

DIPLOMA IN INTERNATIONAL SUPPLY CHAIN MANAGEMENT (ISCM) (3-YEAR COURSE)

SCHOOL OF ENGINEERING
LOGISTICS CLUSTER



With the rapid economic development of many nations, comes an unprecedented increase in international trade. As such, facilitators in international trade are highly sought after. The **Diploma in International Supply Chain Management (ISCM)** prepares students to become professionals who are responsible for the safe and timely delivery of millions of dollars worth of goods, over thousands of miles.

Graduates will be well-equipped with management skills in international trade operations, international logistics and supply chain management.

Students can look forward to working with experienced professional staff in a vibrant learning environment. These staff provide valuable insights into international best practices. They also reinforce professional values and provide a credo of ethical and fair dealing, which is the bedrock of efficient supply chain operations.

The course hones students' professionalism and skills in supply chain management. The broad-based and hands-on learning experience enhances the student's employability in the burgeoning international supply chain management industry. The course also offers a wide range of elective modules. The aim of these modules is to provide every student with the opportunity to broaden his or her knowledge and deepen skills in specific areas.

ENTRY REQUIREMENTS

To be eligible for consideration, candidates must have the following GCE 'O' Level examination (or equivalent) results and fulfill the aggregate computation requirements:

Subject	'O' Level Grade
English Language	1-6
Mathematics (Elementary/Additional)	1-6
Any two other subjects	1-6

The aggregate computation for selection is based on grades obtained for English, Mathematics, Science (Grade 1-9) or Design & Technology (Grade 1-9) or Computer Studies (Grade 1-9) and two other subjects.

CAREER PROSPECTS

ISCM graduates can hold managerial and executive positions in areas such as purchasing management, supply chain management, shipping documentation, freight forwarding (air, sea or land), dangerous goods, import/export/tradenet, transportation management (planning/scheduling) and risk/crisis management.

ACCREDITATION FOR FURTHER STUDIES

The Diploma in International Supply Chain Management is an internationally recognised tertiary qualification. Graduates should be able to gain direct admission into local universities and selected overseas universities such as Curtin University of Technology and University of Tasmania (Australian Maritime College). Specific credit exemptions are currently being finalised.

COURSE CURRICULUM

Module Name	Credit Units
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YEAR 1**Level 1.1 (25 hours per week)**

Applied Statistics	4
Business Computing Applications	4
Introduction to SCM & Logistics	4
Introduction to Freight Forwarding	5
Electronic Commerce	4
Creativity & Applied Thinking Skills [^]	2
Sports & Wellness [^]	2

Level 1.2 (25 hours per week)

Service Operations Management	4
Dangerous Goods & Cargo Handling	4
Mathematics	5
Distribution Management	4
Supply Chain Management	4
Communication Toolkit [^]	4

YEAR 2**Level 2.1 (24 hours per week)**

Global Purchasing & Supply	5
Project & Event Logistics	4
Multimodal Transportation	5
Maritime Management	6
Interdisciplinary Studies (IS) module [^]	2
Interdisciplinary Studies (IS) module [^]	2

Level 2.2 (23 hours per week)

Risk Management	4
Cold Chain	5
Project Management	5
Aviation Management	5
Innovation & Enterprise in Action [^]	4

YEAR 3**Level 3.1 (22 hours per week)**

Ports & Terminals Management	4
Legal Issues in Freight & Trade	4
Optimisation & Simulation	5
Customs Brokerage Management	5
World Issues: A Singapore Perspective [^]	2
Interdisciplinary Studies (IS) module [^]	2

Level 3.2 (25 hours per week)

(Student to do one)	
Six-month Internship	25
In-House Project	25

Across-Level Modules (Level 1.2 onwards)**(6 hours per week)**

School of Engineering (SoE) elective module*	3
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Notes:

[^] For more details on Interdisciplinary Studies (IS) modules, please log on to www.np.edu.sg/is/.

* For more details on School of Engineering elective modules, please refer to page 165.

IS Modules

The School of Interdisciplinary Studies (IS) delivers the interdisciplinary curriculum, which nurtures a new generation of professionals with multidisciplinary skills and an innovative and entrepreneurial spirit to meet the challenges of a knowledge-based economy. IS module challenge boundaries and offer insights into Communication, Entrepreneurship, Life Skills, Media & the Arts, and Science & Technology.

School of Engineering (SoE) Elective Modules

The SoE elective modules fall under a wide range of clusters under both Engineering and Non-Engineering categories. The aim is to provide students with the opportunity to broaden their knowledge and deepen their discipline-specific areas. Each cluster comprises a minimum of three 3-hour modules. Students are required to take two modules in order to satisfy the minimum graduating requirement.

COURSE MODULES

LEVEL 1.1**Applied Statistics**

Students are introduced to basic statistical knowledge and techniques to solve problems. They will gain an overview of descriptive and inferential statistics, focusing on tools and models for decision-making. Students are also taught to analyse data and interpret the results using a software package.

Business Computing Applications

Students will develop the conceptual understanding and skill development necessary when applying computing to business. Topics include the use of spreadsheets in business, database concepts and methods, computer graphics and presentations, and SQL (the standard language for data manipulation). Students reinforce their understanding through extensive computer practical sessions. In addition, project assignments will further enhance their skills and knowledge in using computers for typical business applications.

Introduction to SCM & Logistics

Students learn the impact of supply chain management on the firm in purchasing, operations, logistics and the integration among supply chain participants. Topics include an overview of supply chain management, operations issues in supply chain management, principles and theory of logistics, and future trends. Company visits form part of the practical sessions.

Introduction to Freight Forwarding

Students are equipped with the knowledge of air and sea freight forwarding from a management perspective. Topics covered include industry regulators and association, aircrafts, air cargo import and

export, transshipment procedures, rates and charges, carriers and port clearance procedures, types of ships, international convention and regimes, location of major seaports, and operation flows.

Electronic Commerce

Freight movement, particularly international freight movement, involves a complex set of parallel processes related to the exchange of information between multiple entities (governmental and commercial) and the transfer of goods within and between modes of transportation. This module provides an overview of all aspects of information exchange and opportunity on the Internet. Students also learn the Global Trade Item Number (GTIN), which is a key component of e-commerce transactions. Other topics include marketing products on the Internet, systems integration, virtual organisations, electronic payment systems, privacy and security, intellectual property, customs and excise, and emerging issues in telecommunications.

LEVEL 1.2

Service Operations Management

Students are introduced to concepts and techniques related to all aspects of the management and operation of services. The module develops students' skills in both strategic and operational issues pertaining to services. Topics cover both qualitative and quantitative aspects of service management, balanced scorecard and Six Sigma, so as to give students the wide-ranging techniques for ensuring quality and evaluating long-term strategy planning. Students will be able to apply this knowledge for service innovations. Learner-centred strategy, self-test quizzes, video clips, Service Model Software, and the Mortgage Service Game enhance learning.

Dangerous Goods & Cargo Handling

The module inculcates a general but thorough understanding of the nature of dangerous goods, and how they are classified and identified under the United Nations system. It also covers how the packaging is chosen for the particular material using UN specification packaging in almost every case, and how the packages are marked and labelled. The module also provides students with a thorough knowledge and skills in monitoring loading, stowage, securing and unloading of cargo and their care during the voyage and carriage of dangerous goods.

Mathematics

Students will develop a basic knowledge of mathematics relevant to engineering applications. Topics covered include algebra, trigonometry, geometry, differentiation and integration. Emphasis is placed on practical applications of these topics.

Distribution Management

This module provides students with an understanding of the various aspects of distribution, and transportation of goods and services. Topics covered include the functions of physical distribution management, transportation management and costing, traffic management, containerisation systems, vehicle routing and scheduling, and customer services in distribution and transportation.

Supply Chain Management

Students are introduced to the critical concerns involved in the design, control, operation and management of supply chain systems. Various

models and tools developed for supply chain management will also be covered. Students are taught simple techniques that can be used to analyse various aspects of the supply chain.

LEVEL 2.1

Global Purchasing & Supply

This module introduces the topic of purchasing and supply management including purchasing principles, supplier relations, supplier management and strategic issues. It covers the fields of purchasing and supply management, the central concepts, interfaces with other areas of the company, and their changing role within the business.

Project & Event Logistics

This module provides students with knowledge on turnkey projects such as oversize cargo, as well as heavy lifts such as earthmoving machinery, cranes, and explosives and missiles. Students acquire the skills to plan and ensure safe loading, stowage, securing, and care during the voyage and unloading of cargoes. They also learn about technical considerations and how to establish and maintain effective communication during loading and unloading. The Event Logistics component allows students to understand site-survey and analysis, transportation and handling of exhibits up to the fair grounds, dismantling, documentation, customs clearance, and re-packing and re-export by utilising improved communications and information flow.

Multi-Modal Transportation

Students will be equipped with knowledge in the concept of intermodality, types of multimodal, multimodal documents, ASEAN framework, liability, alternative transport solutions, import and export shipments, project/household removals, and exhibition forwarding.

Maritime Management

This module provides in-depth coverage of a wide range of topics such as the role of carriers, types of vessels, containers and cargo gears, preparation of sea waybills and bills of lading, maritime security and law, international sea transport conventions, including the Hague-Visby Rules, and major ports of call around the world.

LEVEL 2.2

Risk Management

This module teaches the basic concepts of contract management and managing risk. Topics include an introduction to contract management, contract management team formation, developing a contract plan, contract and supply information, managing risks, measuring performance, administration, relationship, disputes and termination of contract, general matters in contract management, pre-qualification of vendors and suppliers, and cross-border contract management.

Cold Chain

This module discusses the local and international regulatory bodies, international handling, and storage practices and standards for different pharmaceutical and food products. Students are provided with the tools for the implementation and monitoring of cold chain quality. Hazard Analysis and Critical Control Point (HACCP) and its implementation in cold chain will be discussed.

Project Management

This module presents engineering economy in the context of a decision-making framework such that students understand the necessary tools and their application. It begins with an introduction to the basics of engineering economy (interest, time-value-of-money, and equivalence), then it explores the entire project evaluation process, from defining the problem through post-implementation analysis, just as one would when building a case for management in order to make an investment decision.

Aviation Management

This module provides participants with the broad understanding of air cargo agency and airline operations. The module is structured so that the participants gain an understanding of aviation freight operations and security principles and practice, and how they need to be applied to achieve business success.

LEVEL 3.1

Ports & Terminals Management

This module covers the organisation and administration of ports and marine terminals as well as those of steamship companies. General cargo operations, tanker terminal operations, container operations, dry bulk operations, and related technical considerations, including securing and lashing containers are also examined. The module reviews concerns regarding port construction, port material handling equipment, physical port and vessel restrictions as well as port and terminal security issues.

Legal Issues in Freight & Trade

Students will be equipped with a sound working knowledge of legal liabilities and rights of Multimodal Transport Operators in international carriage of goods, cargo insurance, liability insurance and claims handling.

Optimisation & Simulation

The module introduces students to a basic computer modeling and simulations package that allows the former to construct simple process models. Students are taught how to write management reports based on the results obtained from a model.

Customs Brokerage Management

The module equips participants with the fundamental knowledge on import and export, and documentation. It also provides the basic knowledge involved in shipping, purchasing operations, freight forwarding and distribution activities.

LEVEL 3.2

Six-month Internship or In-House Project

This module forms an essential part of the course. It provides broad-based and practice-oriented training to equip students with the appropriate practical management and communication skills. It also offers them the opportunity to acquire the right attitude to enter the industry as logistics technologists. The six-month programme will be executed in close collaboration with participating companies in the logistics industry.

ACROSS-LEVEL MODULES (LEVEL 1.2 ONWARDS)

School of Engineering Elective Modules and the Diploma Plus Programme

Students take two modules from a wide range of clusters under the engineering and non-engineering elective clusters to complete their diploma. Furthermore, students can qualify for a diploma plus by simply topping up with two additional modules from the same cluster as one of the electives. The Diploma Plus Certificate helps students if they wish to pursue a university degree or increase their employability in discipline-specific areas. Students can choose electives from the range listed below.

Engineering Clusters

- Advanced Engineering Mathematics*
- Aerospace Design
- Applied Physics*
- Applied Technology
- Biomedical Engineering
- Industrial Control
- Industrial Electronics
- Information Technology
- Mechanical Technology
- Telecommunication Distribution Technology
- Workplace Safety & Health

Non-engineering Clusters

- Economics & Financial Applications
- Green Development
- Leisure & Retail Management

Other Available Diploma Plus Certificates

- Business
- Innovation Management
- Languages (Japanese)

* Designed in collaboration with the Department of Electrical and Computer Engineering, National University of Singapore (NUS). The syllabus is based on the first-year engineering mathematics and science curricula of NUS.

For detailed module descriptions under each cluster, please refer to page 165.

DIPLOMA IN LOGISTICS MANAGEMENT (LMGT) (3-YEAR COURSE)

SCHOOL OF ENGINEERING
LOGISTICS CLUSTER



The **Diploma in Logistics Management (LMGT)** focuses on meeting the manpower needs of Singapore's dynamic logistics industry. Logistics management has become a very important and integral part of business competitiveness. As such, the course aims to nurture students into professionals capable of planning, implementing and managing the challenges posed by today's demanding logistics businesses.

The course equips students with up-to-date logistics operations and management know-how, technologies, as well as business and IT skills essential for logistics management in the new economy. The broad-based multidisciplinary approach to training coupled with hands-on learning experience prepares students for a challenging and rewarding career in logistics management and maximises their potential for further studies.

A six-month internship (locally or overseas) or in-house project experience enhances the students' problem-solving skills through practical work. It also provides students with a very good understanding of logistics operations, issues and challenges beyond the classroom.

The course also caters for students who aspire to pursue further studies or work in non-engineering fields through the Diploma Plus Programme. This is an optional programme that aims to provide students with the opportunity to broaden their knowledge and deepen their skills in specific areas. Students can graduate with Diploma Plus Certificates or Enhancement Certificates.

ENTRY REQUIREMENTS

To be eligible for consideration, candidates must have the following GCE 'O' Level examination (or equivalent) results and fulfill the aggregate computation requirements:

Subject	'O' Level Grade
English Language	1-6
Mathematics (Elementary/Additional)	1-6
Any three other subjects	1-6

The aggregate computation for selection is based on grades obtained for English, Mathematics, Science (Grade 1-9) or Design & Technology (Grade 1-9) or Computer Studies (Grade 1-9) and two other subjects.

CAREER PROSPECTS

The course prepares students for employment in any industry or sector with logistics functions. LMGT graduates can be a supply chain analyst, logistics specialist, distribution specialist, distribution planner, transportation specialist, inventory analyst and many others. Graduates have also found employment with manufacturing companies as buyers or planners.

ACCREDITATION FOR FURTHER STUDIES

LMGT graduates can gain entry into degree courses at local universities. Some universities in the UK, US, Australia and Europe now offer undergraduate and master's degree courses in logistics.

Some of the universities that offer advanced standing and exemption to our graduates are:

- University of Huddersfield (UK)
- Northumbria University (UK)
- Royal Melbourne Institute of Technology (Australia)
- University of Southern Queensland (Australia)
- Southern Cross University (Australia)
- University of Tasmania (Australian Maritime College)
- Curtin University of Technology (Australia)
- University of South Australia (Australia)
- Victoria University (Australia)

COURSE CURRICULUM

Module Name	Credit Units
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YEAR 1

Level 1.1 (26 hours per week)

Introduction to Logistics	5
Web Publishing	4
Economics	4
Mathematics	5
Business Computing Applications	4
Sports & Wellness [^]	2
Creativity & Applied Thinking Skills [^]	2

Level 1.2 (21 hours per week)

Applied Statistics	4
Business Finance	4
Enterprise Information Systems	5
Quantitative Logistics Analysis	4
Communication Toolkit [^]	4

YEAR 2

Level 2.1 (23 hours per week)

Service Marketing	4
Warehousing & Storage Systems	5
Operation Planning & Control	5
Facilities Planning & Design	5
Interdisciplinary Studies (IS) module [^]	2
Interdisciplinary Studies (IS) module [^]	2

Level 2.2 (25 hours per week)

Customer Relationship Management	4
Inventory Management	4
Quality Management	4
Business Process Engineering	4
Distribution & Transportation	5
Innovation & Enterprise in Action [^]	4

YEAR 3

Level 3.1 (24 hours per week)

Chemical Logistics	4
Purchasing Management	4
Supply Chain Management	4
Six Sigma Philosophy	4
Global Logistics Management	4
World Issues: A Singapore Perspective [^]	2
Interdisciplinary Studies (IS) module [^]	2

Module Name	Credit Units
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Level 3.2 (25 hours per week)

(Student to do one)	
Six-month Internship	25
In-House Project	25

Across-Level Modules (Level 1.2 onwards) (6 hours per week)

School of Engineering (SoE) elective module*	3
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School of Engineering (SoE) Elective Modules

The SoE elective modules fall under a wide range of clusters under both Engineering and Non-Engineering categories. The aim is to provide students with the opportunity to broaden their knowledge and deepen their discipline-specific areas. Each cluster comprises a minimum of three 3-hour modules. Students are required to take two modules in order to satisfy the minimum graduating requirement.

COURSE MODULES

LEVEL 1.1

Introduction to Logistics

Students will study logistics as an integral part of an entire business operation. Topics include overview of logistics, principles and theory of logistics, logistics planning and control, logistical operations integration, supply chain concepts and future trends. Company visits form part of the practical sessions.

Web Publishing

This module equips students with the skills to develop static Web pages using Web development tools. Topics covered include an introduction to the Internet, Internet architecture, Hyper Text Markup Language and client-side scripting language.

Economics

This module gives an overall view of macroeconomics and microeconomics. It focuses more on the microeconomics theory of demand and supply, resource allocation, consumer behaviour, market demand, production and cost theory, price and output of firms under

conditions of perfect and imperfect competition. At the end of the module, students will be able to apply the basic concepts of economics and its tools to analyse economic problems and issues.

Mathematics

This module covers the fundamental concepts of mathematics in basic algebra, exponential and logarithmic equations, plane analytic geometry, basic inequality leading to linear programming, basic trigonometry, matrix, determinants, basic differentiation with application in maximisation and minimisation. This module provides basic mathematical foundation to the students.

Business Computing Applications

Students will develop the conceptual understanding and skill development necessary when applying computing to business. Topics include the use of spreadsheets in business, database concepts and methods, computer graphics and presentations, and SQL (the standard language for data manipulation). Students reinforce their understanding through extensive computer practical sessions. In addition, project assignments further enhance their skills and knowledge in using computers for typical business applications.



LEVEL 1.2

Applied Statistics

Students are introduced to basic statistical knowledge and techniques to solve problems. They will gain an overview of descriptive and inferential statistics, focusing on tools and models for decision-making. Students are taught to analyse data and interpret the results using a software package.

Business Finance

This module teaches the basic concepts and principles of business finance so that students have the financial information required for the business world. The module equips students with the basic knowledge of economic factors affecting finance, financial statements and analysis, cash flow and financial planning, cost of capital, inventory management and cost of quality. Students are trained to evaluate the viability of a project with capital budgeting techniques such as payback period, net present value and internal rate of return, and the profitability of a firm with breakeven analysis.

Enterprise Information Systems

This module shows students the important role information systems play in business and industry. Students are introduced to some of the essential functional areas of an enterprise system, like sales and distribution, production and supply chain management, and production planning, and how information interacts and relates with one another through the use of an Enterprise Resource Planning (ERP) System Software. Students will be given hands-on experience and assignments to identify the business processes and to design an ERP System Software for a small enterprise.

Quantitative Logistics Analysis

This module introduces students to various operational decision-making tools, including selected computer software used for the management and quantitative analysis of logistics operations in the manufacturing and service industries. Topics include decision tables and sequential decision trees, linear programming, transportation method, process planning, analysis, project management, scheduling, location analysis techniques in supply chain management, and simulation of inventory problems.

LEVEL 2.1

Service Marketing

This module teaches the concepts and principles involved in marketing goods and services. The module helps students to better understand and evaluate the marketing system in which products and services are planned, priced, promoted and distributed. Students will also appreciate the interaction of marketing variables and their impact on marketing decisions. They will get the opportunity to learn and apply marketing concepts in a creative way through projects, presentations and case studies.

Warehousing & Storage Systems

This module gives students an understanding of the importance of warehousing and storage management in the overall logistics management of a business organisation. Topics include warehouse roles in the supply chain management, warehousing decisions and operations, storage systems, warehouse material handling equipment and management, warehouse layout and design, barcode and radio frequency technologies.

Operation Planning & Control

The module provides students with a thorough understanding of the principles of production planning and control and their applications in a wide spectrum of manufacturing industries. The major topics covered include master production scheduling, material requirements planning, capacity planning and production activity control. Recent advances in this field and the use of computer software in engineering production applications will be emphasised.

Facilities Planning & Design

This module exposes students to the analytical aspects of the various approaches used in the planning and designing of facilities. Topics include the placement of single and multiple facilities, manufacturing processes, economic evaluation of processes, production systems, assembly line balancing and plant layout. Students also benefit from practical exposure in areas such as computer-aided design of plant layout, line balancing and computerised package on the centre-of gravity model for facility location.



LEVEL 2.2

Customer Relationship Management

This module provides students with an understanding of Customer Relationship Management (CRM) from a business perspective. It explains the importance of customer focus and covers new customer service strategies and technologies. This includes Sales Force Automation, a technique of CRM using a variety of tactical and strategic functions. The module also covers the analytical aspects of CRM, such as leveraging on data gathered to make strategic decisions, as well as CRM technologies and the ROI calculations. Real-life case studies give students an understanding and appreciation of CRM in the e-business working world.

Inventory Management

Students are introduced to techniques that can be used for maintaining minimum stocks of various industries and commercial enterprises, at minimum cost. Special emphasis is given to areas within the supply chain where cost of operations could be minimised through efficient management of inventory. An analysis of different inventory policies and the use of basic techniques in forecasting and simulation relevant for inventory management are also included.

Quality Management

Students will learn the importance of quality, and how to apply quality concepts, management of functional techniques and statistical techniques. Areas covered include statistical process controls, acceptance sampling techniques and design of experiments. The functional aspects of quality management such as benchmarking, quality systems and quality costs are also included to expose students to quality management functional techniques within the organisation.

Business Process Engineering

Business Process Engineering (BPE) is a concept used to improve key business processes that will result in performance improvement and radical change. This module introduces students to the fundamental principles of innovative process change through BPE. The module provides an overview of BPE and how it can be implemented in the organisation.

Distribution & Transportation

This module provides students with an understanding of the various aspects of distribution, and transportation of goods and services. Topics covered include an understanding of the functions of physical distribution management, transportation management and costing, traffic management, containerisation systems, vehicle routing and scheduling, and customer services in distribution and transportation.

LEVEL 3.1

Chemical Logistics

This module equips students with knowledge of logistics practices in the chemical industry, and the transportation, handling and storage of dangerous goods. This module consists of seven independent chapters, which cover different areas of managing chemicals and their hazards. Guided tutorials, audio visual aids such as videos and Audio Video Interleave (Avi) files, quizzes, assignments and a project will be used to reinforce the theoretical aspects.

Purchasing Management

This module provides students with some essential practices and techniques for effective purchasing. It emphasises the proactive role of the purchasing function and its ability to contribute to the bottomline. Students learn about the importance of partnership sourcing, value analysis and supplier development in increasing the organisation's competitiveness. Students are required to prepare case analysis during tutorial sessions and undertake a project assignment (term paper) relating to purchasing or procurement.

Supply Chain Management

Students are introduced to the critical concerns involved in the design, control, operation and management of supply chain systems. Various models and tools developed for supply chain management will also be covered. Students are taught simple techniques that can be used to analyse various aspects of the supply chain.

Six Sigma Philosophy

The objective of this module is to identify the meaning and benefits of implementing a Six Sigma programme in an organisation. Six Sigma issues involving knowledge-centred activity (KCA) opportunities, deployment, project selection, management needs, and tools and techniques are included. Students gain valuable insights into the strategies of business development, and tactics employed utilising the Six Sigma tools and techniques. This module also illustrates how service, business development and other functions can apply, and benefit from, the techniques.

Global Logistics Management

The complexity and intensity of today's global marketplace pose many challenges to logistics executives and managers. This module provides students with a good foundation in global logistics operations and an understanding of logistical practices and their key differences across different nations.



LEVEL 3.2

Six-month Internship or In-House Project

This module forms an essential part of the course. It provides broad-based and practice-oriented training to equip students with the appropriate practical management and communication skills. It also offers them the opportunity to acquire the right attitude to enter the industry as logistics technologists. The six-month programme will be executed in close collaboration with the participating companies in the logistics industry.

ACROSS-LEVEL MODULES (LEVEL 1.2 ONWARDS)

School of Engineering Elective Modules and the Diploma Plus Programme

Students take two modules from a wide range of clusters under the engineering and non-engineering elective clusters to complete their diploma. Furthermore, students can qualify for a diploma plus by simply topping up with two additional modules from the same cluster as one of the electives. The Diploma Plus Certificate helps students if they wish to pursue a university degree or increase their employability in discipline-specific areas. Students can choose electives from the range listed below.

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- Applied Physics*
- Applied Technology
- Biomedical Engineering
- Industrial Control
- Industrial Electronics
- Information Technology
- Mechanical Technology
- Telecommunication Distribution Technology
- Workplace Safety & Health

Non-engineering Clusters

- Economics & Financial Applications
- Green Development
- Leisure & Retail Management

Other Available Diploma Plus Certificates

- Business
- Innovation Management
- Languages (Japanese)

* Designed in collaboration with the Department of Electrical and Computer Engineering, National University of Singapore (NUS). The syllabus is based on the first-year engineering mathematics and science curricula of NUS.

For detailed module descriptions under each cluster, please refer to page 165.