. The person who is schooled in the Singapore Education system embodies the DOE. In sum, he is:

- a **confident person** who has a strong sense of right and wrong, is adaptable and resilient, knows himself, is discerning in judgment, thinks independently and critically, and communicates effectively;
- a **self-directed learner** who takes responsibility for his own learning, who questions, reflects and perseveres in the pursuit of learning;
- an **active contributor** who is able to work effectively in teams, exercises initiative, takes calculated risks, is innovative and strives for excellence; and
- a **concerned citizen** who is rooted to Singapore, has a strong civic consciousness, is informed, and takes an active role in bettering the lives of others around him.

The value of learning A-Level Economics is aligned with the DOE and 21st Century Competencies (21CC). Through the inquiry of economic issues and application of concepts, theories and principles, students develop the capacity to analyse and evaluate the behaviour of economic agents in the allocation of scarce resources. In understanding domestic, regional and global economic issues, students adopt multiple perspectives, recognise trade-offs and consequences arising from decision-making and arrive at well-reasoned decisions. Students thus acquire knowledge and develop skills and values that will enable them to be active contributors and concerned citizens.

1.2 The A-Level Economics Curriculum Shape

The Economics Curriculum Shape sets the direction for and encapsulates the concept of learning A-Level Economics in Singapore. It highlights how the A-Level Economics curriculum teaches students to apply disciplinary thinking to distil real-world issues. This process will require students to apply the Knowledge, Skills and Values taught in the curriculum.



Core of the A-Level Economics Curriculum Shape

At the core of the curriculum shape is the Decision-Making approach in economics which guides disciplinary thinking in A-Level Economics. This approach emphasises sound reasoning and decision-making, which are features of critical and inventive thinking. It enables students to better analyse and evaluate how different economic agents make decisions based on the fundamental disciplinary concepts of scarcity, choice and opportunity cost.

Innermost and Middle Ring of the A-Level Economics Curriculum Shape

The innermost and middle ring of the curriculum shape highlights that students gain knowledge, learn skills and inculcate values through domestic, regional and global economic issues. By applying the Decision-Making Approach in economics, students will be able to better analyse and understand the implications of policy decisions arising from these issues.

Outer Ring of the A-Level Economics Curriculum Shape

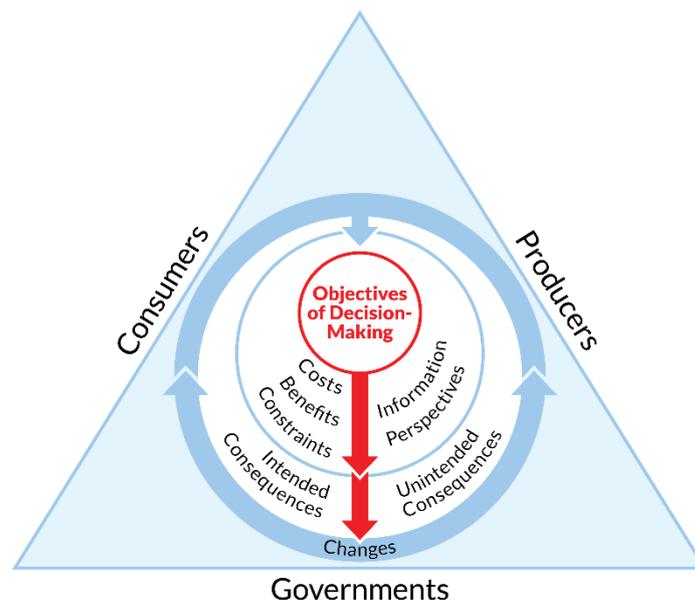
The outer ring explicates the nine Knowledge, Skills and Values learnt through the curriculum. The knowledge segment signifies that students will learn economic concepts, theories and

principles, as well as economic tools of analysis. The skills segment represents inquiry, data and information, and economic analysis and evaluation skills that students will develop. The values segment highlights the values of responsibility, empathy and resilience that students will likely develop through the learning of economics. Focussing on these skills and values will allow the economics curriculum to support the development of MOE’s emerging 21CC.

1.2.1 Decision-Making Approach: Framework for Disciplinary Thinking in A-Level Economics

In the light of the Central Economic Problem of scarcity, decision-making is fundamental. Scarcity leads to the inevitability of choice and trade-offs. In the context of A-Level Economics, decision-making is framed as a process where students analyse how decisions are made from the perspective of different economic agents, adjusting for dynamic changes where relevant. There are three economic agents in the economy (consumers, producers and governments) and a high degree of interconnection exists among them at both the micro and macro levels.

Decision-Making Approach in Economics



In order to achieve specific objectives, economic agents`` need to deliberate the various choices available while taking the following into consideration:

- **Constraints** – Due to the fundamental economic problem of scarcity, choices have to be made. Hence, economic agents consider the constraints they are currently experiencing to determine the choices available to them. Based on these choices,

economic agents will decide on their best-ranked choice that enables them to maximise their self-interest.

- **Costs and benefits** – Benefits to consumers are the satisfaction or utility derived from their consumption decision while costs to consumers are the implicit and explicit costs of their consumption decisions. Implicit cost includes opportunity cost, defined as the value of the next best alternative forgone, while explicit cost refers to the monetary payment. To producers, the benefits are the revenue from their production decisions while the costs are the implicit and explicit costs of their production decisions. Governments often take the perspective of the society as a whole, and benefits from economic decisions can be reaped in the form of societal goals, such as economic growth and equity. Governments are also concerned about external cost to third parties.
- **Information** – In order to make sound decisions, economic agents gather information, both quantitative and qualitative, on the potential costs and benefits of their decision.
- **Perspectives** – When a decision is made by an economic agent, its outcome is likely to affect others. Hence, when making a decision, an economic agent needs to consider the impact on and reaction of others. This may in turn affect the intended outcomes of the decision. The profit-driven producer considers the perspective of the consumer in analysing the potential effectiveness of strategies employed, while governments consider the perspectives of stakeholders (households and firms) in their policy decisions.

Decision-Making in economics is often used to tackle or mitigate an economic issue and the **impact of such decisions** can be analysed in terms of intended consequences and unintended consequences.

- **Intended consequences of the economic decision** – The intended positive and/or negative consequences of an economic decision are assumed to occur because economists assume rational behaviour and economic conditions remain unchanged.
- **Unintended consequences of the economic decision** – Unintended consequences refer to the outcomes that are not intended or anticipated in the economic decision. This might occur because economic agents may not have made their decisions under perfect information conditions, due to an inability to have access to complete information or when economic conditions change.

In order to maximise their self-interest, economic agents would have to undertake an **iterative process** of economic decision-making to achieve the intended outcomes.

- **Changes** – The aims, constraints, costs, benefits, information, and perspectives of economic agents can change over time. When changes occur, the economic decision undertaken by an agent may no longer be optimal, calling for a revisit of the Decision-Making Process to ensure that the intended outcomes can be achieved.

1.3 Syllabus Aims and Key Learning Outcomes

1.3.1 Syllabus Aims

The A-Level H2 Economics teaching and learning syllabus provides a broad understanding of economics. Specifically, the teaching and learning syllabus aims to develop in students:

1. an understanding of fundamental economic concepts, theories and principles, and of the tools and methods of analysis used by economists;
2. the ability to use the tools and methods of economic reasoning to explain and analyse economic issues, and to evaluate perspectives and decisions of economic agents;
3. the habit of reading critically, from a variety of sources, to gain information about the changing economic activities and policies at the national and international levels; and
4. the ability to use evidence in making well-reasoned economic arguments to arrive at rational and informed decisions.

1.3.2 Key Learning Outcomes

Economics is distinctive in terms of the approach used to analyse a range of issues faced by economic agents and economies. The A-Level H2 Economics teaching and learning syllabus aims to develop in students the following knowledge, skills, values and attitudes.

Knowledge

Through the study of economics, students should develop:

- an appropriate command of the language and terminology used in economics;
- an understanding of fundamental economic concepts, theories and principles; and
- an understanding of tools and methods of economic analysis.

Skills

Through the study of economics, students should:

- carry out inquiry by seeking information, activating prior knowledge, investigating significant questions of economic nature and constructing knowledge;
- select and interpret relevant and appropriate economic information from a variety of sources;
- use evidence in formulating economic arguments to arrive at well-considered decisions;
- analyse economic phenomena and the decisions of economic agents using economic concepts, theories and principles;
- evaluate applications of economic theories, concepts and principles in the real world; and
- collaborate to co-construct knowledge and new understandings, and communicate complex information and ideas coherently.

Values

Through the study of economics, students should develop:

- an understanding of their roles and responsibilities as economic agents and how their decisions can impact the economy;
- a concern for society through an understanding of others' perspectives and circumstances; and
- a mental fortitude in embracing economic challenges and working through solutions.

1.4 21CC in A-Level Economics

Beyond imparting the prescribed subject Knowledge, Skills and Values, A-Level Economics education also supports students' development of important competencies necessary to thrive in the 21st century. In addition, students need to be equipped with a range of life skills and develop key social and emotional competencies that will enable them to achieve personal mastery and relate well to others. Most importantly, all learning must be anchored in enduring values.

1.4.1 Framework for 21CC and Student Outcomes

The framework for the 21CC and Student Outcomes is presented below.

Framework for 21CC and Student Outcomes



Knowledge and skills must be underpinned by values, which define a person's character, that shape the beliefs, attitudes and actions of a person, and therefore form the core of the framework for 21CC. The values that are relevant to the learning of economics at the core of the framework are:

- **Responsibility** – The student is responsible if he recognises that he has a duty to himself, his family, community, nation and the world, and fulfils his responsibilities with love and commitment.
- **Empathy** – The student is caring if he acts with kindness and compassion, and contributes to the betterment of the community and the world.

- **Resilience** – The student is resilient if he has emotional strength and persevere in the face of challenges. He manifests courage, optimism, adaptability and resourcefulness.

The middle ring signifies the **Social and Emotional Competencies**, which are skills necessary for students to recognise (**Self-Awareness**) and manage (**Self-Management**) their emotions, develop care and concern for others (**Social Awareness**), make responsible decisions (**Responsible Decision-Making**), establish positive relationships as well as handle challenging situations effectively (**Relationship Management**). The outer ring of the framework represents the emerging 21CC necessary for the globalised world we live in. These are: **Civic Literacy, Global Awareness and Cross-cultural Skills; Critical and Inventive Thinking; and Communication, Collaboration and Information Skills.**

Together, these competencies will enable our students to tap into the rich opportunities of the new digital age, while keeping a strong Singapore heartbeat.

1.4.2 Standards and Benchmarks for the Emerging 21CC

The standards are aspirational statements that define what students should know and be able to do in each of the three domains: Civic Literacy, Global Awareness and Cross-cultural Skills; Critical and Inventive Thinking; and Communication, Collaboration and Information Skills. The benchmarks further clarify and specify the standards, indicating behavioural descriptors that are developmentally appropriate and achievable for majority of students by the end of each stage.

The A-Level H2 Economics teaching and learning syllabus provides multiple opportunities for the development of 21CC. Some examples are:

- The Decision-Making Approach allows students to develop critical and inventive thinking skills in managing the complexities and ambiguities of contemporary economic issues. These skills align closely with the Sound Reasoning and Decision-Making domain within the Critical and Inventive Thinking competency.
- There are multiple opportunities for students to develop Civic Literacy and Global Awareness competencies through the discussion of national and global issues. Students examine trends and issues that affect socio-economic development and consider their implications on public policy decisions and trade-offs for Singapore and the global economy.
- The discussion of real-world issues provides a platform for students to use economic data presented in different forms to make valid inferences. They also learn to evaluate

the authenticity of the information given. The skills of identifying, synthesising and evaluating information align closely with the Management of Information domain within Communication, Collaboration and Information Skills.

Tables 1, 2 and 3 illustrate how the A-Level H2 Economics curriculum is aligned with the Standards and Benchmarks for Junior College 2 or Pre-University 3 level.

Table 1: Standards and benchmarks for Civic Literacy, Global Awareness and Cross-cultural Skills

Standards	Benchmark at the end of JC2/PU3	Learning Opportunities in A-Level H2 Economics
<i>Aware of community and national issues, and plays a part to improve the community and nation</i>	The student is able to discuss issues that affect the culture, socio-economic development, governance, future and identity of Singapore and consider their implications.	Throughout the syllabus, students recognise the challenges and implications of scarcity on the socio-economic development of Singapore. In turn, students develop an understanding of the importance of good governance in policy formulation so that resources are allocated to meet the competing needs of the nation both for the present, as well as for the long-term interests of the future. For example, in the study of Theme 2.3 (Microeconomic Objectives and Policies), teachers may engage students in the discussion of the need for measures to address the market failures resulting from excessive use of road space. In the study of Theme 3.2 (Macroeconomic Objectives and Policies), growth strategies are also examined in the context of improving standard of living in Singapore.
<i>Aware of global issues and trends</i>	The student is able to analyse global trends and their implications for Singapore and other countries.	There are ample opportunities for students to understand the impact of global developments on specific local markets and the broader national economy. In the study of Theme 3.2 (Macroeconomic Objectives and Policies), students analyse economic trends pertaining to economic growth and living standards, and consider how economic

Standards	Benchmark at the end of JC2/PU3	Learning Opportunities in A-Level H2 Economics
		factors and government policies impact the living standards of national economies. In the process, students will also consider the impact of external factors on the standard of living in an economy.

Table 2: Standards and benchmarks for Critical and Inventive Thinking

Standards	Benchmark at the end of JC2/PU3	Learning Opportunities in A-Level H2 Economics
<i>Explores possibilities and generates ideas</i>	The student is able to generate ideas and explore different pathways that lead to solutions.	<p>In microeconomics, under the study of Theme 2.2 (Firms and Decisions), students recognise the objectives of firms, and analyse various pricing, cost and product differentiation strategies to achieve their objectives.</p> <p>In the study of Theme 3.2 (Macroeconomic Objectives and Policies), students recognise the impact of improvements in standard of living for different economic agents, explore the mix of policies undertaken by governments in different countries to structure the economy and, manage internal and external economic challenges to improve the standard of living, and evaluate policy options available to governments when addressing different economic issues.</p>
<i>Exercises sound reasoning, decision-making and metacognition</i>	The student is able to use evidence and adopt different viewpoints to explain his/her reasoning and decisions, having considered the implications of the relationship among different viewpoints.	The use of case studies allows students to examine authentic quantitative and qualitative data from a variety of sources and use the data critically to substantiate and develop arguments. In the study of Theme 2.2 (Firms and Decisions), students can look at quantitative and qualitative data to assess the profit gained if a firm were to place the most profitable products for sale at eye-catching locations in the store. Students develop data interpretation and data handling skills to help them analyse trends and understand the limitations of the data presented. Discursive and evaluative questions require students to examine various perspectives as well as the multifaceted

Standards	Benchmark at the end of JC2/PU3	Learning Opportunities in A-Level H2 Economics
		<p>implications of decisions to arrive at well-reasoned conclusions. For example, in the study of Theme 3.2 (Macroeconomic Objectives and Policies), students discuss the consequences and priorities in government objectives, accounting for the perspectives of different groups in society and the links between macroeconomic problems.</p>
<p><i>Exercises sound reasoning, decision-making and metacognition</i></p>	<p>The student is able to suspend judgement, reassess conclusions and consider alternatives to refine his/her thoughts, attitudes, behaviour and actions.</p>	<p>The disciplinary thinking framework trains students to think like economists in order to recognise, analyse and evaluate multiple sources of information to gain perspectives and review and assess economic issues. For example, in studying car ownership and road usage in Singapore in Theme 2.3 (Microeconomic Objectives and Policies), students need to suspend their initial judgement, if any, about the private cost and benefits of road usage, and consider the external cost of road usage to broaden their understanding about the need to manage traffic congestion in Singapore. Government policies such as Electronic Road Pricing will increase the private cost of road usage. Students will need to suspend their personal judgement against government interventions that will increase their private cost of road usage to better understand the effectiveness of such government intervention.</p>
<p><i>Manages complexities and ambiguities</i></p>	<p>The student is able to identify essential elements of complex tasks, stay focused on them, take on diverse roles and</p>	<p>The disciplinary thinking framework gives students a possible structure to use in breaking down complex tasks. For example, in Theme 3.2 (Macroeconomic Objectives and Policies), students recognise the objectives and priorities of governments; identify policy options and the means to achieve the objectives, the trade-offs,</p>

Standards	Benchmark at the end of JC2/PU3	Learning Opportunities in A-Level H2 Economics
	<p>persevere when he/she encounters difficulties and unexpected challenges.</p>	<p>costs and benefits; and develop an awareness of the information and perspectives that are needed to better understand the costs and benefits in order to manage the complexities of the task.</p> <p>For example, in Theme 2.1 (Price Mechanism and its Applications), students are given opportunities to examine the possible intended and unintended consequences arising from high demand for necessities during COVID-19. The increase in prices of certain necessities provided a signal to producers to increase production (an intended consequence). However, the higher prices may lead to some consumers not being able to afford these necessities, hence leading to inequity (an unintended consequence).</p>
<p><i>Manages complexities and ambiguities</i></p>	<p>The student is able to manage uncertainty and adapt to diverse demands and challenges in new and unfamiliar contexts.</p>	<p>Economics case studies provide students with the opportunity to apply economic concepts, theories and principles to new and unfamiliar contexts. As they are based on complex economic issues, case studies may not have a direct or standard answer. For example, in case studies, students are placed in the role of a decision-maker and provided with sufficient background information and substantive dilemmas for analysis, synthesis and evaluation. In the process, students develop an awareness of the uncertainties and complexities of issues from a range of contexts in which economists are divided on, such as trans-boundary pollution in Theme 2.3 (Microeconomic Objectives and Policies) and growth policies in Theme 3.2 (Macroeconomic Objectives and Policies).</p>

Table 3: Standards and benchmarks for communication, collaboration and information skills

Standards	Benchmark at the end of JC2/PU3	Learning Opportunities in A-Level H2 Economics
<i>Communicates and collaborates effectively</i>	The student is able to convey complex information and ideas coherently and clearly to influence and create impact for specific purposes and contexts.	Students are given opportunities to present information in a systematic and balanced way to address the pressing concerns relevant to the context of the economic issue. For example, in the study of Theme 3 (The National and International Economy), students can use mind-maps to illustrate the interconnectedness of internal and external factors, government policies and economic issues that are presented in different case studies. In this way, students can convey their understanding of the context and support their peers in better understanding the circumstance(s) in which these relationships hold.
	The student is able to interact with others to construct and critically evaluate knowledge, new understandings and ideas.	Constructivist pedagogies, which advocate engaged learning, will help students be more involved in their learning process and create new understandings. One key constructivist approach used in an economics classroom is the Inquiry Based Learning (IBL) approach. IBL incorporates activities such as group work and presentation tasks to allow for peer discussions where different perspectives are considered, evaluated and synthesised. The presentation also serves as a learning artefact, which can be used for sharing and a platform for further discussion with the class. In Theme 2.1 (Price Mechanism and its Applications), students could inquire into why the price of seafood often spiked before Chinese New Year and present their findings in a poster presentation.
<i>Manages, creates and shares digital information thoughtfully, ethically and responsibly</i>	The student is able to verify the accuracy, credibility and currency of information across multiple sources.	Through exposure to quantitative and qualitative data sources throughout the A-Level Economics curriculum, students are given the opportunity to assess the intent of the source, perspectives presented and cross-check with other credible sources to validate the accuracy of information. In Theme 2.3 (Microeconomic Objectives and

Standards	Benchmark at the end of JC2/PU3	Learning Opportunities in A-Level H2 Economics
		Policies), students could collate information and data from government bodies and environmentalists on the potential environmental impact of building the Cross-Island Mass Rapid Transit Line, and assess the intent and credibility of the sources.

SECTION 2: CONTENT

- 2.1 Key Features of the Content for A-Level H2 Economics
- 2.2 Prescribed Content

2. CONTENT

2.1 Key Features of the Content for A-Level H2 Economics

The A-Level H2 Economics syllabus is designed through a thematic approach which reflects a coherent flow of the content and enables students to appreciate the interrelationships between economic concepts, theories and principles. The concepts, theories and principles specified in the syllabus should be taught in the context of the domestic, regional and global issues where appropriate.

2.1.1 Thematic Structure

Organised around three major themes which have been selected to structure the learning of students in a progressive manner. The selection of the themes emphasises the disciplinarity of economics. In addition, the three themes comprise fundamental economic concepts which allow students to have a deeper appreciation of economics. Students will examine economic phenomena, beginning with the individual and societal levels (microeconomic analysis), followed by the national level (macroeconomic analysis).

The three themes examined are as follows:

- Theme 1: The Central Economic Problem
- Theme 2: Markets
- Theme 3: The National and International Economy

Theme 1 (The Central Economic Problem) highlights the Central Economic Problem of unlimited wants and limited resources as fundamental to the discipline. In this theme, rational decision-making with the related core economic concepts is explicated. An overall framework for decision-making by consumers, producers and governments is also presented in Theme 1, linking the three themes across the syllabus.

Theme 2 (Markets) focusses on how firms and markets function. It allows students to examine how markets may fail in achieving efficient and equitable allocation of resources, and the role of the government in addressing these market issues.

Theme 3 (The National and International Economy) focusses on governments as economic agents. It provides an overview of the workings and linkages of the national and international economy. In addition, the impact of external trends and developments on the domestic,

regional and global economies, and their implications for policy choices and decisions of governments, are discussed.

2.1.2 Concepts and Tools of Analysis

Each theme is headed by a preamble stating the key thrust and learning outcomes, followed by the Economics content and a section on concepts and tools of analysis. This section makes explicit decision-making approach and critical thinking in each sub-theme and provides a set of concepts and tools to explain and analyse economic issues, and to understand and evaluate perspectives and decisions of economic agents.

2.2 Prescribed Content

2.2.1 Theme 1 – The Central Economic Problem

Theme 1 introduces students to the Central Economic Problem of unlimited wants and limited resources. The scarcity of resources necessitates choice and leads to decision-making. Through examining the concepts of scarcity, choice and opportunity cost, students will be able to understand the Central Economic Problem facing societies, and how economic agents (consumers, producers and governments) use available information, and also consider benefits, costs, constraints and perspectives to make decisions, which may have intended and unintended consequences.

This theme provides the foundation for the study of microeconomic and macroeconomic topics in Markets (Theme 2) and the National and International Economy (Theme 3) respectively, where the decision-making approach and concepts of scarcity, choice and opportunity cost recur.

Theme 1.1 Scarcity as the Central Economic Problem	
Economics Content	
1.1.1 Scarcity, Choice and Resource Allocation	Additional Information
<p>a. The Central Economic Problem is scarcity, arising from limited resources and unlimited wants</p> <p>b. Scarcity implies that choices have to be made in the allocation of resources between different uses</p> <p>c. When choices are made, there are trade-offs and opportunity costs are incurred</p> <p>d. The concepts of scarcity, choice and opportunity cost can be explained from the perspectives of different economic agents (consumers, producers and governments)</p> <p>e. Production Possibility Curve (PPC) can be used to illustrate scarcity, choice, opportunity cost, productive efficiency, full employment, unemployment or under-utilisation of economic resources and changes in the productive capacity of an economy</p>	
1.1.2 Decision-Making Process of Economic Agents	Additional Information
<p>a. Objectives of rational economic agents: consumers aim to maximise utility (satisfaction), producers aim to maximise profits and governments aim to maximise social welfare</p> <p>b. In the pursuit of their objectives, economic agents gather information, weigh benefits and costs, consider constraints and perspectives before making decisions. They take into account the intended and unintended consequences, and any changes occurring, before reviewing the decisions</p>	<p>A marginalist approach to weighing costs and benefits is expected.</p> <p>An understanding of the concept of cost-benefit analysis (CBA) as a project analysis tool is not required.</p> <p>An awareness of how consumers allocate resources to maximise utility is sufficient. The formal derivation of utility maximisation is not required.</p>
Concepts and Tools of Analysis	
<ul style="list-style-type: none"> • Scarcity, choice and opportunity cost • Production possibility curve (PPC) • Marginalist principle 	

2.2.2 Theme 2 – Markets

In Theme 2, students examine how markets deal with the Central Economic Problem and how decisions are made by economic agents in markets. Theme 2 aims to provide students with a microeconomic analysis of how the price mechanism addresses the questions of what to produce, how to produce and for whom to produce. In addition, students will examine the strategies of firms to achieve their objectives and understand that while decisions made by consumers and producers are necessary for the functioning of markets, these decisions may lead to inefficient and/or inequitable outcomes. Students will be able to discuss how governments may intervene through public policy measures to improve efficiency and equity, while recognising limitations, unintended consequences and possible trade-offs of government intervention. This theme provides students with insights into real-world microeconomic issues and opportunities to deepen economic reasoning, analysis and application of microeconomic concepts to markets in Singapore and the global economy.

Microeconomic concepts, theories and principles in Themes 1 and 2 provide the foundation for students to extend their understanding of the microeconomy to the macroeconomy in Theme 3.

Theme 2.1 Price Mechanism and its Applications	
Economics Content	
2.1.1 Price Mechanism and its Functions	Additional Information
a. How the price mechanism allocates scarce resources in the free market through signalling, incentive and rationing functions	
2.1.2 Demand and Supply Analysis and its Applications	Additional Information
a. Market demand as a summation of individual demand	Application to real-world markets, including the labour market, is required.
b. Market supply as a summation of individual supply	
c. Changes in price of the good/service itself cause a movement along the demand/supply curve	Theory of Marginal Revenue Productivity (MRP) of Labour is not required.
d. Changes in non-price determinants and how they cause shifts in the demand/supply curve	
e. The equilibrium market price and quantity are determined by the interaction of demand and supply	

<p>f. Changes in demand and supply can affect equilibrium price and quantity, consumer expenditure, producer revenue, consumer surplus and producer surplus</p> <p>g. These outcomes can be affected by price elasticities of demand and supply, income and cross elasticities of demand</p>	
<p>2.1.3 Government Intervention in Markets</p>	<p>Additional Information</p>
<p>a. Governments may intervene in markets in the form of taxes, subsidies, price controls (maximum and minimum prices) and quantity controls (quotas)</p> <p>b. Government intervention in markets can affect the equilibrium price and quantity, consumer expenditure and producer revenue, consumer surplus and producer surplus</p> <p>c. Impact of government intervention on markets may be affected by price elasticities of demand and supply</p>	<p>Knowledge of 'incidence' in relation to taxes and subsidies is not required.</p>
<p style="text-align: center;">Concepts and Tools of Analysis</p>	
<ul style="list-style-type: none"> • Price mechanism • Ceteris paribus • Demand and its determinants • Change in demand versus change in quantity demanded • Supply and its determinants • Change in supply versus change in quantity supplied • Market equilibrium <ul style="list-style-type: none"> – Equilibrium price and quantity • Market disequilibrium <ul style="list-style-type: none"> – Shortage and surplus • Price elasticity of demand • Income elasticity of demand <ul style="list-style-type: none"> – Normal and inferior goods • Cross elasticity of demand <ul style="list-style-type: none"> – Complements and substitutes • Price elasticity of supply • Consumer expenditure and producer revenue • Consumer surplus and producer surplus • Taxes and subsidies • Price controls <ul style="list-style-type: none"> – Maximum and minimum prices • Quantity controls <ul style="list-style-type: none"> – Quotas 	

Theme 2.2 Firms and Decisions	
Economics Content	
2.2.1 Objectives of Firms	Additional Information
<p>a. Firms aim to maximise profits</p> <ul style="list-style-type: none"> • Profit as the difference between total revenue and total cost • Profit-maximising output occurs at the point when marginal revenue (MR) equals marginal cost (MC) and where MC is rising <p>b. Firms may choose to pursue alternative objectives such as revenue maximisation, profit satisficing and market share dominance</p>	<p>Firms may lack sufficient or accurate information to make price and output decisions to maximise profits.</p>
2.2.2 Cost and Revenue	Additional Information
<p>a. Firms' cost and revenue concepts in the short run and long run</p> <p>b. Internal and external economies and diseconomies of scale and their link to the long-run average cost of production</p>	<p>The derivation of cost and revenue curves is not required.</p> <p>Detailed explanation of each type of internal (e.g. technical, marketing) and external economies of scale (e.g. concentration, information) and diseconomies of scale is not required.</p>
2.2.3 Firms' Decisions and Strategies	Additional Information
<p>a. Firms make decisions and engage in pricing, cost and product differentiation strategies aimed at raising revenue and/or lowering unit costs. These include:</p> <ul style="list-style-type: none"> • growth, diversification and shut-down • price competition • third degree price discrimination • innovation, research and development • marketing • collusion with other firms <p>b. Firms consider the existing and potential levels of competition in the industry when making decisions and engaging in strategies</p> <p>c. Impact of firms' decisions and strategies on:</p>	<p>An awareness that economists generally classify the four market structures (perfect competition, monopolistic competition, oligopoly, monopoly) based on characteristics such as number and size of firms, barriers to entry and nature of product is required.</p> <p>Diagrammatic analyses of</p> <ul style="list-style-type: none"> • comparison of types of market structure, price

<ul style="list-style-type: none"> • efficiency (allocative, productive and dynamic efficiency) • consumer welfare (consumer choice, product quality and consumer surplus) • other firms (cost, revenue and profit) 	<p>discrimination and shut-down condition; and</p> <ul style="list-style-type: none"> • firms' short run to long run equilibrium adjustment are not required. <p>An awareness that firms may:</p> <ul style="list-style-type: none"> • apply knowledge of consumers' cognitive biases (sunk cost fallacy, loss aversion or salience bias) in their strategies; • be affected by technological disruptions in the industry; • consider social and environmental concerns in their decisions <p>is required.</p>
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Concepts and Tools of Analysis

<ul style="list-style-type: none"> • Profit maximisation condition: $MR=MC$, where MC is rising • Revenue maximisation, profit satisficing, market share dominance • Total cost, average cost, marginal cost • Total revenue, average revenue, marginal revenue • Internal and external economies and diseconomies of scale • Third degree price discrimination • Shut-down condition • Product differentiation • Barriers to entry • Competition versus collusion • Efficiency <ul style="list-style-type: none"> – Allocative, productive and dynamic efficiency • Consumer welfare

Theme 2.3 Microeconomic Objectives and Policies	
Economics Content	
2.3.1 Governments' Microeconomic Objectives	Additional Information
<p>a. Governments' microeconomic objectives are efficiency and equity</p> <p>b. Efficiency in markets occurs when the social optimum is achieved, where Marginal Social Benefit (MSB) = Marginal Social Cost (MSC), maximising society's welfare</p> <p>c. Deadweight loss results when the social optimum is not achieved</p> <ul style="list-style-type: none"> • Deadweight loss can be explained as the reduction in net benefit to society when output level is not at the social optimum <p>d. Efficient resource allocation may not result in equitable outcomes</p> <p>e. Equity occurs when there is fairness in the distribution of essential goods and services</p>	<p>Inequity is a distributional issue and not considered a market failure.</p>
2.3.2 Market Failure and its Causes	Additional Information
<p>a. Market failure occurs when the free market is unable to allocate resources efficiently</p> <p>b. Markets may fail in terms of</p> <ul style="list-style-type: none"> • non-provision of public goods due to non-rivalry and non-excludability • non-socially optimal levels of goods and services due to the presence of externalities, information failure (including asymmetric information), immobility of factors of production, and market dominance 	<p>An awareness of non-rejectability as a characteristic of public goods is required.</p> <p>Asymmetric information may lead to adverse selection and moral hazard.</p> <p>Diagrammatic analyses of factor immobility, asymmetric information, moral hazard and adverse selection are not required.</p>

	A two-diagram approach will suffice – showing that MSC is higher than MPC for negative externalities, and MSB is higher than MPB for positive externalities.
2.3.3 Microeconomic Policies	Additional Information
a. Microeconomic policy decisions undertaken by governments to achieve microeconomic objectives in relation to efficiency and equity	Government intervention may not always achieve efficiency and equity.
b. Policy measures including taxes and subsidies, quotas and tradeable permits, joint and direct provision, rules and regulations, public education in achieving efficiency and equity	An awareness that governments may apply knowledge of cognitive biases (sunk cost fallacy, loss aversion or salience bias) to nudge the decisions of economic agents is required.
c. Effectiveness of policy measures and government failure	
Concepts and Tools of Analysis	
<ul style="list-style-type: none"> • Allocative efficiency • Equity • Market failure • Deadweight loss • Marginal private benefit and cost • Marginal external benefit and cost • Marginal social benefit and cost • Social versus private (market) optimum • Public goods <ul style="list-style-type: none"> – Non-excludability and non-rivalry • Positive and negative externalities • Information failure • Market dominance • Factor immobility 	

2.2.3 Theme 3 – The National and International Economy

Theme 3 provides students with an overview of the workings and linkages of the national and international economy. Students will use the concepts, theories and principles from Themes 1 and 2 to examine the problem of scarcity of resources and the concept of trade-offs at the level of the national economy. In particular, students will examine how governments make policy choices at the national level to improve living standards. In doing so, students will discuss how governments consider competing needs, weigh costs and benefits, recognise trade-offs and consequences to make policy decisions. Students will first gain an understanding of the circular flow of income model and concepts of aggregate demand and aggregate supply, before applying the concepts to analyse macroeconomic issues and government decisions at the national level. Students will also examine domestic and external factors that influence economic growth, price stability, employment and balance of trade, with a focus on how these factors affect a country's standard of living. In addition, students will also discuss the different policy choices available to governments and their effectiveness in achieving higher living standards.

Theme 3.1 Introduction to Macroeconomics	
Economics Content	
3.1.1 Circular Flow of Income	Additional Information
<ul style="list-style-type: none"> a. The circular flow of income as an interactive model involving households, firms, government and the foreign sector b. National income equals expenditure equals output 	
3.1.2 Aggregate Demand and Aggregate Supply	Additional Information
<ul style="list-style-type: none"> a. Aggregate Demand (AD) and its components: consumption (C), investment (I), government spending (G) and net exports (X – M) b. How AD is affected by changes in the determinants of C, I, G and (X – M) c. How Aggregate Supply (AS) is affected by its determinants d. How interaction of AD and AS determines equilibrium level of national output and general price level 	A distinction between autonomous and induced expenditure is required.

e. How changes in the components of AD can have a multiplied effect on national income	Knowledge of marginal propensities (of consumption, savings, taxes and imports) and the multiplier formula is required.
Concepts and Tools of Analysis	
<ul style="list-style-type: none"> • Circular flow of income • Aggregate demand • Determinants of C, I, G and (X – M) • Aggregate supply • Determinants of aggregate supply • National output • General price level • Multiplier effect 	
Theme 3.2 Macroeconomic Objectives and Policies	
Economics Content	
3.2.1 Standard of Living and Macroeconomic Indicators	Additional Information
<p>a. Economies are primarily concerned with improving the standard of living</p> <ul style="list-style-type: none"> • Standard of living involves material and non-material aspects, as measured by real national income per capita taking into account other indicators such as income distribution, leisure time, quality of environment <p>b. Standard of living is affected by an economy’s ability to achieve macroeconomic objectives in terms of sustainable and inclusive economic growth, low unemployment, price stability and a favourable balance of trade position</p> <p>c. Macroeconomic indicators</p> <ul style="list-style-type: none"> • Indicators of economic performance include real Gross Domestic Product (GDP) or Gross National Income (GNI), real GDP or GNI per capita, unemployment rate, Consumer Price Index (CPI) and balance of trade • Human Development Index (HDI) as an indicator to reflect standard of living • Gini coefficient as an indicator to reflect income distribution <p>d. Comparison of living standards over time and over</p>	<p>An awareness of the key components of the balance of payments accounts (current, capital & financial accounts) is required. Knowledge of balance of payments accounting (including sign convention) is not required.</p> <p>An understanding of nominal and real concepts is required. An understanding of how index numbers are interpreted, including the base year and use of weights, is required. Calculation of index numbers and national income is not required.</p> <p>An understanding of the meaning of the Gini</p>

space (between economies)	<p>coefficient (using the Lorenz curve) and the variation of the coefficient between 0 and 1 is required.</p> <p>Calculation of current account of balance of payments, HDI and Gini coefficient is not required.</p>
3.2.2 Macroeconomic Issues	Additional Information
<p>a. Macroeconomic issues and their causes</p> <ul style="list-style-type: none"> • Undesirable economic growth – persistently low or negative, unsustainable, non-inclusive due to factors such as changes in AD or AS, environmental degradation, inequitable income distribution • Unemployment – demand-deficient, structural, frictional due to factors such as lack of AD, technological changes, mismatch of skills, transition between jobs • Price instability – demand-pull inflation, cost-push inflation, deflation due to factors such as changes in AD, costs of production, productive capacity • Persistently large balance of trade deficit or surplus due to factors such as changes in global conditions, international competitiveness, exchange rates <p>b. Consequences of undesirable economic growth, unemployment, price instability, persistently large balance of trade deficit and surplus for economic agents (consumers, producers and governments) on the standard of living</p>	
3.2.3 Macroeconomic Policies	Additional Information
<p>a. Macroeconomic policy decisions undertaken by governments to achieve macroeconomic objectives in relation to living standards</p> <p>b. Policy measures and their effectiveness in achieving macroeconomic objectives:</p> <ul style="list-style-type: none"> • Fiscal policy <ul style="list-style-type: none"> – How discretionary fiscal policy can influence the level of economic activities and living standards through government spending and taxation • Monetary policy 	<p>An understanding that governments around the world focus on different macroeconomic objectives, depending on the state of the economy and the level of development of the country is required.</p> <p>An awareness of the desirability for a government</p>

<ul style="list-style-type: none"> – How monetary policy can influence the level of economic activities and living standards through the management of exchange rates (case of Singapore) and interest rates • Supply-side policies <ul style="list-style-type: none"> – How supply-side policies can improve quantity, quality and mobility of factors of production to increase the productive capacity of an economy and hence affect living standards <p>c. Possibilities of conflicts between macroeconomic objectives and how this may affect governments' decision on macroeconomic policy</p>	<p>to maintain fiscal sustainability over the long term is required.</p> <p>An understanding of how transfer payments can improve income distribution and help achieve inclusive growth is required.</p> <p>Knowledge of the Marshall-Lerner condition is required. Derivation of its formula and calculation are not required.</p>
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Concepts and Tools of Analysis

- Standard of living
 - Material and non-material well-being
 - Gross Domestic Product (GDP) and Gross National Income (GNI)
 - Human Development Index (HDI)
 - Income inequality
 - Gini coefficient
- Economic growth
 - Actual and potential growth
 - Sustainable growth
 - Inclusive growth
- Full employment and unemployment
 - Demand-deficient unemployment
 - Structural unemployment
 - Frictional unemployment
- Price stability
 - Demand-pull inflation
 - Cost-push inflation
 - Deflation
 - Consumer Price Index (CPI)
- Nominal and real concepts
- Balance of trade surplus and deficit
- Short-term capital flows
- Long-term capital flows
 - Foreign direct investment
- Discretionary fiscal policy
- Government budget surplus and deficit
- Monetary policy
 - Exchange rates
 - Interest rates
- Supply-side policies

Theme 3.3 Globalisation and the International Economy	
Economics Content	
3.3.1 Globalisation, International Trade and Economic Co-operation	Additional Information
<p>a. Globalisation as the increased trade of goods and services, and flows of capital and labour between countries</p> <ul style="list-style-type: none"> • Factors affecting globalisation <p>b. Basis of free trade and specialisation</p> <p>c. Benefits and costs of free trade and flows of capital and labour on:</p> <ul style="list-style-type: none"> • Consumers – Prices, choice and variety of goods and services • Producers – Size of markets, degree of competition, cost of production and innovation • Government – Macroeconomic objectives (and policy choice) <p>d. Benefits and costs of protectionism</p> <p>e. Governments may decide to engage in economic co-operation and trade agreements between countries or impose protectionist measures to achieve macroeconomic aims</p>	<p>An understanding of the Theory of Comparative Advantage, in terms of opportunity cost, is required. Numerical illustration of the Theory of Comparative Advantage is not required.</p> <p>Diagrammatic analysis of the effects of tariffs is required.</p> <p>Detailed knowledge of the forms of economic integration, institutional knowledge and legislation is not required. Diagrammatic analyses of economic co-operation and trade agreements between countries are not required.</p>
Concepts and Tools of Analysis	
<ul style="list-style-type: none"> • Globalisation • Free trade • Protectionism <ul style="list-style-type: none"> – Tariffs and non-tariff measures • International and regional economic co-operation 	

SECTION 3: PEDAGOGY

- 3.1 Pedagogical Practices
- 3.2 Inquiry-Based Learning in Economics
- 3.3 Blended Learning in Economics

3. PEDAGOGY

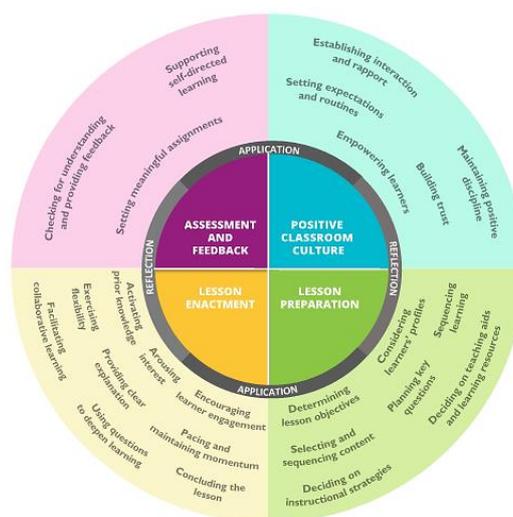
3.1 Pedagogical Practices

The A-Level Economics curriculum seeks to develop in students the ability to inquire about the world around them using an economic lens through the study of contemporary issues and trends at the domestic, regional and global levels. Students will develop skills of analysis and evaluation of data and information in considering the perspectives of different economic agents in coming to considered decisions. To support the development of these knowledge and skills, teachers will need to utilise effective pedagogical practices to nurture students' understanding and appreciation of the subject matter and engage in discussions that will strengthen their communication and collaborative skills.

The Singapore Teaching Practice (STP) provides teachers with a guide on creating meaningful learning experiences that will develop students' 21CC. The STP comprises three components that work together to support teachers to be more effective in teaching and learning. The three components are the Singapore Curriculum Philosophy (SCP), the Knowledge Bases (KB) and the Pedagogical Practices (PP). Collectively, the SCP which espouses our beliefs about teaching, learning and assessment, and the KB which articulates the subject disciplinarity of Economics can be translated into meaningful learning experiences for students when teachers apply PP as indicated in the STP.

The PP comprise four fundamental teaching processes that lie at the heart of good teaching with four corresponding teaching areas that provide teachers with 24 teaching actions and considerations that teachers can use and adapt depending on their students' learning needs.

Singapore Teaching Practice pedagogical practices



3.2 Inquiry-Based Learning (IBL) in Economics

Inquiry-based learning (IBL) is closely related to the constructivist approach and is an effective pedagogy to achieve the A-Level Economics syllabus aims and to develop students' 21CC.

The following table shows how IBL is consistent with the A-Level Economics curriculum and H2 syllabus aims.

Table 4: Alignment of the A-Level Economics curriculum, H2 syllabus aims and IBL

A-Level Economics Curriculum	H2 Syllabus Aims	IBL
<ul style="list-style-type: none"> • Students learn through contemporary issues and trends at the domestic, regional and global levels. • <u>Knowledge</u>. Students learn economic concepts, theories, principles as well as tools of analysis. • <u>Skills</u>. Students are equipped with inquiry, data and information, analysis and evaluation skills which support the development of MOE's 21CC. • <u>Values</u>. Students will be presented with opportunities to inculcate the values of 'responsibility', 'empathy' and 'resilience', all of which map directly to 21CC Core Values. 	<ul style="list-style-type: none"> • An understanding of fundamental economic concepts, theories and principles, and of the tools and methods of analysis used by economists; • The ability to use the tools and methods of economic reasoning to explain and analyse economic issues, and to evaluate perspectives and decisions of economic agents; • The habit of reading critically, from a variety of sources, to gain information about the changing economic activities and policies at the national and international levels; and • The ability to use evidence in making well-reasoned economic arguments to arrive at rational and considered decisions. 	<ul style="list-style-type: none"> • IBL requires students to methodically build evidence-based claims (explanations, arguments) to answer meaningful questions, which involves evaluating the strength of others' arguments, reasons and evidence as well as own claims based on good reasons, sound reasoning and evidence. • IBL begins with a set of observations or data to interpret, or a complex real-world problem, and as the students study the data or problem they generate a need for facts, procedures and guiding principles.

3.2.1 Constructivism and Inquiry-based Learning

Constructivism is based on the principle that learning occurs through meaningful experiences, where knowledge is progressively built through the interactions that the learners have within the learning environment. Learners reconstruct and reorganise their experiences as they learn, such that knowledge is actively built up by learners through social interaction and in dialogue and cooperation with other learners and their teachers. In other words, learners learn by actively constructing knowledge. With constructivism, teachers do not merely transmit knowledge to passive learners, but focus on facilitating the learning process such that learners are actively engaged in constructing knowledge.

One of the approaches of constructivism is IBL. According to the Academy of Singapore Teachers (AST), “IBL is a constructivist approach to teaching and learning to explore a problem, an issue, a phenomenon or an idea”. There are some core elements to an IBL approach that are based on constructivism. These elements are:

- learning stimulated by inquiry, i.e., driven by questions or problems;
- learning based on a process of seeking knowledge and new understanding;
- a learning-centred approach to teaching in which the role of the teacher is to act as a facilitator;
- a move to self-directed learning with students taking increasing responsibility for their learning and the development of skills in self-reflection; and
- an active approach to learning.

With the asking of questions and seeking of knowledge and new understanding actively in IBL, students are able to construct their own meaning of reality. It is thus the students who construct knowledge and understanding rather than knowledge being imposed or transmitted by direct instruction.

3.2.2 Inquiry-Based Learning

IBL begins with a set of observations or data to interpret, or a complex real-world problem, and as the students study the data or problem, they raise meaningful essential questions that enable them to better understand the reality or the complex real-world problem.

Through this, students will also generate a need for facts, procedures and guiding principles so that they can methodically build evidence-based claims (i.e., explanations and arguments)

to answer those essential questions, which involves evaluating the strength of others' arguments, reasons and evidence as well as own claims based on good reasons, sound reasoning and evidence.

In IBL, teachers are activators and facilitators of learning through inquiry to achieve intended student learning outcomes. Depending on the learning objective and the profile of the students, teachers can select different levels of inquiry for a particular lesson. The different levels of inquiry form a continuum and they are, confirmation inquiry, structured inquiry, guided inquiry and open inquiry. At lower levels, teachers may pose the questions and guide how to solve the problem, while at higher levels there is more independent research, where students generate the questions and determine how to research them.

3.2.3 Importance of Inquiry-Based Learning

To be future-ready, students need to have the ability to inquire, which means not only knowing and understanding a variety of things but also knowing where to look, how to look, how to question, how to challenge, how to proceed independently and how to deal with the challenges that the world presents (Kwek, et al., 2019). These are aligned to what IBL aims to achieve.

IBL helps students develop a way of thinking that enables them to understand and address complex, multi-faceted problems (Kwek, et al., 2019) and develop valuable research skills. It nurtures students' independent thoughts in learning, while asking meaningful questions and using evidence to address complex problems.

IBL, as a pedagogy, enables students to experience the processes of knowledge creation (Smith, 2008). This is because the process of IBL mirrors how experts in various fields, like economists, try to understand and devise theories and principles to explain the world. This process of knowledge creation that involves framing hypotheses and prior knowledge, using evidence and data to test the hypotheses and prior knowledge, creating new hypotheses or understanding, and reflecting on and refining the ways of acquiring this knowledge are also skills of self-directed and lifelong learning that helps prepare students in a more authentic way to be self-directed and lifelong learners (Blessinger, et al., 2014, Smith, 2008, Bloemhof, 2014).

Based on the synthesis of several meta-analyses relating to achievements, IBL was found to produce transferable critical thinking skills as well as significant domain benefits, improved achievement, and improved attitude towards the subject (Hattie, 2009).

In a nutshell, IBL helps to achieve the learning outcomes that include critical thinking, the ability for independent inquiry, responsibility for own learning, and intellectual growth and maturity (Smith, 2008).

3.2.4 Inquiry-Based Learning and A-Level Economics

When used in the teaching and learning of A-Level Economics, IBL can be used for engaged learning and acquisition of Economics content knowledge (substantive knowledge); developing cognitive, social, citizenship and character competencies; developing metacognition and life-long learning skills; and developing Economics disciplinary knowledge or “thinking like an economist”. Table 5 provides an overview of the different uses of IBL in Economics.

Table 5: Different uses of IBL in Economics

For engaged learning and acquisition of content knowledge.	<ul style="list-style-type: none"> • To enable lessons to be more engaging. • To motivate students. • To enable more effective acquisition of content knowledge.
To develop cognitive and social competencies.	<ul style="list-style-type: none"> • To develop inquisitive, critical and creative thinking. • To develop collaborative and presentation skills.
To develop citizenship and character competencies.	<ul style="list-style-type: none"> • To develop students’ appreciation of real-world issues as part of Civic Literacy, Global Awareness and Cross-cultural Skills that together comprise the 21 CC. • To develop motivation, knowledge and skills to improve society and the world. • To develop values like empathy, responsibility and resilience.
To develop metacognition and life-long learning skills.	<ul style="list-style-type: none"> • To develop learning skills that enable life-long learning or “learning to learn”.
To develop Economics disciplinary knowledge.	<ul style="list-style-type: none"> • To inculcate the dispositions and skills of how economists function in the real world or “thinking like an economist”.

3.2.5 How IBL Looks Like in an Economics Classroom

IBL involves processes of identifying problems, asking good questions, collecting data (through careful observations, experiments, talking to people, reading from varied information sources, etc.), making meaning of that data, and developing sound reasons,

claims and arguments based on evidence drawn from data (Kwek, et al., 2019). The enactment of IBL can be done through different platforms, including class discussions, class debates, case study methods, problem-based learning, project-based learning and experiential learning.

IBL in A-Level Economics begins with a set of observations or data to interpret, or a complex real-world problem, and as the students study the data or problem, they will generate meaningful essential questions that enable them to better understand the reality or the complex real-world problem. Students will be motivated to seek for facts, procedures and guiding principles so they can methodically build evidence-based claims (i.e., explanations and arguments) to answer those essential questions. This also involves evaluating the strength of others’ arguments, reasons and evidence as well as own claims based on good reasons, sound reasoning and evidence.

A useful framework that can be utilised to guide the enactment of IBL for the A-Level Economics is shown in Figure 1. This framework serves as a guide for teachers in designing a comprehensive learning experience using IBL.

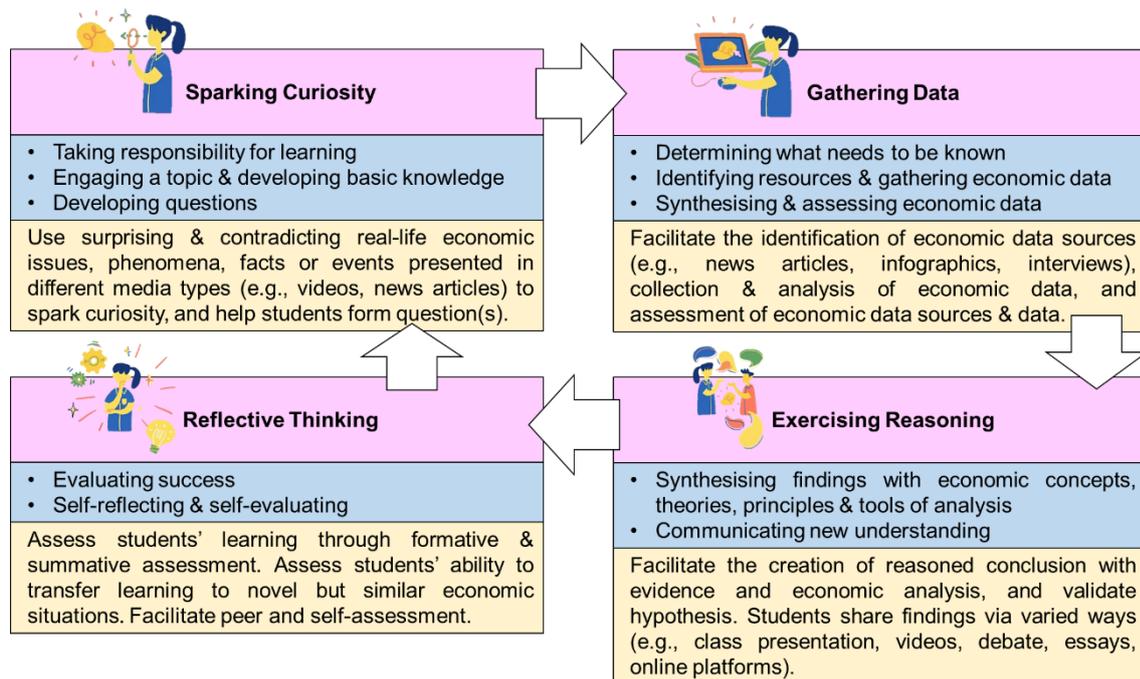


Figure 1: IBL framework in A-Level Economics

Legend:

- : Stages of the IBL process in A-Level Economics
- : Explanation of the stages
- : How to carry out the particular stages (may involve tech-enabled tools)

The above framework is adapted from Framework for Learning Through Enquiry ((Roberts, M., 2003), Model of the Inquiry Process (Justice et al., 2002) and Learning Experiences for Inquiry (Educational Technology Division, MOE). This framework is useful as a guide for teachers in designing a comprehensive learning experience using IBL.

In IBL, teachers are activators and facilitators of learning through inquiry to achieve intended student learning outcomes. Depending on the learning objectives and profile of the students, teachers can adjust and move along the continuum of inquiry for that lesson. The continuum of inquiry consists of structured inquiry, controlled inquiry, guided inquiry and free inquiry. At one end of the continuum (e.g., structured inquiry), teachers may provide the questions and give guidance on how to inquire about or solve the problem, while at the other end of the continuum (e.g., free inquiry) there will be more independent research, where students generate the questions and determine how to research them. Figure 2 and Table 6 provides details of the continuum of inquiry.

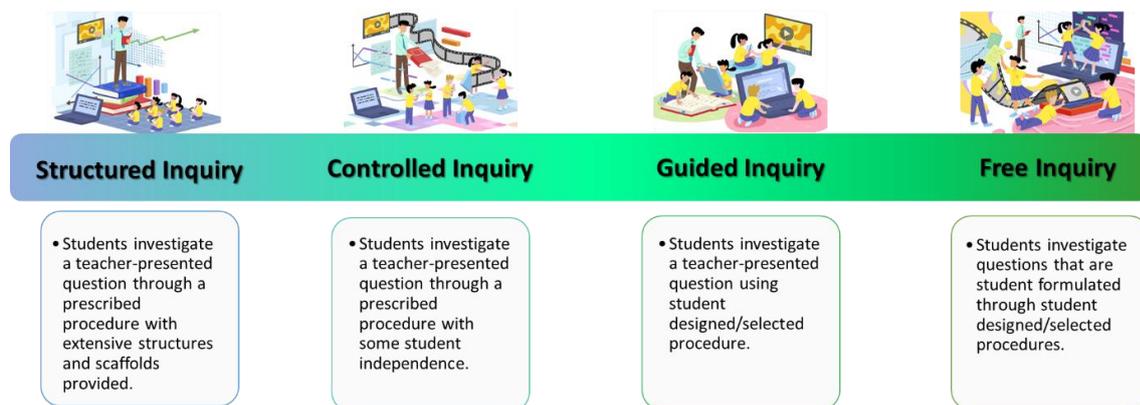


Figure 2: Continuum of inquiry

Table 6: Descriptions of the continuum of inquiry

	Structured Inquiry	Controlled Inquiry	Guided Inquiry	Free Inquiry
 <p><u>Sparking Curiosity</u> Topics and Questions</p>	Teacher identifies issue(s)/topic(s) and provides questions.	Teacher identifies issue(s)/topic(s) and provides several questions for students to select.	Teacher provides several issues/topics and questions for students to select.	Students identify issues/topics and construct own questions.
 <p><u>Gathering Data</u> Resources and Economic Data</p>	<p>Teacher provides resources and data that students will use.</p> <p>Teacher models the synthesis and assessment of the resources and data.</p>	<p>Teacher provides resources and data that students will use.</p> <p>Students synthesise and assess the resources and data with teacher’s guidance.</p>	<p>Teacher provides several resources and data for students to select and conduct research.</p> <p>Students synthesise and assess the resources and data with teacher’s guidance.</p>	<p>Students source for own resources and data to conduct research.</p> <p>Students synthesise and assess the resources and data independently.</p>

	Structured Inquiry	Controlled Inquiry	Guided Inquiry	Free Inquiry
 <p>Exercising Reasoning Synthesising Findings and Communicating New Understanding</p>	<p>Teacher takes lead in synthesising findings and chooses ways to communicate new understanding.</p>	<p>Students synthesise findings with teacher guidance.</p> <p>Teacher chooses ways to communicate new understanding.</p>	<p>Students synthesise findings with some teacher guidance.</p> <p>Teacher identifies several ways to communicate new understanding for students to select.</p>	<p>Students synthesise findings on their own and decide ways to communicate new understanding.</p>
 <p>Reflective Thinking Reflections and Assessments</p>	<p>Teacher provides the reflection questions, formative and summative assessments to demonstrate understanding.</p>	<p>Teacher controls the reflection questions, formative and summative assessments to demonstrate understanding.</p>	<p>Teacher provides several reflection questions, formative and summative assessments for students to select.</p>	<p>Students design own reflection questions, formative and summative assessments to demonstrate understanding.</p>

Table 7a shows the different tasks that teachers and students will carry out in each of the stages in the IBL framework in A-Level Economics for Structured Inquiry and Free Inquiry lessons.

Table 7a: Teacher and student tasks according to the IBL framework in A-Level Economics

	Tasks (Structured Inquiry)	Tasks (Free Inquiry)*
 <p>Sparking Curiosity</p> <ul style="list-style-type: none"> • Taking responsibility for learning • Engaging a topic and developing basic knowledge • Developing questions 	<p>Teacher introduces students to an issue or phenomenon through articles, videos, learning journey, etc., before a topic.</p> <p>Teacher provides essential questions and sub-questions.</p>	<p>Teacher introduces students to an issue or phenomenon through articles, videos, learning journey, etc., before a topic.</p> <p>Students come up with essential questions and sub-questions for inquiry of the issue or phenomenon in question.</p>
 <p>Gathering Data</p> <ul style="list-style-type: none"> • Determining what needs to be known • Identifying resources & gathering economic data • Synthesising & assessing economic data 	<p>Teacher introduces students to resources and data that is relevant to the inquiry of the issue or phenomenon in question before or during the lessons.</p> <p>Teacher models or guides students in synthesising and assessing the resources and data.</p>	<p>Students gather resources and data (through secondary and primary sources) that is relevant to the inquiry of the issue or phenomenon in question.</p> <p>Students synthesise and assess the resources and data.</p>
 <p>Exercising Reasoning</p> <ul style="list-style-type: none"> • Synthesising findings with 	<p>During lessons teacher introduces economic concepts, principles, theories, tools of analysis that are relevant to the inquiry of the</p>	<p>Students use relevant economic concepts, principles, theories, tools of analysis to inquire the issue or phenomenon in question independently and report (in</p>

	Tasks (Structured Inquiry)	Tasks (Free Inquiry)*
<p>economic concepts, theories, principles and tools of analysis</p> <ul style="list-style-type: none"> Communicating new understanding 	<p>issue or phenomenon in question to students.</p> <p>Teacher facilitates the application of the economic concepts, principles, theories and tools of analysis to the inquiry of the issue or phenomenon in question.</p> <p>Students tasked to report (in written and/or verbal forms) on the inquiry of the issue or phenomenon in question.</p>	<p>written and/or verbal forms) on the inquiry.</p>
 <p>Reflective Thinking</p> <ul style="list-style-type: none"> Evaluating success Self-reflecting and self-evaluating 	<p>Teacher provides reflection questions and/or formative assessments to allow for reflection of learning.</p>	<p>Students reflect on the learning and the learning process.</p> <p>Teacher can provide reflection questions and/or formative assessments to allow for reflection of learning.</p>

3.3 Blended Learning (BL) in Economics

Blended learning (BL) refers to Singapore’s model of integrating home-based learning (HBL) as a regular feature of students’ schooling experience. Instead of the commonly understood definition of BL that involves a combination of online and offline learning in a mix of different learning environments, MOE’s concept of BL is broader and is targeted at providing students with a range of learning experiences that blends the following:

- within-curriculum / out-of-curriculum learning
- synchronous / asynchronous learning
- structured / unstructured learning

- distance / in-person learning
- ICT-mediated learning / non-ICT-mediated learning

Through the provision of these varied learning experiences, we hope to nurture self-directed independent learners who are passionate and intrinsically motivated.

The learning experience of the students in A-Level Economics will be enhanced by complementing lectures and tutorials with more varied and multi-modal learning experiences. Multi-modal and experiential pedagogies will be used for the teaching and learning of appropriate topics. Students can also use different opportunities, like class presentations and discussions, personal reflections, and online quizzes to consolidate and assess their learning. A more varied, multi-modal and experiential learning will enhance the learning of Economics by increasing the engagement and motivation of students. It will also help to concretise the learning of Economics and provide a more authentic learning experience for students as the A-Level Economics is also focused on real-world phenomena and issues.

HBL days will provide teachers with opportunities to innovate and create novel learning experiences for students such as through setting of inquiry-based tasks to allow students to explore the different prices and marketing strategies employed by firms as part of their study of Theme 2.2.

SECTION 4: ASSESSMENT

- 4.1 Assessment and the Singapore Curriculum Philosophy
- 4.2 Learner-Centred and Balanced Assessment

4. ASSESSMENT

4.1 Assessment and the Singapore Curriculum Philosophy

Assessment is an integral part of the learning process, and must be closely aligned with curricular objectives, content and pedagogy. Both school-based assessment and national examinations play important and different roles in our education system. A balanced assessment system should have both assessment of learning (AoL) as well as assessment for learning (AfL). Whether implemented as national examinations or in the classroom, assessment should lead to meaningful learning. The “what” and “how” of assessment should be anchored on the clarity of purpose (“why”). There should be regular gathering of quantitative and qualitative information about a learner’s progress and development, and such information should be used to inform learning and shape future teaching and learning practices.

4.1.1 Three key messages of MOE’s Assessment Philosophy:

- **Assessment is integral to the learning process.** Assessment is an iterative and continuous process which motivates learning and helps learners achieve the learning outcomes stated in our curricular documents. The gathering and use of assessment information must become part of the ongoing learning process.
- **Assessment begins with clarity of purpose.** Assessment should be fit for purpose and based on sound educational principles. Decisions on “what” to assess and “how” to assess should be aligned with a clear purpose. Formative assessment should be carried out during the instructional process for the purpose of improving teaching and learning, while summative assessment serves to provide information on students’ mastery of content knowledge and skills.
- **Assessment provides feedback to address learning gaps and improve teaching practices.** Assessment in schools should produce both quantitative and qualitative descriptions of learner performance to provide feedback for improving future teaching, learning and performance. Assessment should also help students become self-directed learners. There is also the need to use different modes of assessment so we can determine how best to support students in their progress with respect to different domains of learning.

4.2 Learner-Centred and Balanced Assessment

Our assessment vision is that of 'Learner-Centred and Balanced Assessment' where a balanced assessment system comprises both AfL and AoL.

Assessment practices lie on a continuum where formative assessment supports learning and motivation, and creates a learning path to support and enhance learning – to learn deeply and learn for life.

Harlen (2012) suggested that the relationship between formative and summative assessment might be better presented in a continuum rather than as two discrete categories. At one end, AoL takes on a 'purely' summative purpose, with teachers using the assessment information for reporting and accountability; at the other end, AfL uses assessment results solely for improving student learning. Along the continuum, teachers and students work collaboratively towards more formative- or summative-oriented assessment purposes.

4.2.1 AfL

Teachers' approach to assessment would inevitably influence students' perception of what they need to learn and how learning should take place, especially in light of the knowledge and skills that are emphasised by the mode of assessment adopted by teachers. Throughout the learning process, teachers play an important role in guiding students to adopt the right mindset towards learning and in part, towards assessment. For example, teachers could ensure that they build in checks for student understanding in their instructional plans and provide formative feedback regularly to their students. Hattie and Timperley (2007) highlighted the power of feedback as one of the top five most effective instructional methods that teachers can employ. For the power of feedback to be harnessed, however, thought must be given on how to give and receive feedback.

- **Feedback from students to teachers** is useful to teachers as it presents evidence of students' achievements as well as difficulties. With knowledge of students' understanding of the lessons, teachers would be able to design strategies and provide feedback to guide students in reaching the learning outcomes.
- **Feedback from teachers to students** is useful to guide students in reflecting on their learning. In doing so, students would be able to make use of their teachers' feedback to close the gap between their current standards and the desired learning goals.
- **Feedback from students to their peers** is useful to students under different circumstances. When set to work collaboratively, students who provide feedback to their peers benefit from consolidating their own learning, applying their knowledge

to correct misconceptions and gaining additional insights gleaned from their peers' work. At the same time, students who receive feedback benefit when they make use of constructive feedback to improve their understanding so they are better able to attain the key learning outcomes.

4.2.2 AfL in A-Level H2 Economics

As expounded in the A-Level H2 Economics teaching and learning syllabus, emphasis is placed on the development of higher-order thinking skills in students, such as application, critical thinking, evaluation and data handling skills, rather than on the development of students' ability to memorise and regurgitate factual and procedural knowledge. In this regard, the incorporation of AfL considerations in curriculum design lends itself well to improving student learning, given that assessment outcomes are positioned as a means to improve student learning rather than as an end in itself (Volante & Jaafar, 2010).

AfL is used to measure student learning at different junctures of the learning process, in order to provide valuable information that helps guide students in achieving the key learner outcomes. For instance, teachers could use the information obtained to inform subsequent instructional decisions so that student learning can be improved, enriched and made more meaningful (Tan, 2011).

Formative assessment usually takes place during the instructional process – whether in the form of in-class questioning, group work, project work, quizzes, written assignments, or more formally as tests. Effective formative assessment hinges on the provision of timely, relevant and specific qualitative feedback from teachers or peers, so that students will be able to self-monitor, self-regulate and make improvements to their own learning. Technology allows students' thinking to be made visible, where their learning progress can be easily tracked and analysed. Visualisation of learning data helps the teacher to check students' understanding and give appropriate feedback.

AfL tasks often involve calling upon students to construct their own meaning or knowledge (Black & William, 2005), while at the same time engaging students in higher-order thinking and authentic problem-solving rather than to focus on the routine use of facts and procedures. More importantly, AfL allows teachers and students to move away from a myopic focus on mastering what can be measured on standardised tests to consider other educationally-important but untested knowledge and skills (Horn, 2003), such as the 21CC. With the regular use of assessment for learning approaches to complement AoL (which will be elaborated in the next section), the teaching and learning of A-Level H2 Economics will be

well-placed to achieve the key learner outcomes that are outlined in the teaching and learning syllabus.

4.2.3 AoL

AoL, or summative assessment, uses assessment information solely for reporting and accountability. Summative assessments are usually carried out at the end of an instructional unit or course of study for the purpose of providing information about students' mastery of content, knowledge and skills, assigning grades or certifying students' proficiency.

4.2.4 The A-Level Examinations for H2 Economics

Students sit for the A-Level H2 Economics examination by the end of Junior College 2 or Pre-University 3. The assessment objectives and scheme of assessment are expounded in the following sections.

4.2.5 Assessment Objectives

Candidates are expected to:

AO1: Knowledge and Understanding

- Demonstrate knowledge and understanding of economic concepts, theories and principles

AO2: Interpretation and Evaluation of Information

- Interpret economic information presented in textual, numerical or graphical form
- Make valid inferences based on the information presented and its limitations

AO3: Application and Analysis

- Apply relevant economic concepts, theories and principles to analyse contemporary issues, perspectives and policy choices
- Construct coherent economic arguments

AO4: Evaluation

- Evaluate critically contemporary issues, perspectives and policy choices
- Recognise unstated assumptions and evaluate their relevance
- Synthesise economic arguments to arrive at well-reasoned judgements and decisions

4.2.6 Scheme of Assessment

The assessment comprises two compulsory written examination papers: Paper 1 (Case Studies) and Paper 2 (Essays). Taken as a whole, both papers will incorporate a good balance of questions on microeconomics and macroeconomics.

Table 8: Specification grid

H2 Economics	Description	Overall Marks (Weighting)	Duration
Paper 1 Case Studies	<p>There will be two compulsory case studies.</p> <p>Candidates are required to answer all questions for each case study.</p> <p>Each case study carries 30 marks and constitutes 20% of the total marks. About 12 marks of each set of case study questions will be for data response questions, and about 18 marks will be for higher-order questions.</p>	60 marks (40%)	2 hours 30 minutes
	<ul style="list-style-type: none"> For Paper 1, questions testing AO1 + AO2 + AO3 will comprise about 40% of the marks and questions testing AO1 + AO2 + AO3 + AO4 will comprise about 60% of the marks. 		
Paper 2 Essays	<p>There will be six essay questions.</p> <p>Candidates are required to answer a total of three essay questions, of which one must be from Section A, one from Section B and one from either Section A or B.</p> <p><u>Section A:</u></p> <p>Three essay questions focusing mainly on microeconomics will be set. Candidates must answer at least one question from this section.</p> <p>Each question carries 25 marks.</p>	75 marks (60%)	2 hours 30 minutes

	<p><u>Section B:</u></p> <p>Three essay questions focusing mainly on macroeconomics will be set. Candidates must answer at least one question from this section.</p> <p>Each question carries 25 marks.</p>		
<ul style="list-style-type: none"> ▪ For Paper 2, questions testing AO1 + AO3 will comprise about 40% of the marks and questions testing AO1 + AO2 + AO3 + AO4 will comprise about 60% of the marks. 			

DESCRIPTION OF COMPONENTS

Paper 1 (Case Studies)

The paper will include two case studies. Each of these will consist of two to three pages of data presented in textual, numerical or graphical form. Each case study will present contemporary multifaceted economic issues or policies, which may be from one or more themes in the syllabus.

The data for each case study will be followed by six or seven part-questions, including sub-parts. These questions will require candidates to apply relevant economic concepts, theories and principles in analysing, synthesising and evaluating economic issues, perspectives or policies, with reference to the data provided.

About 12 marks of each set of case study questions will be for data response questions, and about 18 marks will be for higher-order questions.

Paper 2 (Essays)

Questions in Section A will focus mainly on microeconomics and questions in Section B will focus mainly on macroeconomics. Each essay question will comprise two parts, with part (a) carrying 10 marks and part (b) carrying 15 marks. Questions may be based on real-world contexts.

Candidates are expected to apply relevant economic concepts, theories and principles to analyse issues and to evaluate perspectives or policies. They should synthesise and construct coherent arguments to arrive at well-reasoned judgements and decisions.

SECTION 5: READING LIST

5. READING LIST

A list of reading materials has been identified to guide teachers in preparing resources for the implementation of the A-Level H2 Economics teaching and learning syllabus in 2022. These reading materials are listed in **Table 9**, **Table 10** and **Table 11** for Themes 1–3 respectively. Readings on the Singapore economy and general readings have also been identified and are listed in **Table 12** and **Table 13** respectively.

Table 9: Readings for theme 1 – the Central Economic Problem

Author(s)	Title	Publisher	Year
Mullainathan, Sendhil & Shafir, Eldar	Scarcity: Why Having Too Little Means So Much	Times Books	2013
Roberts, Russell	The Price of Everything: A Parable of Possibility and Prosperity	Princeton University Press	2009

Table 10: Readings for theme 2 – Markets

Author(s)	Title	Publisher	Year
Ekelund, Robert B.; Ressler, W. Rand & Tollison, Robert D.	Economics: Private Markets and Public Choice (7th Edition)	Pearson	2005
Krugman, Paul & Wells, Robin	Microeconomics (5th Edition)	Worth Publishers	2017
Lipczynski, John; Wilson, John O. S. & Goddard, John	Industrial Organization Competition, Strategy, Policy (5th Edition)	Pearson Education	2017
Mankiw, Gregory N.	Principles of Microeconomics (9th Edition)	Cengage Learning	2020
McConnell, Campbell R.; Brue, Stanley L. & Flynn, Sean M.	Microeconomics: Principles, Problems and Policies (20th Edition)	McGraw-Hill/Irwin	2014

McEachern, William A.	Microeconomics: A Contemporary Introduction (11th Edition)	Cengage Learning	2016
Pindyck, Robert & Rubinfeld, Daniel	Microeconomics (9th Edition)	Pearson	2018
Varian, Hal R.	Intermediate Microeconomics: A Modern Approach (9th Edition)	W N Norton	2014

Table 11: Readings for theme 3 – the National and International Economy

Author(s)	Title	Publisher	Year
Blanchard, Oliver	Macroeconomics (7th Edition)	Pearson	2017
Husted, Steven & Melvin, Michael	International Economics (9th Edition)	Pearson	2012
Krugman, Paul	The Return of Depression Economics and the Crisis of 2008	W N Norton	2009
Mankiw, Gregory N.	Principles of Macroeconomics (9th Edition)	Cengage Learning	2020
McEachern, William A.	Macroeconomics: A Contemporary Introduction (11th Edition)	Cengage Learning	2016
Pugel, Thomas A.	International Economics (15th Edition)	McGraw-Hill/Irwin	2011
Samuelson, Paul A. & Nordhaus, William D.	Macroeconomics (19th Edition)	McGraw-Hill/Irwin	2009

Table 12: Readings on the Singapore economy

Author(s)	Title	Publisher	Year
Choy, Keen Meng	Studies on the Singapore Economy	World Scientific	2012
Ghesquiere, Henri	Singapore's Success Engineering Economic Growth	Thomson	2006
Tan, Say Tin; Leong, Foong Lin; Chan, Basil A. L.; Tan, Chien Ming & Tan, Dai Hwee	Economics in Public Policies – The Singapore Story	Marshall Cavendish Education	2009

Table 13: General readings

Author(s)	Title	Publisher	Year
Bamford, Colin & Grant, Susan	Cambridge International AS and A Level Economics (3rd Edition)	Cambridge University Press	2014
Begg, David; et al.	Economics (11th Edition)	McGraw Hill	2014
Case, Karl E., Fair, Ray C. & Oster, Sharon M.	Principles of Economics (12th Edition)	Pearson Education	2017
Frank, Robert H.; et al.	Principles of Economics (7th Edition)	McGraw Hill	2019
Heyne, Paul L.; Boettke, Peter J. & Prychitko, David L.	The Economic Way of Thinking (13th Edition)	Pearson Education	2014
Lipsey, Richard G. & Chrystal, Alec K.	Economics (13th Edition)	Oxford University Press	2015

Low, Donald	Behavioural Economics and Policy Design: Examples from Singapore	World Scientific	2011
Mankiw, Gregory N.	Principles of Economics (8th Edition)	Cengage Learning	2018
Mankiw, Gregory N.; Quah, Euston & Wilson, Peter	Principles of Economics: An Asian Edition (2nd Edition)	Cengage Learning	2013
McConnell, Campbell R.; Brue, Stanley L. & Flynn, Sean M.	Microeconomics: Principles, Problems & Policies (21st Edition)	McGraw Hill	2018
McEachern, William A.	Microeconomics: A Contemporary Introduction (11th Edition)	Cengage Learning	2017
McEachern, William A.	Macroeconomics: A Contemporary Introduction (11th Edition)	Cengage Learning	2017
Miller, Roger L.	Economics Today (19th Edition)	Pearson Education	2017
O'Sullivan, Arthur; Sheffrin, Steven & Perez, Stephen	Economics: Principles, Applications and Tools (9th Edition)	Pearson Education	2017
Parkin, Michael	Economics (12th Edition)	Pearson Education	2015
Sexton, Robert L.	Exploring Economics (7th Edition)	Cengage Learning	2016
Sloman, John; Garratt, Dean & Guest, Jon	Economics (10th Edition)	Pearson Education	2018
Sloman, John & Garratt, Dean	Essentials of Economics (8th Edition)	Pearson Education	2018

Thaler, Richard H. & Sunstein, Cass R.	Nudge: Improving Decisions About Health, Wealth and Happiness	Penguin Books	2009
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SECTION 6: REFERENCES

6. REFERENCES

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