



## DIPLOMA IN INTEGRATED FACILITY MANAGEMENT (T28)

### Course Overview

Think you've got what it takes to manage establishments like Jewel Changi Airport and Gardens by the Bay? The Diploma in Facilities Management will ensure you are more than ready for this growing industry.

As the world's first diploma accredited by the International Facility Management Association (IFMA) as an Associate Degree Programme, this course will give you a competitive edge globally. Our diverse course curriculum will equip you with the knowledge and skills in managing the amenities, aesthetics and functionality of major establishments. You will gain exposure to multidisciplinary subjects related to building sciences, business management and facility design and planning.

Industry-relevant certifications like BizSAFE Level 2 and 4 (Risk Management, Workplace Safety and Health Management) from the Workplace Safety and Health Council and Fire Safety Manager from SCDF will also prepare you for the workforce. Look forward to exciting career opportunities in facilities management or development teams in the airport, hospitality and tourism, leisure and entertainment, and business and finance sectors.

Join us on this journey and embark on an exciting future in the Facilities Management industry!

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

**Get the opportunity to attain the below certification(s) throughout the course of your study:**

- BizSAFE Level 2 and 4 (Risk Management, Workplace Safety and Health Management) from the Workplace Safety and Health Council
- Fire Safety Manager certification from SCDF
- Digital Delivery Management Certification- Tier 4 (Provisional) from Building Smart Singapore



#### INDUSTRY-RELEVANT CERTIFICATIONS

Equip yourself with industry-relevant certifications like BizSAFE Level 2 and 4 (Risk Management, Workplace Safety and Health Management) from the Workplace Safety and Health Council and Fire Safety Manager certification from SCDF.



#### PICK YOUR NICHE

Diversify your knowledge with our multidisciplinary industry-relevant curriculum by picking a specialisation from the Hospitality, Aviation or Smart Facilities cluster, creating endless career opportunities!



#### GLOBAL RECOGNITION

With our curriculum mapped to the International Facility Management Association (IFMA), you will be recognised globally for facilities management competencies such as Environmental Stewardship and Sustainability, Finance, Real Estate and Project Management.

# 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        |               |
| <b>2023 Planned Intake</b>                   | <b>75</b>     |
| <b>Net ELR2B2 aggregate range (2023 JAE)</b> | <b>4 - 19</b> |

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.

# What You'll Learn

YEAR 1

YEAR 2

YEAR 3

TPFUN

Kick start your facilities management journey by understanding the fundamentals of buildings and discover your competencies, interests and career aspirations through lab work, industrial visits and hands-on learning opportunities.

## Core Subjects

| Subject Code | Subject  | Credit Units |   |
|--------------|--|--------------|---|
| EGB2002      | <b>Air Conditioning &amp; Mechanical Ventilation</b><br><br>The Air Conditioning and Mechanical Ventilation (ACMV) system is one of the most important systems of a building and represents a significant portion of its total energy consumption. Hence, an understanding of the operating principles of a typical ACMV system is critical to maximizing the overall energy efficiency of a building.   | 4            | ^ |
| EBD2009      | <b>Building Information Modelling Collaboration</b><br><br>This subject emphasises the use of Building Information Modelling (BIM) software to design and develop building services systems that meet the intended objectives. You will learn the processes of incorporating established architectural models with Mechanical, Electrical, Plumbing (MEP) and Fire Protection systems and inter-disciplines collaboration work. The use of the as-built models and the information contained therein for BIM Facility Management (BIMFM) and other simulation tools such as energy modelling will also be discussed. | 3            | ^ |
| EBT2009      | <b>Electrical Design &amp; Installation</b><br><br>This subject covers basic electrical design. It includes the principles and design of low-voltage electrical systems in compliance with the relevant local statutory requirements, as well as good engineering practices.   | 4            | ^ |

It also covers the different types of electrical installation methods and indoor artificial lighting design for buildings.

**EMA1003**

**Engineering Mathematics 1**

**4**



This subject introduces the concepts in algebra and trigonometry that are fundamental to an engineering course. Topics include expressions and equations, functions and graphs, trigonometry, complex numbers, matrices and vectors. These also constitute pre-requisite knowledge for a course in Calculus.

**EMA1002**

**Engineering Mathematics 2**

**4**



This subject introduces the basic concepts of calculus and statistical method to test a hypothesis. Basic concepts in calculus include limits, derivatives and integrals. Applications of the derivative and integrals in engineering will be discussed. Basic statistical method in hypothesis testing includes normal distribution, confidence interval of population mean and procedure to test hypothesis for a claim made about a population mean.

**EBT1003**

**Facility Operations & Maintenance**

**4**



Air-conditioning and ventilation, cold water distribution systems, electrical installations, lifts and escalators are the key systems in facilities operations. Knowledge of a system's operation and its maintenance requirements are essential to facility management. Facility management is about the stewardship of existing facilities in a real estate to enable effective operation and better business performance, thus leading to a higher level of work satisfaction and increased productivity.



**EBD2005**

**Security & Surveillance**

**4**



This subject gives an overview of security and surveillance, including the entire process of security and

|                |   |          |   |
|----------------|---|----------|---|
|                | surveillance design and integration. The main emphasis is placed on applying scientific and engineering principles for the design of the system and the use of component performance measures to establish the effectiveness of such systems when applied across various business sectors.  |          |   |
| <b>EBD1004</b> | <b>Virtual Design &amp; Facility Planning</b><br><br>This subject develops your skills to visualise facility design and planning. You will learn facility planning concepts with the use of digital tools for visualisation, simulation and documentation. The knowledge gained can be applied to create virtual design projects in the built environment sector.                 | <b>3</b> |  |
| <b>EFM1002</b> | <b>Workplace Safety &amp; Health for Facility Management</b><br><br>This subject gives you an overview of a safe working environment in the area of facilities management. You will be equipped with the skills of identifying and reducing workplace related risks at source, and you will also be exposed to common practices taken in the industry to ensure a safe workplace. | <b>4</b> |  |

YEAR 1


**YEAR 2**

YEAR 3

TPFUN

Deepen your knowledge in building sciences and management. In addition to technology and spaces utilisation, you will also get the chance to venture into aviation or hospitality, expanding your career options.

### Core Subjects

| Subject Code   | Subject  | Credit Units |   |
|----------------|--|--------------|---|
| <b>ESE1006</b> | <b>Computer Programming for Problem Solving</b><br><br>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 | <b>4</b>     |  |

approach. Software implementation includes the process of designing, writing, testing, and debugging program code.

**EFM2004**

**Contract Management**

**4**



This subject covers the knowledge of contract management that is aligned to the practices in the real estate industry. Students will learn all aspects of contract management which include administration, procurement procedures, evaluation of services and products, tenant management, and service delivery.

**ESE1008**

**Data Visualisation & Analytics**

**3**



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.

**EBM3005**

**Energy Management & Audit**

**4**



This subject covers two main areas: energy management and energy audit. For the former, the subject illustrates the intrinsic value and concept of energy management and the implementation consideration and steps involved. On Energy Audit, the emphasis is on energy audit methodology and procedures; and methods used to evaluate energy performance of buildings and its sub-systems. These will include use of energy performance benchmarks and comparison with acceptable practices and prevailing codes and regulations. Finally, the subject discusses the application of life cycle cost concept to evaluate the economic viability of proposals on improving energy performance.

**EBM2005**

**Fire & Life Safety Management**

**4**



This subject introduces the roles and responsibilities of a Fire Safety

Manager for both commercial buildings and industrial premises. You will be exposed to the procedure adopted in running a fire command centre, the use of detection, protection and control systems, fire investigation and formulation of a fire emergency plan.

**EBM2004**

**Project Management**

**4**



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.

**EFM3001**

**Sustainable Facility Management**

**4**



This subject covers the roles of Facility Management (FM) in environmental sustainability. It will cover the integration of both areas so that you can see a connection between reducing carbon footprint and emission of the assets/properties under effective and thoughtful FM. It will also examine the policies and practices that FM should implement to achieve the said goals. The subject will describe the framework and strategies for achieving 'greener' results at the inception, design, construction to operational stage of a building. The subject will also provide an overview of the standards or rating systems that can be used to gauge the attainment of the sustainable goals.

## Cluster Elective Subjects

*Students to choose three subjects from any of these elective clusters*

| Subject Code | Subject  | Credit Units |   |
|--------------|--|--------------|---|
| EAM3002      | <b>Airport Administration</b><br><p>This subject covers the fundamental concepts and principles involved in the organisational, and administration of modern international airports. Topics include airport performance, productivity and feedback systems, and airport-related commercial management, public relations, corporate/business planning, organisational structures, financial and accounting strategies, as well as revenue and expense sources.</p>  | 4            | ^ |
| EAM1001      | <b>Airport Operations &amp; Management</b><br><p>This subject introduces the fundamental concepts and principles involved in the management and operation of modern international airports. You will learn about the principles of airport management and the various aspects of airport operations, including, airport terminal layout and planning, terminal signage systems, gate and baggage belt assignments, terminal contingency planning, airport emergency systems, airport support services and equipment, estate management and terminal landscaping.</p> | 4            | ^ |
| EAT2006      | <b>Airport Systems</b><br><p>This subject provides an overview of the key facilities and systems in both the landside and airside of an airport. Topics covered in landside will include passenger check-in systems, the Flight Information Display Systems (FIDS) and the various airport IT support systems. Other topics include the operation of the fully automated baggage handling system, the People Mover System (PMS) and the Passenger Loading Bridges system. On the airside, topics covered include</p>   | 4            | ^ |



the causes of wear and tear of aircraft pavements, methods of assessing the condition of aircraft pavements, the programming of maintenance works and techniques of repairs and their compliance to international operational standards and requirements.

### Hospitality Facilities Elective Cluster

| Subject Code   | Subject   | Credit Units |   |
|----------------|---|--------------|---|
| <b>BHT1010</b> | <b>Introduction to Hospitality &amp; Tourism</b><br><br>Learning and Teaching Approach:<br><b>Scenario-Based</b><br><br>This subject provides an overview of the multi-faceted hospitality and tourism industry and their key sectors. It introduces common terminologies used and covers the various theories on travel and tourism. It also highlights the interplay between demand and supply forces of the two industries and explores the major issues faced by them. It lays the foundation for future applications where decisions can be made about the hospitality and tourism industry. | <b>4</b>     | ^ |
| <b>BHT2034</b> | <b>Business &amp; Leisure Events</b><br><br>Learning and Teaching Approach:<br><b>Project-Based</b><br><br>This subject covers the fundamental concepts and practices relevant to the business and leisure events industry. Focal areas include events management, the operationalising of events, event-related technology, and events sustainability.   | <b>4</b>     | ^ |
| <b>BHT3026</b> | <b>Customer Experience Innovation</b><br><br>Learning and Teaching Approach:<br><b>Project-Based</b><br><br>This subject covers the transformative  | <b>4</b>     | ^ |

role of tourism innovations in creating excellent customer experiences. Topics will focus on the design of the customer journey for different hospitality and tourism businesses and its correlation to the value of the tourism product or service.

### Smart Facilities Elective Cluster

| Subject Code   | Subject  | Credit Units |   |
|----------------|--|--------------|---|
| <b>EBM2006</b> | <b>Building Management System</b><br><br>This subject covers the fundamental knowledge required in the design and operation of a Building Management System (BMS). The concept of controls and monitoring with sensors and Direct Digital Controllers (DDC) will be introduced. Control strategies for air-conditioning, BMS software features for facility management and energy management will also be covered.   | <b>4</b>     | ^ |
| <b>EBT2010</b> | <b>Smart FM &amp; Asset Enhancement</b><br><br>The subject gives you an understanding on the nation's Smart FM and Real Estate digital transformation roadmap and how the various digital technologies, e.g. smart sensors & IoT, machine vision, video analytics, AI & machine learning, big data analytics, AR/VR, IDD BIM & digital twin, solar PV etc. work in facilities management applications. You will learn to develop plans to maximise value and minimise costs through value engineering perspectives. You will also learn about materials and methods employed in sustainable refurbishment or retrofitting works, as well as the ability to capitalise on them. | <b>4</b>     | ^ |
| <b>ESE3013</b> | <b>Intelligent Automation</b><br><br>This subject will provide you with basic knowledge and hands-on digital   | <b>3</b>     | ^ |

transformation skills on rapid multi-experience application development and integration of users, tasks and systems towards enhancing productivity, human augmentation and automatic data-driven decision-making. It will cover techniques on how to leverage on data from information systems and Internet of Things (IoT) devices for agile response and productivity. This subject will enable you to automate data-driven decision making through integration of advanced analytics and learning models to applications.

YEAR 1

YEAR 2


**YEAR 3**

TPFUN

You are now ready to take on the world of facilities management by applying all the knowledge and skills you have learnt over the past two years. Get first-hand work experience in managing your preferred facility during your internship and let your innovative mind solve real world problems during your major project!





### Core Subjects

| Subject Code | Subject   | Credit Units |
|--------------|---|--------------|
| EMP3002      | <p><b>Major Project</b></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            |
| EBZ2006      | <p><b>Service Quality &amp; Management</b></p> <p>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.</p>                | 4            |

|                |  |          |  |
|----------------|--|----------|--|
| <b>EBD3006</b> | <b>Building Performance Modelling</b>  | <b>4</b> |  |
|                | <p>This module covers the basics concepts of energy modelling methodology using an energy modelling software. It will help you to understand how various building design strategies help to reduce the building's energy consumption. Submission requirements for the "Green Mark" certification for both passive and active building design, as well as an evaluation and analysis of a building's performance, will also be covered.</p> |          |  |

## Special Electives

Students can opt to take Special Electives when offered. These optional subjects aim to stretch the students' potential to enable them to meet their aspirations. They are taken in addition to the diploma cluster elective subjects.

| <b>Special Electives</b>  |  |                     |   |
|--|--|---------------------|---|
| <b>Subject Code</b>  | <b>Subject</b>   | <b>Credit Units</b> |   |
| <b>EED3009</b>   | <b>Special Project 1</b>   | <b>2</b>            |  |
|  | <p>The focus of this subject is on the application of students' existing domain knowledge to develop a deliverable. The subject will introduce new skills and knowledge specific to the project, as and when required.</p>                                     |                     |   |
| <b>EED3010</b>   | <b>Special Project 2</b>   | <b>2</b>            |  |
|  | <p>This subject provides opportunities for students to apply the acquired knowledge and skills, along with their fundamental and in-depth knowledge from different subjects to designing, developing, and implementing a well-engineered project solution.</p> |                     |   |
| <b>EED3011</b>   | <b>Higher Engineering Skills 1</b>   | <b>2</b>            |  |
|  | <p>Higher Engineering Skills 1 and 2 aim to impart some special design and hands-on skills that allow you to acquire knowledge and skills that are not normally incorporated into a diploma programme. These Special Elective subjects will equip you with</p> |                     |   |

the skills and knowledge to participate in competitions and enable you to tackle real challenges.

**EED3012**

**Higher Engineering Skills 2**

**2**



Higher Engineering Skills 1 and 2 aim to impart some special design and hands-on skills that allow you to acquire knowledge and skills that are not normally incorporated into a diploma programme. These Special Elective subjects will equip you with the skills and knowledge to participate in competitions and enable you to tackle real challenges.

YEAR 1

YEAR 2

YEAR 3

**TPFUN**

You will also take this set of subjects that equips you with the crucial 21st-Century life skills you need to navigate the modern world as an agile, forward-thinking individual and team player.

### TP Fundamentals (TPFun) Subjects

| Subject Code | Subject   | Credit Units |  |
|--------------|---|--------------|--|
| ESI3001      | <b>Student Internship Programme</b><br><br>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. | 12           |  |
| ETX1001      | <b>Effective Communication</b><br><br>This subject introduces the fundamentals of effective communication. It also covers how to communicate with and convince an audience through writing and speaking   | 3            |  |

tasks. The skills in this subject will include the application of strategies for communication, appropriate vocabulary, language features, visual aids, tone and style. The **Message, Audience, Purpose and Strategy** (MAPS) framework will also be applied when planning and engaging in written and verbal communication. There will be opportunities to communicate and collaborate through active learning activities, apply digital and information literacy skills and build competence through self-directed learning.

**ETX1002**

**Professional Communication**

**3**



This subject covers professional communication skills for the workplace and employability skills in the areas of career preparation. It covers communication and interpersonal skills, including effective virtual communication etiquette, and conducting oneself professionally in the workplace. In addition, essential career preparation skills such as resume writing and interview skills, needed to seek and secure work would be included. The **Message, Audience, Purpose and Strategy** (MAPS) framework would also be applied when engaging in written and verbal communication. There will be opportunities to communicate and collaborate through active learning activities, apply digital and information literacy skills and build competence through self-directed learning.





**GTP1301**

**Current Issues & Critical Thinking**

**3**



This subject covers current issues, including diverse local and global concerns, that will impact lives and may have critical implications for Singapore. There will be opportunities to build competence through self-directed learning, communicate and collaborate in active discussions and objectively analyse issues using digital and information literacy skills and critical thinking scaffolds.

|                |   |  |
|----------------|---|--|
| <b>GTP1201</b> | <b>Career Readiness</b><br><br>This subject focuses on personal management skills. It develops an understanding of one's career interests, values, personality and skills for career success. It covers the necessary knowledge, skills and attitudes needed to succeed in the workplace and achieve professional goals. There will be exposure to apply digital and information literacy skills, build competence through self-directed learning methods, and acquire the skills of being a lifelong learner.  | <b>1</b>     |
| <b>GTP1202</b> | <b>Career Management</b><br><br>This subject focuses on career management skills. It covers the importance of workplace readiness skills to adapt and respond to the changing job market environment. Career ownership and continuous learning for lifelong employability will be emphasised. There will be exposure to apply digital and information literacy skills, build competence through self-directed learning, and acquire the skills of being a lifelong learner.   | <b>1</b>    |
| <b>EGS1002</b> | <b>Global Studies</b><br><br>This subject provides essential skills and knowledge to prepare students for an overseas experience. They will examine the elements of culture and learn the key principles of cross-cultural communication. In addition, they will gain an appreciation and awareness of the political, economic, technological and social landscape to function effectively in a global environment. The subject prepares students to be responsible global citizens and leaders who can contribute to the global community through effective communication and collaboration. | <b>3</b>  |
| <b>GTP1302</b> | <b>Guided Learning*</b>   | <b>3</b>  |

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. Students will enhance their problem solving and digital literacy skills through this subject.

**EIN1001**

**Innovation & Entrepreneurship**

**2**



The subject is designed for learners from all disciplines to embrace innovation in either their specialised field or beyond. Learners will be taught to apply the Design Thinking framework to develop problem statements, ideate and identify feasible solutions. Learners will be exposed to several tools for prototyping. In addition, commercial awareness will be imbued in learners through various innovation and entrepreneurship concepts or tools. This subject also prepares students to be self-directed lifelong learners who are digital and information literate. It nurtures communicative and collaborative citizens who can use objective analysis in problem-solving.

**GTP1101**

**Leadership Fundamentals**

**2**



This subject focuses on self-leadership based on the values of integrity, respect, and responsibility. Increasing awareness of self and others will lay the foundations for personal and relationship effectiveness. Consequential thinking, clear articulation of personal values and visions, emphatic listening, and



collaboration in serving others are some of the essential skills covered in this leadership journey. There will be opportunities to build and to apply the concepts of being a values-centred leader.

**GTP1102**

**Leadership in Action**

**1**



This subject focuses on Service Learning as an experiential platform to apply the tenets of Self and Team Leadership. Service Learning will be the capstone project for this subject, which will require an analysis of the diverse needs of the community, collaboration with community partners and demonstration of learning, including key elements of empathy. There will be opportunities to build and to apply the concepts of being a values-centred leader.

**LSW1002**

**Sports & Wellness**

**2**



The subject enables students to build a good foundation for healthy living. Students will have the opportunity to participate in hands-on practical sessions where they will experience and develop both physical and technical skills in their chosen sports or fitness activities. Through a structured curriculum that facilitates group participation, practice sessions and mini competitions, students will be able to build lifelong skills such as resilience, leadership, communication and teamwork. Physical activity sessions will also be supplemented by health-related topics that span the dimensions of health, such as diet, nutrition, stress and weight management, to provide students with a holistic approach to healthy living. This subject also prepares students to be self-directed and accountable for lifelong learning for good health.

**TGS1001**

**Sustainability & Climate Action\***

**3**



This subject prepares students to be responsible global citizens and future leaders who can contribute to the

global community. It introduces the topics of sustainability and explores how human societies can act to build a sustainable future. This subject focuses on the impact of climate change, potential solutions to climate change, and the future of the green economy from global and local perspectives.

\* Students must choose to take either **Sustainability & Climate Action** or **Guided Learning**.

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## GRADUATION REQUIREMENTS

|                                     |                      |
|-------------------------------------|----------------------|
| Cumulative Grade Point Average      | min 1.0              |
| TP Fundamental Subjects             | 36 credit units      |
| Diploma Core Subjects               | 77 credit units      |
| Diploma Cluster Elective Subjects   | 11 credit units      |
| <b>Total Credit Units Completed</b> | min 124 credit units |