



TRANSPORT & LOGISTICS

Professional Certificate / Graduate Diploma / Master of Science Degree

Technische Universität München

Founded in 1868 by King Ludwig II, Technische Universität München (TUM) has long established itself as a premier institute of higher learning in Germany. Ranked as Germany's #1 University in the 2011, 2012 & 2013 Shanghai Rankings (ARWU) & among the "Top 50 Universities"* in the world, TUM has maintained its reputation of being a provider of excellent academic education. Currently, TUM boasts of 13 faculties with more than 32,000 students (about 18 percent come from abroad), 507 professors and around 9,200 staff.

TUM's high regard for innovation has earned itself the reputation of being an institute that produces world-changing technologies. Some notable inventions from the TUM alumni include the refrigeration technology invented by Carl von Linde; the Dornier airplane by Claude Dornier; and the Diesel engine, invented by Rudolf Diesel. To date, TUM has seen a total of 13 Nobel Prize laureates come through its ranks, including distinguished chemists and physicists such as Ernst Otto Fischer and Rudolf Mößbauer.

Known as a premier address in Europe that encourages students to pursue innovation and entrepreneurship, a TUM degree is key to unlock a world of possibilities.

www.tum.de



TUM Asia

In 2002, Economic Development Board Singapore invited TUM to set up a campus in Singapore, under the Global Schoolhouse Initiative. TUM Asia became the first German academic venture abroad and now bears a decade of experience in providing top-class German education in Singapore. Though Asian in location, the academic model employed by TUM Asia is nevertheless German in its roots, with an emphasis on industry readiness and innovation.

Partnering fellow top universities such as National University of Singapore (NUS), Nanyang Technological University (NTU) and Singapore Institute of Technology (SIT), TUM Asia offers standalone and joint Master and Bachelor programmes designed to groom the next generation of entrepreneurs and leaders. TUM Asia is recognized by the Ministry of Education Singapore as an Institute of Higher Learning and is registered with the Council of Private Education in Singapore.

Moving forward, TUM Asia strives to continue to provide Master and Bachelor programmes that are industry-focused and in tune with the needs of the global economy.

www.tum-asia.edu.sg



WHY STUDY WITH US

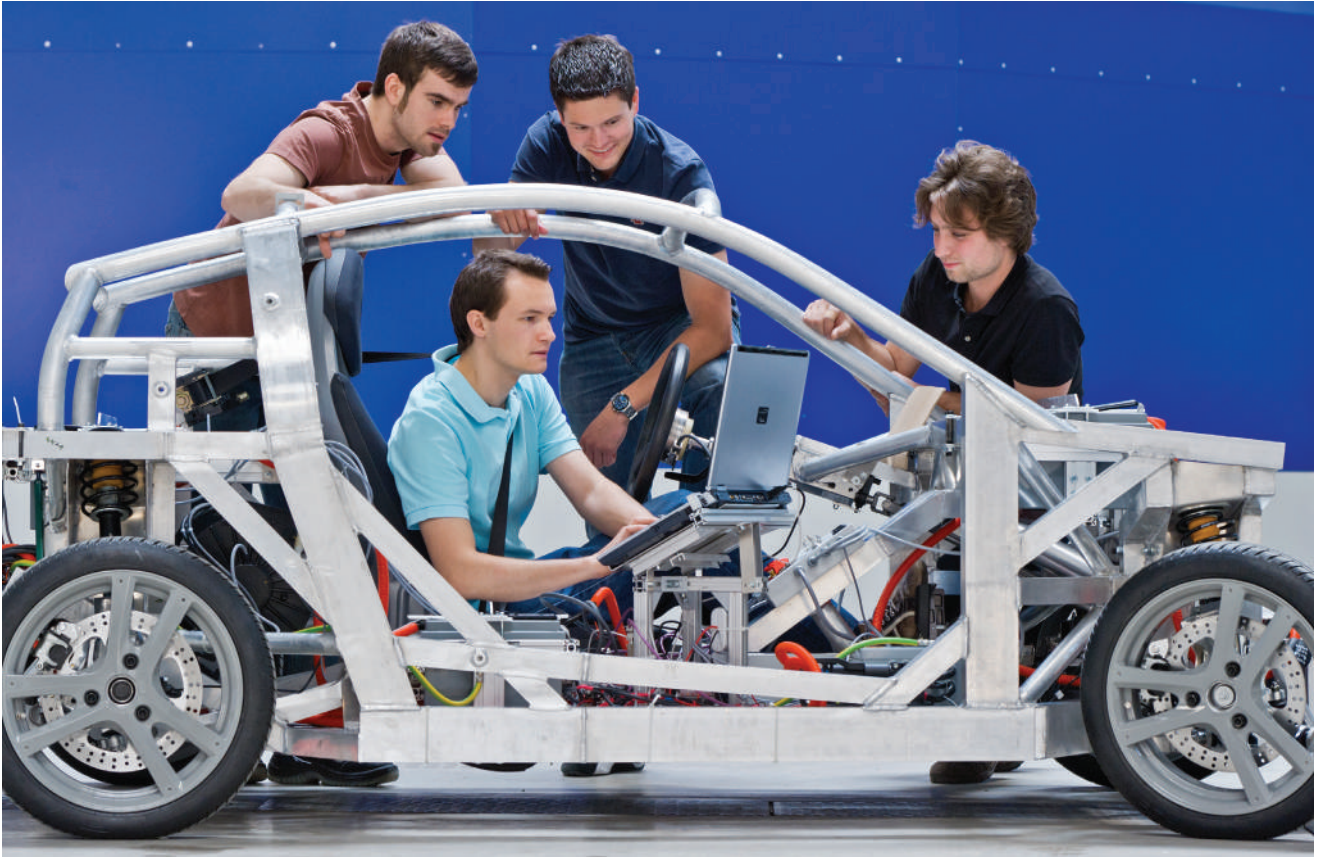
GERMANY'S NUMBER ONE UNIVERSITY

Crowned as the number 1 University in Germany for 3 years in a row (ARWU 2011, 2012 & 2013), the education and research at Technische Universität München (TUM) are of the highest quality. Lessons are conducted by professors from TUM, as well as experts from the industry. Therefore, students can expect to learn about the recent developments in research that are fused with the practicality of real-world solutions. TUM Asia also engages international lecturers on an exclusive basis for the lecture period in Singapore. Students will have direct contact with the lecturers throughout the duration of the programme.

THE ENTREPRENEURIAL SPIRIT

TUM's institutional strategy as an "Entrepreneurial University" was launched in 2006 with a comprehensive series of programmes. These initiatives aim to foster a culture of entrepreneurship by focusing on cutting-edge research and encouraging up-and-coming scientists to explore new frontiers. Beyond Europe, TUM Asia is situated strategically in Asia to further promote the entrepreneurial mind-set and equip professionals with leadership skills to combat future business challenges.






LIFELONG LEARNING

In today's knowledge-based economy, the ability to effectively apply the right knowledge is an important skill and cornerstone of every individual's career success. At TUM Asia, we boast a diverse enrolment of students hailing from over 28 countries and from all walks of life. Here, students get to experience a vibrant learning environment where they can learn effectively beyond the textbook. Exposure to a myriad of ideas and solutions synthesised across the diverse economic realities will equip students with the necessary knowledge and capability to face the challenges of a globalised world.

STRONG INDUSTRY NETWORK

Our close relations with internationally renowned companies allow us to understand the trends and demands within the industry and this has helped us to develop modules and programmes that are tailored to the needs of the industry. The University constantly strives to keep the module contents updated to ensure that students will be equipped with the latest industry-relevant knowledge and skillsets. Experts from leading industrial companies are also invited as guest lecturers to share their first-hand experiences and expertise. This is also a great opportunity for students to form valuable network links that will benefit their individual career in the future.

INDUSTRY OUTLOOK



In the 2012 “Logistics Performance Index”, the World Bank ranked Singapore as the number 1 Logistics Hub amongst 155 countries globally. Singapore’s strategic location in the heart of Southeast Asia and at the centre of major shipping routes has made it an important logistics hub and channel for world trade .

This has attracted many large logistics and supply chain management companies such as DHL, Kuehne + Nagel, Schenker, Toll and UPS to set up their regional headquarters here. It is apparent that the demand for skilled labour in this industry will only continue to increase. Companies are now constantly on the lookout for individuals who can not only adapt to the new waves of globalisation, but are also proactive in seeking new opportunities.

Excellent logistics conditions go hand-in-hand with novel transport and urban planning. With land as a major constraint, effective use of land and innovative transportation systems are vital to the growth of Singapore and the rest of the world in the coming years. Efficient public transportation needs to be strengthened and further developed upon, in order to overcome the challenges of an increasing population and limited land area.



The Singapore government is determined to build more extensive public transport system: to double the rail network to about 360km by 2030, so that eight in ten homes will be within a ten-minute walk of an MRT station. Thus, talented transport engineers will be in demand to ensure the implementation of effective and innovative modes of transportation systems – which are the solutions for the future.

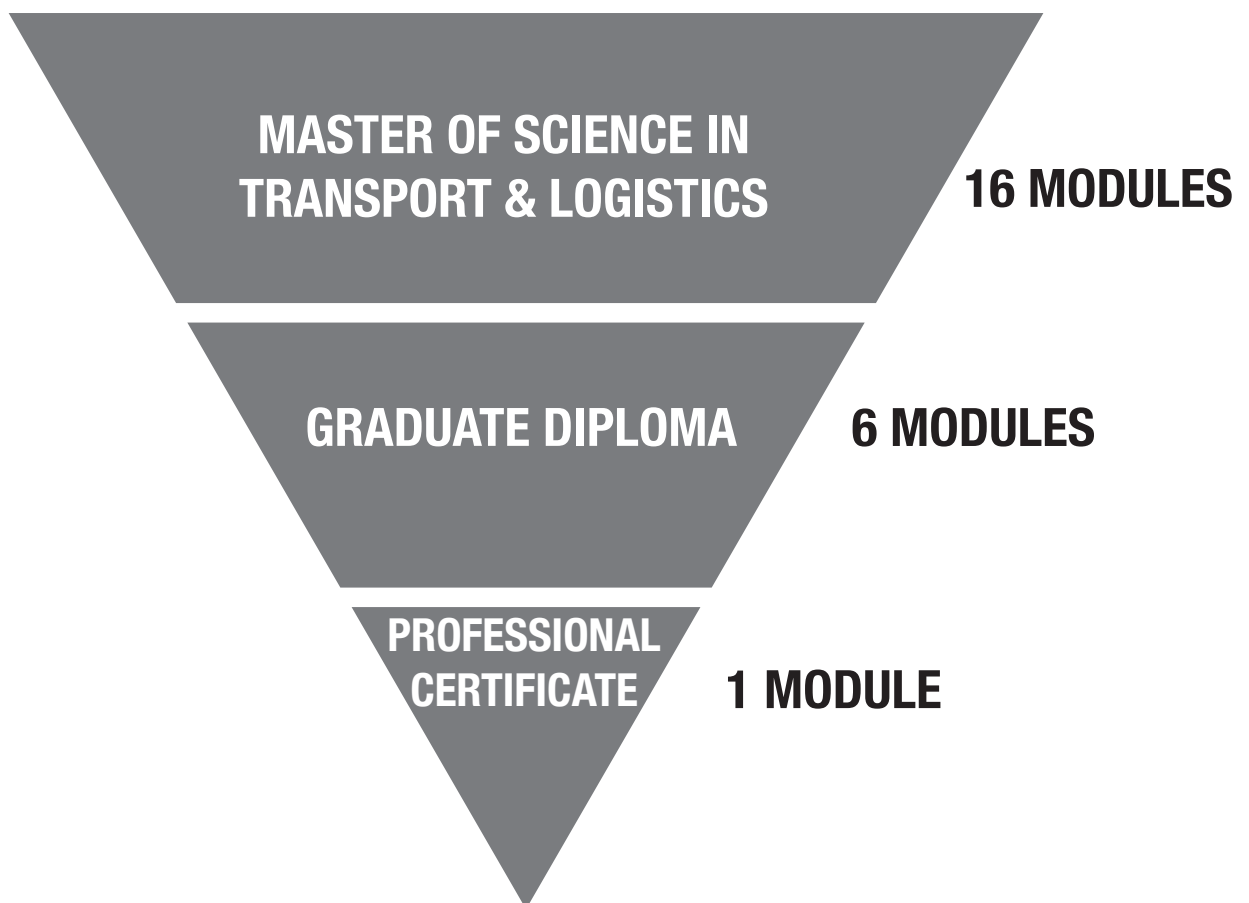
Moreover, Frost & Sullivan one of the top global business consulting firms, forecasts that Singapore's transportation and logistics market will continue to grow at a compound annual growth rate of 6.2 per cent to reach US\$40.79 billion in 2016. Hence, there will be a steady demand for skilled transport engineer who can ensure that Singapore is better positioned to serve customers not just in Asia, but also globally.

COURSE OVERVIEW

TUM Asia's Master of Science in Transport & Logistics is an established programme designed to equip graduates with the necessary knowledge and expertise to **excel in the transport & logistical sectors** of the global economy. It focuses on furnishing the student with an understanding of a diverse range of technologies and **state-of-the-art communication technologies**, thereby paving the way for graduates to implement **sophisticated & far-reaching solutions** to the ever-evolving transport & logistical challenges of today.

MADE TO SUIT YOUR NEEDS

Leveraging on the expertise of the Transport & Logistics programme, new offerings were launched to suit the needs of working professionals. **The 3 flexible options for professionals who are intending to pursue a higher education in Transport and Logistics are as such:**



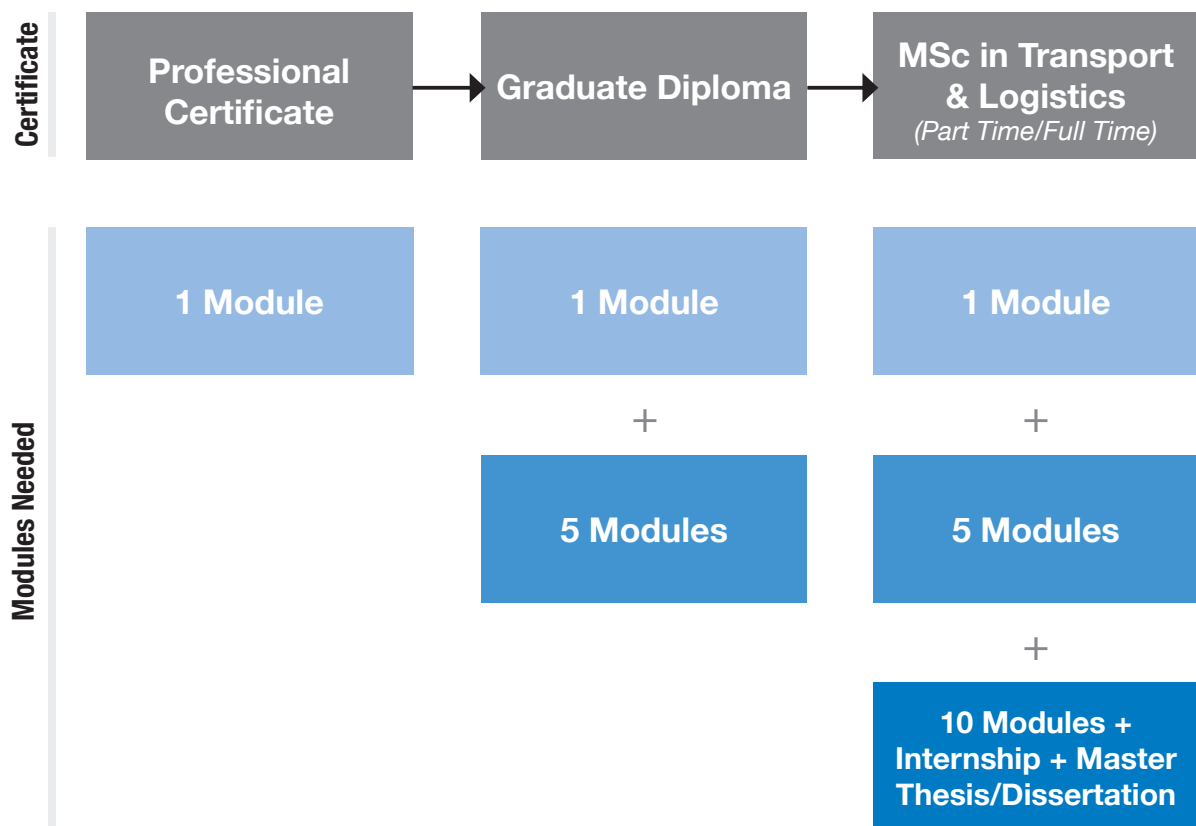
*One module = 45 contact hours

WHAT THIS MEANS

These new initiatives provide candidates with more flexibility in pursuing their higher education. Students are now able to take up classes that fit their schedules. Completed modules can be accumulated and transferred over, should students decide to upgrade to pursuing a Graduate Diploma or Master of Science degree after the completion of their Professional Certificates. Students are entitled to select the modules they are interested in, ensuring that they maximise their learning.

CUSTOMIZED LEARNING CURVE

*One module = 45 contact hours



FEES

	Professional Certificate	Graduate Diploma	MSc in Transport & Logistics (Part-Time)	MSc in Transport & Logistics (Full-Time)
No. of Modules	1	6	16	16
Total Tuition Fee	S\$1,750- S\$2,100*	S\$9,000*	€18,500*	€18,500*
Payment Method	At the start of study	At the start of study	Per Semester	Per Semester

*Fees are subjected to annual revision at the discretion of TUM Asia

PROFESSIONAL CERTIFICATE

TUM Asia offers a **Professional Certificate** for the successful completion of ONE module from the existing MSc in Transport & Logistics programme. Please refer to the Module Overview section (on Page 17) to view the list of modules you can choose from.

The Professional Certificate will be awarded to candidates who attend all lectures of that one module, and pass the examination at the end of the class successfully. Upon obtaining a Professional Certificate, the candidates would have been equipped with highly relevant skills offered in the respective module.

STRUCTURE

A Professional Certificate will be awarded after the completion of any ONE module from the MSc in Transport & Logistics programme. Candidates are to liaise directly with TUM Asia's Graduate Office to register for any module. A module will typically span across 2 weeks. Classes will be conducted on a **Full-time** basis (Mondays to Fridays, from 9AM – 4PM).



ADMISSION & REQUIREMENTS

Candidates seeking admission to the Professional Certificate programme must have:

- Recognised qualification (e.g. Bachelor degree) in a relevant field
Candidates will also be considered based on their working experience
- Proficiency in English language

Applicant whose native language or medium of instruction from previous studies (e.g. Bachelor degree) is not English, will have to submit at least one of the following:

- TOEFL: Minimum 605 for paper-based test or 88 for internet-based test or 234 for computer-based test
- IELTS: Overall IELTS results of at least 6.5

The above requirements are necessary since students studying for their Professional Certificate will attend lessons together with TUM Asia's Master students. This is to ensure that the teaching quality is maintained.

Only Singaporean, Permanent Residents (PR) and those with valid working passes are eligible to apply for this programme.

Admission to the Professional Certificate programme is subject to TUM Asia's enrolment committee's decision.

GRADUATION

TUM Asia will award a "Professional Certificate in ..." (based on the module that the participant takes) to participants who attended (fulfilled the minimum attendance requirement) and passed the examination of their chosen module.

FEE

The fee for a Professional Certificate (for ONE module only) is **S\$1,750 – S\$2,100***, to be paid prior to the start of the programme.

*Fees are subjected to annual revision at the discretion of TUM Asia.

GRADUATE DIPLOMA

The **Graduate Diploma** is a postgraduate academic qualification that can be pursued after a Bachelor degree. Mature candidates without Bachelor degrees may also be admitted to this programme based on their individual work experience (this is subject to approval from the Programme Management Committee). A Graduate Diploma is usually awarded by a University or a Graduate School, and it normally takes 2 terms to complete the programme. Interested candidates can expect to learn new specialised skills in the Transport & Logistics sector. Graduate Diploma holders with Bachelor degree can also progress to a Master degree on an accelerated pathway.

STRUCTURE

A Graduate Diploma consists of 6 modules. You can choose to have Graduate Diploma in either **Transportation** or **Logistics**. Please refer to the Module Overview section (on Page 17) to view the list of modules you can choose from for the respective Diploma. All modules are part of the existing MSc in Transport & Logistics programme. A module typically takes place over 2 weeks. Classes are conducted on a **Full-time** basis (Mondays to Fridays, from 9AM – 4PM).

The Graduate Diploma programme is offered on both **Full-time** and **Part-time** basis. A full time candidate is expected to complete the programme within 10 months, depending on the modules chosen for the course of study. A part time candidate is to complete the 6 modules within 3 years. A minimum requirement is that they must attend at least 2 modules per year.

After the successful completion of the Graduate Diploma, students can proceed to enrol in the Master programme at TUM Asia. The credit points which have been acquired during the Graduate Diploma will be transferred over to the student's account and be offset with the requirements for the Master programme.

ADMISSION & REQUIREMENTS

Candidates seeking admission to the Graduate Diploma programme must have:

- Recognised qualification (e.g. Bachelor degree) in a relevant field
Candidates will also be considered based on their working experience
- Proficiency in English language

Applicant whose native language or medium of instruction from previous studies (e.g. Bachelor degree) is not English, will have to submit at least one of the following:

- TOEFL: Minimum 605 for paper-based test or 88 for internet-based test or 234 for computer-based test
- IELTS: Overall IELTS results of at least 6.5

The above requirements are necessary since students studying for their Graduate Diploma will undergo lessons together with TUM Asia's Master students. This is to ensure that the teaching quality is maintained.

Only Singaporean, Permanent Residents (PR) and those with valid working passes are eligible to apply for this programme.

Admission to the Graduate Diploma programme is subject to TUM Asia's enrolment committee's decision.

GRADUATION

TUM Asia will award a "Graduate Diploma in Transport/Logistics" (based on the modules that the participant takes) to participants who attended and passed the examination of all their chosen 6 modules.

FEE

The fee for a Graduate Diploma (for SIX modules) is **S\$9,000***, to be paid prior to the start of the programme.

*Fees are subjected to annual revision at the discretion of TUM Asia.



MASTER OF SCIENCE

The **Master of Science** Programme in Transport & Logistics conferred by Technische Universität München (TUM), Germany, will provide graduates with the necessary knowledge and skills to successfully master the challenges faced in the area of transportation and logistics. Our students will learn how to analyse and assess the various traffic scenarios of the different transport modes and how to find appropriate solutions. This Master programme can be conducted on both **Part-Time** and **Full-Time** basis.

STRUCTURE

Both **Part-Time** and **Full-Time** Master of Science programmes share similar structure as they follow the same guidelines from TUM and the Bavarian Ministry of Education. However, students from the Part-Time programme will have an extended academic period (maximum of 8 semesters) to complete the credit requirements in order to graduate, as opposed to 3 semesters for the Full-Time programme students.

Students of the Part Time programme will attend the same classes as students in the Full-Time programme, but they will have extended academic semesters (usually double that of the Full Time programme) to pass all examinations and to complete their Master Thesis.

Students get to choose to specialise either in Transportation or Logistics by choosing relevant electives. Please refer to Module Overview section (on Page 17) for more information on the specialisation.

ADMISSION & REQUIREMENTS

Both **Part-Time** and **Full-Time** Master of Science programmes have the same admission requirements. Candidates seeking admission to the programme must have:

- Recognised qualification (e.g. Bachelor degree) in a relevant field
Candidates will also be considered based on their working experience
- Proficiency in English language

Applicant whose native language or medium of instruction from previous studies (e.g. Bachelor) is not English, will have to submit at least one of the following:

- TOEFL: Minimum 605 for paper-based test or 88 for internet-based test or 234 for computer-based test
- IELTS: Overall IELTS results of at least 6.5

Akademische Prüfstelle (APS) certificate is required for applicant whose education qualification is from China, Vietnam or Mongolia.



GRADUATION

The students of the Part Time programme will graduate with the students of the Full Time programme. The degree is conferred by TUM.

FEE

The total fee for a Master programme is **€18,500***, and to be paid by at the beginning of each semester.

*Fees are subjected to annual revision at the discretion of TUM Asia.

MODULE OVERVIEW

PROFESSIONAL CERTIFICATE

To attain Professional Certificate, candidates can choose to take any **ONE** module from Modules Available below.

GRADUATE DIPLOMA

To acquire a Graduate Diploma, candidates have to complete **SIX** modules. Those keen to specialise in Transportation have to take six Transportation modules and those keen to specialise in Logistics have to take six Logistics modules.

MASTER OF SCIENCE

Students in both **Part-Time** and **Full-Time** Master of Science programmes will have to complete **ALL** the modules listed below, including the cross-discipline module, soft skills, internship and Master's Thesis.

Based on the intended specialisation, students have to complete 4 elective modules – 3 from the preferred specialisation and 1 from the other specialisation area.

“The Transport & Logistics programme offered by TUM Asia combines a strong theoretical understanding with practical knowledge of the logistics chain. This was my first choice of study from the start, as I could not find anything else alike offered in Asia.

Vanessa Schell (Student, MSc in Transport & Logistics)

MODULES AVAILABLE**CREDITS**

Cross-discipline Module 6

General Topics for Transportation & Logistics

- Statistical Methods for Transportation and Logistic Processes 6
- Traffic Impacts, Evaluation of Transport and Logistic Processes 6

Transportation Modules

- Basics of Traffic Flow and Traffic Control 6
- Transport and Urban Planning 6
- Railway and Road Design 6

Logistics Modules

- Introduction to Business Logistics and Supply Chain Management 6
- Decision Support for Logistics Management 6
- Design and Applications of Material Handling Systems 6

Soft - Skills 6

Electives (3 of a Specialization, 1 of the other Specialization)

Elective 1: Transportation Specialization*

- Traffic Operation and Control (ITS) 5
- Transportation Modelling and Simulation Tools 5
- Public Transport Planning 5
- Airport and Harbour Design 5
- Urban Road Design 5
- Construction and Maintenance of Traffic Infrastructure 5

Elective 2: Logistics Specialization*

- Industrial Logistics 5
- Consumer Industry Supply Chain Management 5
- Logistics Service Provider (LSP) Management 5
- Health Care Logistics 5
- Green Supply Chain Management 5
- Construction Logistics 5

Internship 10

Master's Thesis 30

*Students are to take 4 electives with 3 coming from the specialisation area, and the remaining 1 from the other specialisation area

Please refer to the website: <http://tum-asia.edu.sg/admissions/graduate/course-structure/> for each of the module description.

HOW TO APPLY

Applications for our postgraduate programmes (Transport & Logistics) can be done via email:
admissions@tum-asia.edu.sg

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