

DIPLOMA IN BUSINESS PROCESS & SYSTEMS ENGINEERING (T43)

Course Overview

Get the best of both worlds as you harness the power behind key engineering and business concepts. The multi-disciplinary skill-sets that you acquire from this course will enable you to stand out from the crowd as you meet today's demand for innovative and robust solutions to business and engineering challenges.

A well-balanced, broad-based, future-ready curriculum with a strong focus on business analytics and systems engineering will give you the required skills to effectively utilise data, statistics and systems thinking concepts to optimise both business processes and planning.

With Singapore positioning itself as an economic powerhouse with a diversified economy that leverages on smart technology, the ideal blend of business and engineering in this course will give you exciting employment opportunities in a wide array of industries ranging from manufacturing, engineering and business, to logistics & supply chain, retail, and customer services.

To download a copy of our 4-page course brochure, click [here](#).

[Watch video](#)

Entry Requirements

To be eligible for consideration for admission, applicants must obtain 26 points or better for the net ELR2B2 aggregate score (i.e. English Language, 2 relevant subjects and best 2 other subjects, including CCA Bonus Points) and meet the minimum entry requirements of this course. CCA cannot be used to meet the minimum entry requirements.

Subject	Grade
English Language (EL1)*	1-7
Mathematics (E or A)	1-6
Any one of the listed subjects^	1-6

Any two other subjects, excluding CCA

2021 Planned Intake	100
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Net ELR2B2 aggregate range (2021 JAE)	12 - 17
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Note: Applicants should not be suffering from severe vision impairment.

* SPM / UEC holders must have a minimum of grade 6 for the Bahasa Inggeris (English Language) subject.

^ List of acceptable subjects: Biology, Biotechnology, Chemistry, Combined Science, Computing/Computer Studies, Design & Technology, Electronics/Fundamentals of Electronics, Physics/Engineering Science, Science (Chemistry, Biology), Science (Physics, Biology), Science (Physics, Chemistry)/Physical Science.

See also the minimum entry requirements for:





- [ITE Certificate Holders](#)
- [International Students](#)

What You'll Learn

YEAR 1

You will receive a firm foundation in fundamental business concepts through lab work, study trips to companies and group-based learning opportunities. These will equip you with critical thinking skills, along with knowledge of fundamental engineering processes and systems.

TP Fundamentals (TPFun) Subjects

Subject Code	Subject	Credit Units
 ECS1005	Communication & Information Literacy In this subject, you will learn how to conduct research for relevant information and validate information sources. You will also learn to recognise and avoid plagiarism, and follow standard citation and referencing guidelines when presenting information. In the course of learning, you will be required to plan, prepare and present information appropriately in written and oral form. You will also be taught to consider the Message , Audience , Purpose and Strategy (MAPS) when writing and delivering oral presentations.	2 
 ECS1007	Persuasive Communication In this subject, you will be taught how to use persuasive language in written documents. You will be required to use information to your advantage to verbally communicate and convince an audience about your idea, product or service. Skills such as persuasive vocabulary, language features, graphical illustrations, tone and style would also be covered. The Message , Audience , Purpose and Strategy (MAPS) will also be applied when engaging in verbal and written communication.	2 

^	EGS1002	Global Studies	3	^
<p>This subject provides essential skills and knowledge to prepare you for an overseas experience. You will examine the elements of culture and learn the key principles of cross-cultural communication. In addition, you will gain an appreciation and awareness of the political, economic, technological and social landscape to function effectively in a global environment.</p>				
^	EIN1001	Innovation & Entrepreneurship	2	^
<p>The Innovation & Entrepreneurship subject is designed for learners from all disciplines to embrace innovation in either their specialised fields or beyond. You will first learn the Design Thinking framework, where you will develop problem statements and ideate solutions. Next, you will discover the tools for prototyping and innovation, such as 3D printing and laser cutting, at TP's Makerspace+ facility. Finally, you will acquire commercial awareness through the LEAN Startup framework of idea crystallisation, prototype building, customer testing and validation, refinement of business model canvas, and crowdfunding or crowdsourcing avenues.</p>				
^	GCC1001	Current Issues & Critical Thinking	2	^
<p>This subject presents you with a panoramic view of current local and global issues, which may have long term implications for Singapore. You will learn to apply critical thinking tools to examine current issues, support your views with relevant research and up-to-date data, articulate an informed opinion and mature as civic-minded individuals.</p>				
^	LEA1011	Leadership: Essential Attributes & Practice 1	1	^
<p>LEAP 1, 2 and 3 are three fundamental subjects that seek to cultivate in you, the attitude, skills and knowledge for the development of your leadership competencies. This character-based leadership programme enables you to develop your life-skills through establishing personal core values, which will become the foundation for your leadership credibility and influence.</p>				
^	LSW1002	Sports & Wellness	2	^
<p>This subject will help you develop both the physical and technical skills in your chosen sports or fitness activities. Through a structured curriculum that facilitates group participation, practice sessions and mini competitions, you will learn to build lifelong skills such as resilience, leadership, communication and teamwork. Physical activity sessions will be supplemented by health-related topics to provide you with a holistic approach to healthy living.</p>				
^	MCR1001	Career Readiness 1	1	^
<p>This Career Readiness programme comprises three core subjects - Personal Management, Career Preparation and Career Management. It seeks to help you understand your career interests, values, personality and skills for career success. It also equips you with the necessary skills for seeking and securing jobs, and to develop professional work ethics.</p>				

^	TGL1001	<p>Guided Learning</p> <p>The subject introduces students to the concepts and process of self-directed learning in a chosen area of inquiry. The process focusses on four stages: planning, performing, monitoring and reflecting. Students get to plan their individual learning project, refine and execute the learning plan, as well as monitor and reflect on their learning progress and project. The learning will be captured and showcased through a curated portfolio. The self-directed learning project will broaden and/or deepen a student's knowledge and skills.</p>	3	^
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Core Subjects

Subject Code	Subject	Credit Units	
^	<p>EBZ1004</p> <p>Business Fundamentals</p> <p>This subject provides you with an overall view pertaining to the four pillars of business: Management, Marketing, Money and Manpower. Introductory topics correlating to the four pillars of operation - Management Fundamentals, Marketing Principles, Financial Statements and Organisation Behaviour, will be taught.</p>	4	^
^	<p>EEE1001</p> <p>Circuit Analysis</p> <p>This subject provides a good foundation in DC and AC network analysis. You will learn the basic principles of electric circuitry and how to apply circuit theorems to analyse DC and AC networks.</p>	6	^
^	<p>ESE1006</p> <p>Computer Programming for Problem Solving</p> <p>This subject covers the process of decomposing a problem into a sequence of smaller abstractions. The abstractions are implemented in software in a structured top-down approach. Software implementation includes the process of designing, writing, testing, and debugging program code.</p>	4	^
^	<p>EEE1003</p> <p>Digital Fundamentals 1</p> <p>This subject provides basic knowledge of digital electronics and circuits. Topics include number systems, operations and codes, logic gates, Boolean algebra and logic simplification, combinational logic, functional blocks, latches and flip-flops.</p>	5	^
^	<p>EMA1003</p> <p>Engineering Mathematics 1</p> <p>This subject teaches pre-calculus techniques required for an engineering course. It trains you in engineering problem-solving approaches using the appropriate mathematical tools. Topics such as simultaneous equations, matrices, trigonometric, exponential and logarithmic functions, complex numbers and vectors will be covered.</p>	4	^

^	EPZ1001	Introduction to Processes & Systems	4	^
		This subject provides you with a basic understanding of the concepts, tools and approaches to business process management as well as the context in which these approaches are made within larger systems of business organisations or entities.		
^	ESZ1002	Quantitative Methods	4	^
		This subject introduces basic statistical concepts. Topics include descriptive statistics, probability distributions, estimation of population parameter, hypothesis testing, and simple linear regression.		

YEAR 2

You will gain a deeper understanding of process management, improvement, optimisation and innovation. These, when applied with data analysing techniques, facilitate sound decision-making by companies. You will also learn about simulation for manufacturing and logistical systems.

TP Fundamentals (TPFun) Subjects

	Subject Code	Subject	Credit Units	
^	ECS1006	Workplace Communication	2	^
		In this subject, you will be taught how to conduct effective meetings while applying team communication strategies and the skills for documenting meeting notes. You will be required to write clear emails, using the appropriate format, language, tone and style for an audience. You will also be taught to communicate appropriately in and for an organisation when using various platforms. In all aspects, the principles of applying M essage, A udience, P urpose and S trategy (MAPS) will be covered.		
^	EGS1003	Managing Diversity at Work*	3	^
		This subject explores the concepts of identity, diversity and inclusion at the workplace. It examines the relationship between identity and diversity, the benefits and challenges of diversity and the strategies that promote inclusion and inspire collaboration in a diverse workplace. Examples of the elements of diversity covered in this subject include nationality, generation, ethnicity and gender. A one week residential stay is mandatory for this subject.		
^	EGS1004	Global Citizenship & Community Development*	3	^
		Students will examine the meaning and responsibilities of being a Global Citizen, in order to contribute towards a more equitable and sustainable world.? In addition, students will learn how sustainable solutions can support community development, and, execute and critique a community action plan that addresses the needs of a specific community/cause.		

^	EGS1005	Expressions of Culture*	3	^
<p>This subject provides a platform for an understanding of culture and heritage through modes of expression. Students will be introduced to global and local cultures via everyday objects, places and human behaviour seen through time and space. Students will explore issues and challenges in culture and heritage sustainability in community, national and global contexts.</p>				
^	LEA1012	Leadership: Essential Attributes & Practice 2	1	^
<p>LEAP 1, 2 and 3 are three fundamental subjects that seek to cultivate in you, the attitude, skills and knowledge for the development of your leadership competencies. This character-based leadership programme enables you to develop your life-skills through establishing personal core values, which will become the foundation for your leadership credibility and influence.</p>				
^	MCR1002	Career Readiness 2	1	^
<p>This Career Readiness programme comprises three core subjects – Personal Management, Career Preparation and Career Management. It seeks to help you understand your career interests, values, personality and skills for career success. It also equips you with the necessary skills for seeking and securing jobs, and to develop professional work ethics.</p>				

* Students must choose to take either one of these three subjects or TGL1001 Guided Learning.

Core Subjects

	Subject Code	Subject	Credit Units	
^	ESE1008	Data Visualisation & Analytics	3	^
<p>This subject covers the data analytics lifecycle, including gathering, cleaning, processing and visualising of data. Exploratory data analysis methods, descriptive and predictive analytics, and the presentation of insights, will also be covered.</p>				
^	ESZ2001	Decision Analysis	4	^
<p>This subject provides an introduction to the decision making process and the models applicable to solve various decision problems. It will cover methods and techniques for decision making such as linear programming, transportation model, network models and decision trees.</p>				
^	EBZ2003	Engineering Economy	4	^
<p>This subject provides a basic understanding of the economic aspects of engineering applications, elements of costs and costing methods, and the relationship between cost behaviour and profit. You will be expected to analyse different investment alternatives for economic decision making. The subject also discusses using EVA (Economic Value Added) to measure business performance.</p>				

^	EMF3002	Manufacturing Logistics & Simulation	4	^
<p>This subject covers the concept of logistics in manufacturing, manufacturing planning, purchasing, warehousing, and simulation. PC software will be used to enhance your learning.</p>				
^	EQM2001	Process Management & Innovation	4	^
<p>Process Management is the management of business as a series of processes resulting in the creation/improvement of products and services that the customers need. This subject provides the understanding of concepts, theories and methods a team leader needs to initiate and carry out process improvement activities. Key topics include process management, analysis, improvement, and innovation.</p>				
^	ESZ2002	Process Optimisation & Improvement	4	^
<p>This subject provides an overview on the concepts of quality improvement and process optimisation. It establishes the fundamental to quality concepts. You will learn how to analyse statistical control results, experimental designs, variations in processes and applying improvement techniques. Practical sessions using software applications will be integrated to enhance your learning.</p>				
^	EBM2004	Project Management	4	^
<p>This subject aims to provide an overview of the principles and concepts in project management and equip you with the theoretical foundation and skills in using project management tools. It emphasises the knowledge and practices which are widely applied in project management. Topics covered include the project management framework, project management processes and project management knowledge areas.</p>				
^	ESZ1001	Systems Concepts & Tools	4	^
<p>This subject provides you with the basic knowledge and skills to apply systems thinking language and modelling approaches to solve real-world issues. Tools that will be introduced include causal loop diagrams, archetypes and system dynamics. You will also learn to use a software to model issues using the systems thinking and modelling approach. The relationship between systems thinking and the learning organisation will also be discussed.</p>				
^	ESZ3002	Systems Modelling & Simulation	4	^
<p>This subject provides an introduction to fundamental concepts of system modelling and simulation. Topics include basic model development, input analysis, modelling and statistical analysis. A simulation software will be extensively used as a vehicle to enhance your understanding and practical applications of the subject.</p>				

Through industrial internships and projects, you will have opportunities to learn in real working environments. You will be trained in customer relationship, service quality and supply chain management, and develop work-life skills such as initiative and adaptability.

TP Fundamentals (TPFun) Subjects

Subject Code	Subject	Credit Units
ESI3001	<p>Student Internship Programme</p> <p>This structured programme is designed to link your learning with the real work environment. You will be placed in organisation(s) with opportunities to apply the concepts and skills acquired in the course of your study. Besides reinforcing technical concepts and mastering of skills in areas that you have been trained, the practical training will enable you to build important skills such as problem-solving, communication, teamwork, and to cultivate good attitude and a strong work ethic.</p>	12
LEA1013	<p>Leadership: Essential Attributes & Practice 3</p> <p>LEAP 1, 2 and 3 are three fundamental subjects that seek to cultivate in you, the attitude, skills and knowledge for the development of your leadership competencies. This character-based leadership programme enables you to develop your life-skills through establishing personal core values, which will become the foundation for your leadership credibility and influence.</p>	1
MCR1003	<p>Career Readiness 3</p> <p>This Career Readiness programme comprises three core subjects – Personal Management, Career Preparation and Career Management. It seeks to help you understand your career interests, values, personality and skills for career success. It also equips you with the necessary skills for seeking and securing jobs, and to develop professional work ethics.</p>	1

Core Subjects

Subject Code	Subject	Credit Units
EMP3002	<p>Major Project</p> <p>In this subject, you will work in teams to integrate and apply your skills and knowledge to implement your projects in a practical work-and-learn environment. Besides research, design, analytics, project management, communication and problem solving skills, the emphasis will also be on innovation, teamwork and self-learning.</p>	8

^	ESZ3001	Supply Chain Management	4	^
		This subject covers the concept behind supply chain management in competitive business survival and key strategic drivers that improve supply chain management performance of an enterprise. It also covers the importance of managing inventory, selecting appropriate distributing and transportation network.		

Elective Subjects

	Subject Code	Subject	Credit Units	
^	BLO2010	Distribution Centre Management	4	^
		This subject provides an overview of the role of a Distribution Centre (DC) in the supply chain. It also covers the various activities performed within a DC and the significance of these activities on customer service and total logistics costs. It focuses on the major resources to be applied in a DC and explains how they interact with one another in contributing to the DC's effectiveness and efficiency. It will also cover the significance of providing DC services to the Third-Party Logistics industry.		
^	CCF2C02	IOT Security	4	^
		This subject covers the knowledge and skills required to analyse and troubleshoot IoT vulnerabilities and threats. You will use latest technologies to perform risk assessments and recommend mitigation strategies for common security issues in IoT systems.		
^	EBZ2006	Service Quality & Management	4	^
		This subject introduces the key concepts and principles of Service Quality and Management. Topics covered include concepts of quality services, essential skills in customer services, principles and strategy of service management, methods for service quality measurements and service recovery.		

GRADUATION REQUIREMENTS

Cumulative Grade Point Average	min 1.0
TP Fundamentals	36 credit units
Diploma Core Subjects	82 credit units
Diploma Elective Subjects	4 credit units
Total Credit Units Completed	min 122 credit units