

Technische Universität München (TUM)



Mr. Mahesh Hariharan

**Assistant Faculty Head in Railway Engineering
(Rail and Urban Transport)**

TUM Asia

Singapore

Campus Locations



Munich



Garching



Straubing



Weihenstephan



Singapore



Heilbronn

TUM in Singapore



Situated in close proximity to top local universities such as National University of Singapore (NUS) and Singapore Institute of Technology (SIT), the overseas campus of TUM based in Singapore boast close partnerships in both education and research activities with top local universities, research institutions and multinational companies such as National Research Foundation, BASF, GlobalFoundries and Evonik.

TUM in Singapore



Singapore: The Gateway to Global Success

Singapore remains one of Asia's economic powerhouses, boasting a diversified portfolio of thriving industries from aerospace, energy and chemicals to logistics and supply chains.

A rich portfolio of enabling industries

> 130

more than 130 aerospace players and 30 aerospace firms in Singapore

ASIA'S #1

ranked Asia's Top Logistics Hub

31.6%

of Singapore's total manufacturing output accounted by the electronics sector

> 100

global chemical firms operating in Singapore

S\$ 309
million

of funding support for innovative research projects in sustainable urban food production, etc.

Our programmes are conferred by TUM and taught in person by TUM professors from Germany. Taught only at the Singapore campus of TUM, they are competitively designed to equip students with the twin perspectives from Europe and Asia and academic knowledge to move ahead of the global landscape.

Master of Science Programmes

Our Programmes



MSc in Aerospace Engineering

Specialises in aeronautical design, space design and researches in the aerospace engineering



MSc in Rail, and Urban Transport

Specialises in Railway Engineering, or Transport.



MSc in Logistics Engineering and Management

Integrates supply chain management, logistics, engineering, and management to provide cross-functional skills.



MSc in Sustainable Food

Specialises in food safety, Food science and food technology.



Our programmes are conferred by TUM and taught in person by TUM professors from Germany. Taught only at the Singapore campus of TUM, they are competitively designed to equip students with the twin perspectives from Europe and Asia and academic knowledge to move ahead of the global landscape.

Master of Science Programmes

Our Programmes



MSc in Industrial Chemistry

Equips specialist engineers for the pharmaceutical, as well as the fine and specialty chemical industries.



MSc in Integrated Circuit Design

Specialises in Analog IC design, Digital IC design flow; design methodology; semiconductor process technology and devices.



MSc in Green Electronics

Specialises in research areas of novel electronic/optoelectronic devices and systems, focusing on the energy, sensing, monitoring and manufacturing fields.



Our Scholarships

At TUM Asia, we are committed to fostering academic excellence by supporting students in their pursuit of knowledge to unlock potential and empowering them to make enduring contributions for the future.

1 Academic Distinction Scholarship*

Awarded to high-calibre candidates enrolled in any of TUM Asia's master's programmes who have demonstrated outstanding academic achievements

2 ASEAN Scholarship*

Awarded to exemplary candidates from ASEAN countries enrolled in any of TUM Asia's master's programmes who have exhibited outstanding leadership qualities, character and exceptional academic performance

3 Women in STEM Scholarship*

Awarded to exceptional female candidates enrolled in any of TUM Asia's master's programmes who have demonstrated strong leadership qualities and potential in personal endeavours

4 TUM Asia-DAAD Scholarship

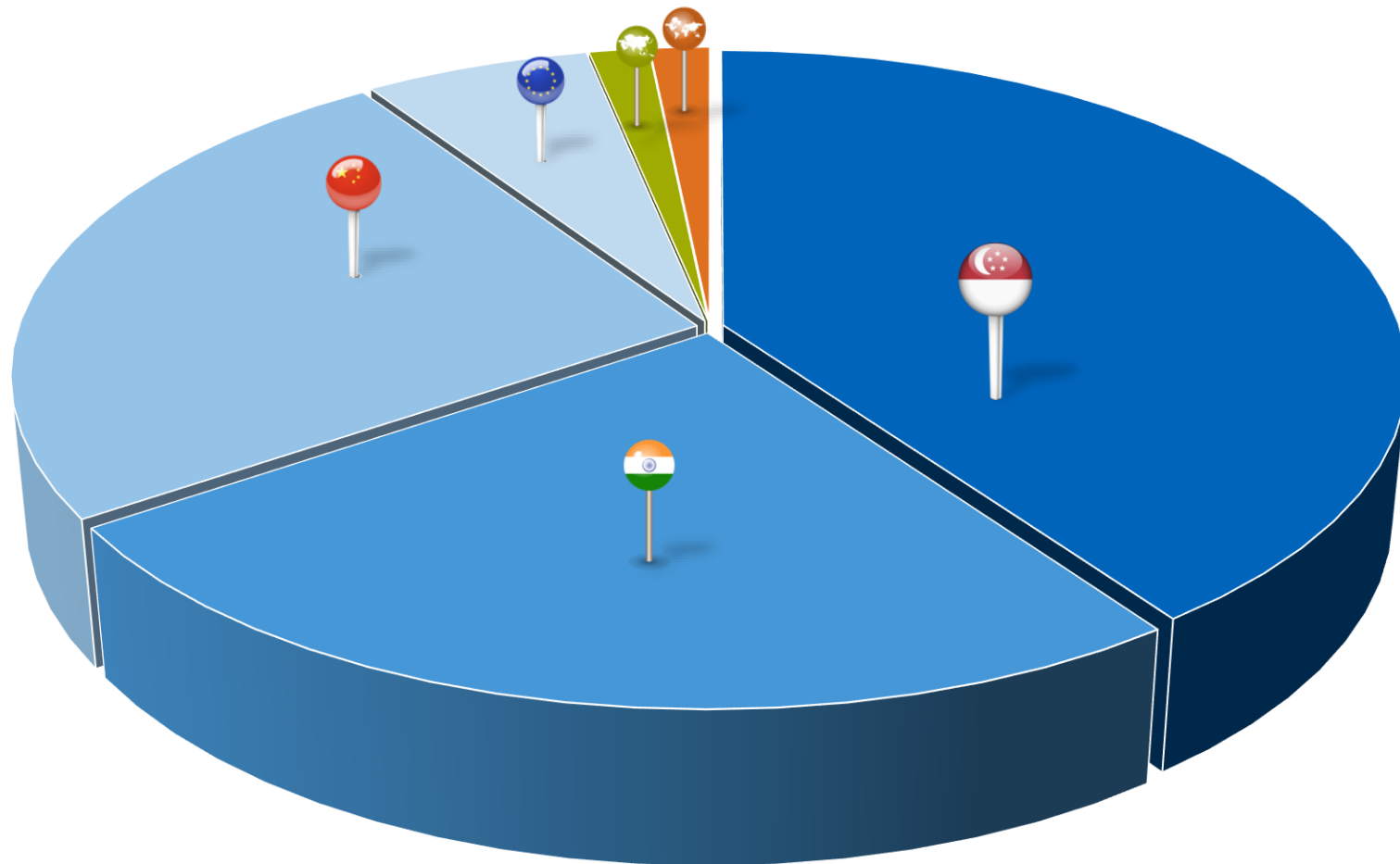
Funded by German Academic Exchange Service (DAAD) and awarded on a per-semester basis to TUM Asia's students who have achieved academic excellence and demonstrated strong aptitude.

5 TUM Asia-DAAD MSc Scholarships

Funded by German Academic Exchange Service (DAAD), the scholarship is awarded to top-notch graduates from ASEAN (including Timor-Leste) and enrolled in TUM Asia's selected Master of Science (MSc) programmes

6 EDB-IPP Scholarships (MSc ICD - SG/SPR)

The Industrial Postgraduate Programme, developed by Singapore's Economic Development Board (EDB), aims to provide postgraduate students with industry relevant training in preparation for Research & Development (R&D) roles in industry, and concurrently help companies to attract talent to fill their R&D roles.

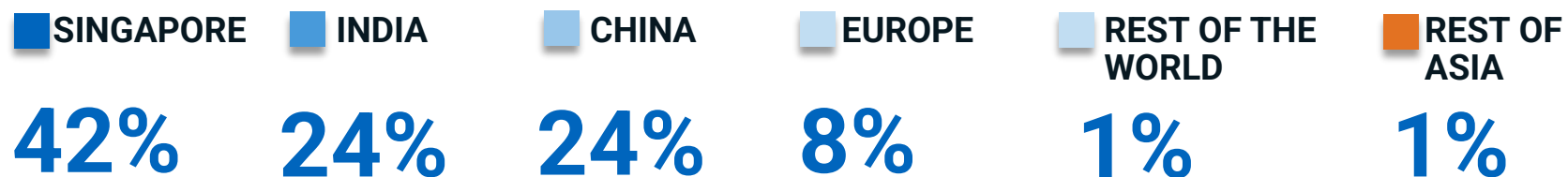


~3,200

Close to 3,000 students coming from more than 35 nationalities

>902

Number of students studying at TUM Asia (bachelor's and master's students; and working professionals)



Our Students

Introduction into

Master of Science in

Rail and Urban Transport (RUT)

and

Master of Science in

Logistics Engineering and Management (LEM)

Overview



MSc in Rail, and Urban Transport

Specialises in Railway
Engineering, or Transport.



MSc in Logistics Engineering and Management

Integrates supply chain
management, logistics, engineering,
and management to provide cross-
functional skills.



Summary:

- **TUM Master Degree**
- **Duration: 2 years full-time**
- **120 ECTS**
- **11 months of course work + Internship (min. 3 months) + Master Thesis (6 months)**
- **Study Place: TUM Asia Singapore**

Programme Structure

MSc. Logistics Engineering and Management

SEMESTER 1 & 2

Core Modules

- Introduction to Business Logistics
- Introduction to Supply Chain Management
- Industrial logistics
- Planning of Intralogistics Systems
- Consumer Industry Supply Chain Management
- Logistics Service Provider (LSP) Management
- Health Care Logistics
- Decision Support for Transport and Logistic Processes
- Traffic Impacts, Evaluation of Transport and Logistic Processes
- Statistical Methods for Transport and Logistic Processes
- Soft Skills

Technical Elective Modules (Choose 3)

- Green Supply Chain & Risk Management
- Design and Application of Material Handling Systems
- Airport and Harbour Design
- Transport and Urban Planning

Non-Technical Elective Modules (Choose 1)

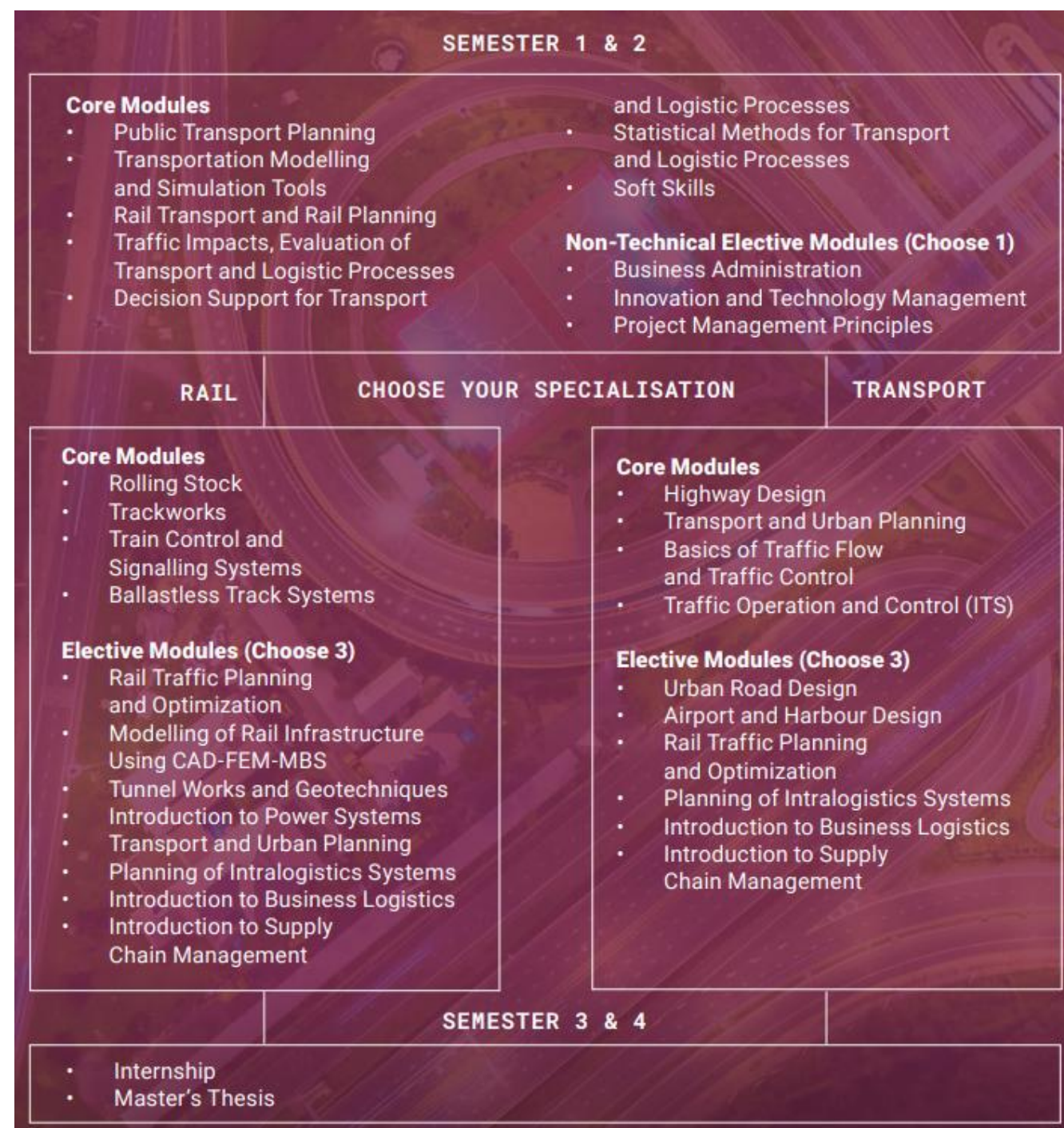
- Business Administration
- Innovation and Technology Management
- Project Management Principles

SEMESTER 3 & 4

- Internship
- Master's Thesis

Programme Structure

MSc. Rail and Urban Transport



Internship & Master's Thesis

Internship:

- Students must complete a three-month internship with the industry or an academic institution of choice related to his or her field of study.
- Students are empowered and given the freedom to pursue internship in their desired fields anywhere in the world.

Master's Thesis:

- Students must complete a six-month master's thesis at the end of the study.
- The master's thesis can be done in collaboration with industry partners or research institution.
- The master's thesis can be done anywhere in the world.
- A combination of internship and master's thesis is possible (9 months duration).

Rail and Urban Transport

Career Prospects

Graduates specialising in transport will be trained to put the stakeholders at the heart of the planning process and deploy the various analytical approaches and methodological tools to develop innovative mobility solutions for the new transport era.

Transport planning is becoming increasingly complex. With autonomous vehicles, electric vehicles, machine learning, and big data coming into the mix, the transport industry is on the cusp of a new revolution, facing an unprecedented combination of new and old technologies as new priorities emerge.

At the crossroads between traditional and modern-day vehicles, transport planners play an even more critical role in marrying the slew of divergent needs to develop a sustainable transport system.

Amid rising calls to reform the transport sector, rail transportation remains the gold standard for carbon efficiency for many emerging and burgeoning cities to avoid further traffic gridlocks and pollution.

Graduates specialising in railway will be highly needed globally for the deep level of knowledge in rail engineering to construct, design, renew and maintain a range of urban rail tracks and infrastructure. They will be able to apply analytical thinking and problem-solving skills in myriad situations in areas of planning and installation of rail infrastructure, taking environmental considerations into account to achieve safe, efficient, and sustainable transportation.

Rail Project Manager

Rail Consultant

Rail Operations

Safety and Maintenance Rail engineer

Rail Design Manager

Transportation Planner

Transportation Analyst

Researcher (Sustainable Construction Materials)

Transportation Operations Manager

Road Project Engineer/ Manager

Infrastructure Planner

Highway/ Road Engineer

Traffic Designer and Planner



Master of Science in

Logistics Engineering and Management

Career Prospects

Among the many extraordinary aspects of globalisation is the fluidity with which goods and materials move through their supply chains without glitches—a feat that is getting harder to achieve.

With customer demands changing in light of greater customer sophistication, higher sensitivity to environmental consciousness, and a dizzying array of technological innovations to enhance productivity, priorities of supply chains across different sectors are being redefined. At the same time, global supply chains are hard hit by network defragmentation and increasing global dynamics driven by geopolitical changes. At the intersection of a new revolution brought about by a slew of disruptive technologies, supply chain professionals have a lot to juggle – not only to survive, but also to thrive.

Anchored in scientific rigour and industry insights, the MSc in Logistics, Engineering and Management programme draws connections between traditional disciplines of logistics and multiple interrelated disciplines of environmental science, sociology, and economics that equip students with the foresight and business acumen to orchestrate strategies that are highly sensitive to the currents of the landscape the supply chain is operating in.

Whether it is operating the high-stakes logistics in healthcare industry or managing fast-moving consumer goods logistics in the consumer industry, graduates are not only knowledgeable of the unique characteristics of each industry, they are well equipped to command appropriate mathematical modelling approaches and computer-based solutions to integrate the transport, storage and handling of goods and products throughout the process of manufacturing, distribution, consumption and disposal.

Inventory Analyst

Process Engineer

Managing Director Logistics

Warehouse Design and Management Planner

Supply Chain Manager

Supply Chain Solutions Architect

Logistics and Distribution Engineer

Supply Chain Analyst

Procurement Specialist



Rail and Urban Transport

ADMISSION CRITERIA

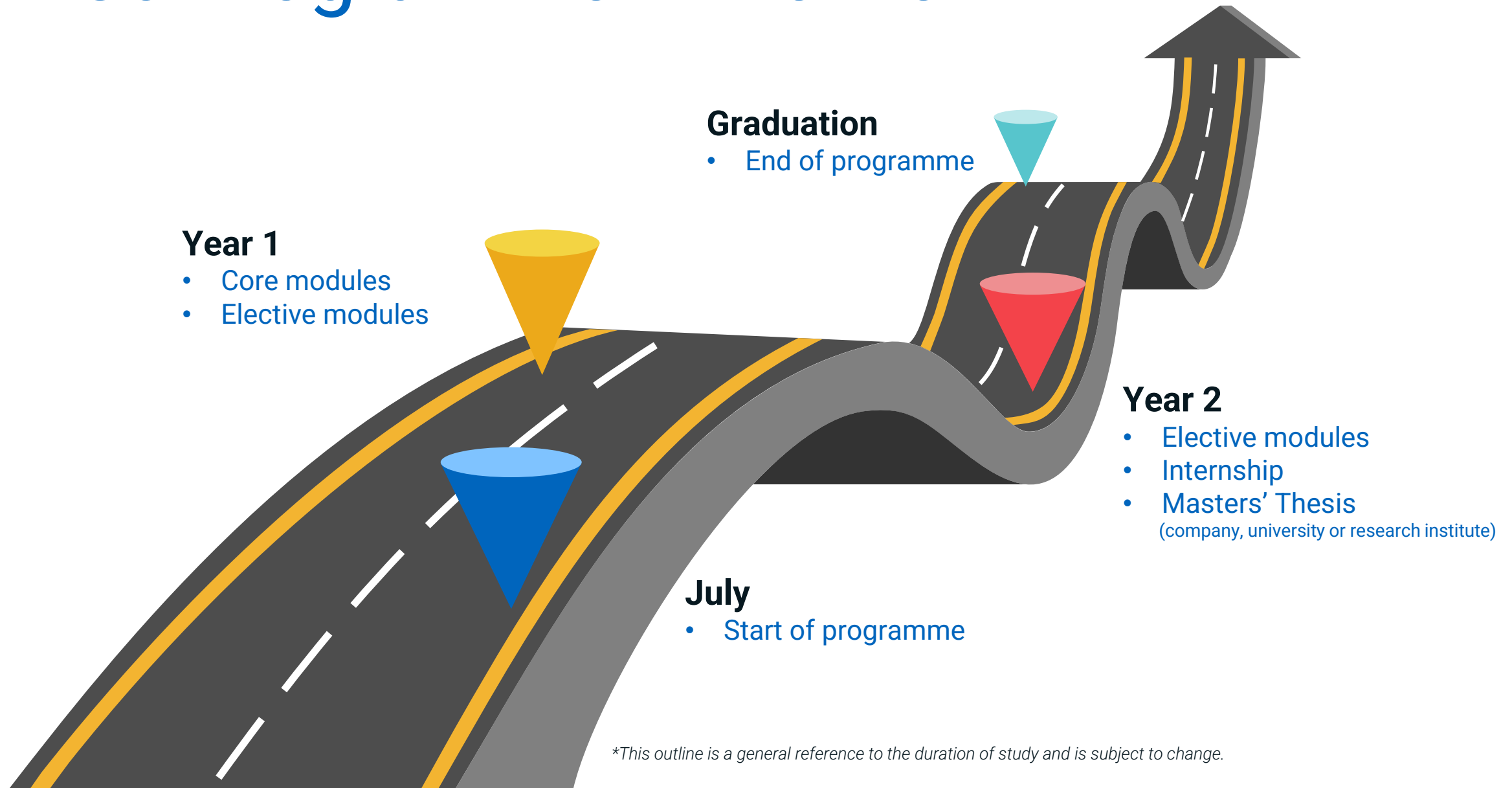
- Bachelor's degree in Civil/Communications/Electrical/Environmental/ Mechanical/ Transportation Engineering, Geodetics, Geography, Computer Science, Economics, Mathematics, Physical Sciences, Architecture or a closely related discipline
- Bachelor's degree certificate or enrolment letter / Academic transcripts or mark sheets, including the credits/grading system of your university
- State of purpose indicating the reason(s) you are interest in this programme
- Curriculum Vitae / Résumé
- Test of English as a Foreign Language (TOEFL) test score (≥ 88 for Internet-based test or International English Language Testing System (IELTS) test score (≥ 6.5 overall))
- Akademische Prüfstelle (APS) certificate for applicants who hold a degree from China, India and Vietnam

Logistics Engineering and Management

ADMISSION CRITERIA

- Bachelor's degree in Logistics, Supply Chain Management, Business Administration, Civil Engineering, Transportation Engineering, Electrical Engineering, Geodetics, Mechanical Engineering, Geography, Computer Science, Communications Engineering, Economics, Mathematics, Physical Sciences, Architecture, Environmental Engineering, Tourisms or a closely related discipline
- Bachelor's degree certificate or enrolment letter / Academic transcripts or mark sheets, including the credits/grading system of your university
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MSc Programme Timeline



**This outline is a general reference to the duration of study and is subject to change.*

Meet the Team

Speak to our expert team of faculty or admissions advisors, via Zoom where you can discover more about our courses and where will this take you to your next learning milestone.



Ms Lenny Christina

Admissions Advisor

India and ASEAN region

TUM Asia



Ms Pan Yu

Admissions Advisor

Greater China

TUM Asia

TUM Asia

Q & A

tum-asia.edu.sg

TUM Asia

Thank you.

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