UNIVERSIDADE DE MACAU
澳 門 大 學
UNIVERSIDADE DE MACAU
UNIVERSITY OF MACAU

FACULTY OF
SCIENCE AND TECHNOLOGY
科技學院

fst.um.edu.mo

目錄/Content

院長寄語
Dean's Message

須成忠
科技學院院長

Cheng-Zhong Xu
Dean, Faculty of Science and Technology

科技學院是澳大歷史最悠久及最具活力的學院之一。學院致力打造以學生為中心的教學以及追求卓越的研究成果。學院包含七個學系，包括土木及環境工程系、電腦及資訊科學系、電機及電腦工程系、機電工程系、數學、物理及化學系和海洋科學及技術系。並提供28個學位課程，其中包括7個學士、15個碩士和6個博士課程，為近2,300多名學生提 供教學指導。科技學院目前擁有超過1,000名本科生、近700名研究生及近600名博士生。

決定學院成就的指標不僅是其歷史或規模，而是其教學研的質量。目前科技學院所有的工程和計算機科學學士學位課程均獲香港工程師學會(HKIE)認證，並在全球獲得認可。此外，澳大的工程和計算機科學的基本科學指標(ESI)排名位列世界前1%。在泰晤士報高等教育(THE)2023年世界科目排名中，學院的工程學及計算機科學位列世界101名及151名。上海軟科公佈的2023年世界一流學科排名中，通訊工程(44位)、控制科學與工程(51-75位)、計算機科學與工程(51-75位)、電力電子工程(51-75位)、交通運輸工程(51-75位)及儀器科學(76-100位)六個學科成功躋身全球百大。在僅僅10年內，澳大已迅速成長為粵港澳大灣區最著名的大學之一。在全球年輕大學排名中也位列26名。

我們的教學目標不僅是提供全人教育以滿足本地需求，還希望透過眾多國際交流和合作計劃拓展學生們的世界視野。學院特別著重研究合作，相繼與世界著名大學合作推出'3+2'、'2+2'、'1+3'等計劃，爭取讓優秀的學生在大學初期就可參與頂尖研究，並直接進入世界頂尖的研究生院。

目前學院教職員八成以上畢業自世界知名大學，在全球擁有豐富的教學和優質研究經驗。他們不僅滿足育人的教育使命，還致力開拓更多創新性研究來貢獻世界。他們之中許多都是國內外久享盛譽的傑出學者或後起之秀。在他們的支持下，學院更為模擬與混合信號超大規模集成電路國家重點實驗室、智慧城市物聯網國家重點實驗室、應用物理與材料工程研究所提供全面的學術支持。學生及學者們還可透過數據科學中心、人工智能與機器人研究中心、認知與腦科學中心、區域海洋研究中心及應用數學研究中心享受跨學科研究的機會。

現在邀請您瀏覽這本小冊子，以了解更多關於學院的故事，同時也歡迎您親身體驗精彩又豐富的澳大校園生活。如果您是一名有志向及潛力的學生，相信澳門大學將成為您最響往的大學。科技學院會為您的未來做好萬全準備，而您將獲得豐碩的成果。

Faculty of Science and Technology (FST) is the oldest and one of the most vibrant faculties at the University of Macau (UM), dedicated to student-centric education and cutting-edge research in engineering and science. It consists of 7 departments: Civil and Environmental Engineering, Computer and Information Science, Electrical and Computer Engineering, Electromechanical Engineering, Mathematics, Physics and Chemistry and Ocean Science and Technology. It offers 28 degree programmes, including 7 bachelor, 15 master and 6 doctoral degree programmes that serve nearly 2,300 students. FST has more than 1,000 bachelor's students, nearly 700 master students and 600 doctoral students.

What truly defines the level of a faculty is not only its history and scale but also its teaching and research qualities. All of our bachelor's degree programmes in engineering and computer science are accredited by the Hong Kong Institution of Engineers (HKIE) and recognized worldwide. The university is among the top 1% in Essential Sciences Indicators (ESI) rankings in both Engineering and Computer Science. In 2023, Times Higher Education (THE) World University Rankings, the Engineering program of FST is ranked among the top 101, and the Computer Science program is ranked among the top 151. In the 2023 ranking of world-class disciplines released by Shanghai Ranking, six disciplines have made it to the global top 100. These disciplines are Telecommunication Engineering (ranked 44th), Automation & Control (ranked 51-75th), Computer Science & Engineering (ranked 51-75th), Energy Science & Engineering (ranked 51-75th), Transportation Science & Technology (ranked 51-75th), and Instrument Science & Technology (ranked 76-100th). UM has become one of the most significant universities in Guangdong-Hong Kong-Macao Greater Bay Area with less than 10 years. UM also becomes the top 26 in Young University Rankings.

Our educational goal not only matches local needs through our comprehensive training and placement network but also equips our graduates with global perspectives through exchange programmes and international research collaborations. FST particularly emphasizes the elite research programme, it launched various programmes with top universities in the world including '3+2', '2+2', '1+3' programmes, which allow outstanding students participating in preeminent research at an early stage of their studies and have direct admissions to some top graduate schools of the world.

More than 80% of the academic staff came from world-renowned universities with rich teaching experiences and quality research. They are committed not only to fulfilling the education mission for local and regional needs but also to advancing the knowledge of humankind by conducting ground breaking research. Many of them are highly accomplished scholars with national and international prestige or rising stars in their research fields. The faculty provides integral academic support for the State Key Laboratory of Analog and Mixed-Signal VLSI, the State Key Laboratory of Internet of Things for Smart City, as well as the Institute of Applied Physics and Materials Engineering at the university. Students and researchers also have the opportunities of inter-disciplinary research through Centre for Data Science, Centre for Artificial Intelligence and Robotics, Centre for Cognitive and Brain Sciences, Centre for Regional Oceans and Centre for Applied Mathematics.

You are invited to explore the faculty and all the exciting research projects by reading this booklet. You are also welcome to visit the beautiful UM campus in Hengqing Island. If you are a prospective student, I am certain that the University of Macau is the right place for you. FST will prepare you well for the future, and your endeavour will be rewarded.

學院里程碑
Faculty Milestones (1989 - Now)

" *Carrying on the past and forge into the future* "

1989 -1990
科技學院、土木、電機及電腦工程系成立
電腦及資訊、機電工程系成立
Establishment of FST
Civil Engin., Electrical & Computer Engineering
*Computer & Information Science,*
Electromechanical Engineering

1989-1990

1993-2002
1993 科技學院開辦研究生課程
2002 成立數學系
1993 1st Postgraduate Programme
2002 Establishment of Department of Mathematics

1993-2002

2011

2011
模擬與混合信號超大規模集成電路國家重點實驗室揭牌
Establishment of SKL-AMSV

2014
遷入新校園
應用物理及材料工程研究院成立
國家主席習近平到澳大考察
Move into new campus
Establishment of IAPME
President Xi Jinping visited UM

2014
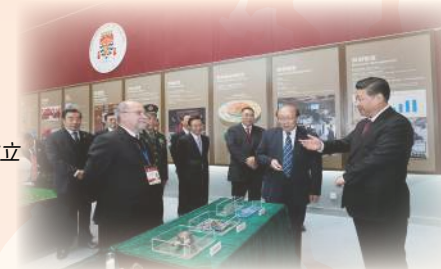
2016-2018
成立物理及化學系
智慧城市物聯網國家重點實驗室揭牌
Establishment of Department of Physics and Chemistry
Plaque unveiling for SKL-IoTSC

2016-2018

2019- 2020
成立數據科學研究中心
認知與腦科學研究中心
區域海洋研究中心
應用數學研究中心
人工智能與機器人中心
與中科院合作成立
粵港澳人機智能協同系統聯合實驗室
Establishment of
Centre for Data Science
Centre for Cognitive and Brain Sciences
Centre for Applied Mathematics
Centre for Regional Oceans
Centre for AI and Robotics
Joint Lab in Human-Machine Intelligent
Collaboration System
with the Institute of Oceanology of the
Chinese Academy of Sciences

2019-2020

2021- Now
國際排名節節上升
工程技術類 101-125（THE）
計算機科學 151-175 THE）
推出金融科技、物聯網碩士、人工智能、
機器人及海岸帶環境等全新碩士士課程
與華南理工合作雙學位課程
海洋科學及技術系成立
International ranking rising
Engineering & Technology 101-125 (THE)
Computer Science 151-175 (THE)
The launch of Master in FinTech,
Internet of Things, AI, Robotics and Coastal Environment
2+2 Program with SCUT
Establishment of OST

2021-Now

INTRODUCTION OF
FACULTY OF SCIENCE AND TECHNOLOGY

學院簡介

願景
Vision

以建立世界一流的科研和人才培養基地為願景。以響應世界快速變化及對數字經濟的需求。

To build a world class centre of excellence in both research and education, which responds swiftly to the change of the world, particularly to the needs of digital economy.

目標
Mission

科技學院面對世界快速變革和數字化轉型所帶來的機遇與挑戰，以發展為國際一流的科研和人才培養基地為目標。學院致力於以下目標：

- 致力於開展以學生為中心，以專業、責任、誠信及自學能力為要素的教育;

- 持續產出高質量、高影響力的研究成果，積極配合特區政府將澳門發展成智慧城市和世界旅遊休閒中心的目標，並將服務延伸至粵港澳大灣區;

- 面向國內外最新的需求，用一流的教學和研究成果服務社會。

Faculty of Science and Technology (FST) confronts the opportunities and challenges brought by the rapid change and digital transformation of the world. It aims to establish a world-class scientific research and talent training base. The Faculty is committed to carry out the following missions:

- Provide student-centric PRIS education (Professionalism, Responsibility, Integrity, Self-learning Ability)

- Provide high quality research with impact on disciplines, society and economy, response to the goals of Macao SAR Government in transforming Macao into a smart city, world centre of tourism and leisure centre, and extend its impact to Guangdong-Hong Kong-Macao Greater Bay Area and China.

- Respond to the demand of the country and the world, and serve the local community with professional teaching and research.

學院架構
Organisation Structure

學院包含7個學系及多個研究中心，為更好地支援科技發展、推動科技成果轉化，近年學院主導參與建設多個研究單元，包括:

- 智慧城市物聯網國家重點實驗室(澳門大學)
- 模擬與混合信號超大規模集成電路國家重點實驗室 (澳門大學)
- 應用物理及材料工程研究院
- 工程研究及檢測中心
- 人工智能與機器人研究中心
- 數據科學研究中心
- 認知與腦科學研究中心
- 區域海洋研究中心
- 應用數學研究中心
- 科學暨工程科普推廣中心

In addition to 7 departments, FST joined the establishment of numbers of research units to support the development of science and technology and promote the transformation of scientific and technological achievements in recent years, they are:

- State Key Laboratory of Internet of Things for Smart City (SKL-IoTSC)
- State Key Laboratory of Analog and Mixed-Signal VLSI (SKL-AMSV)
- Institute of Applied Physics and Materials Engineering (IAPME)
- Centre for Engineering Research and Testing (CERT)
- Centre for Artificial Intelligence and Robotics (CAIR)
- Centre for Data Science (CDS)
- Centre for Cognitive and Brain Sciences (CCBS)
- Centre for Regional Oceans (CRO)
- Centre for Applied Mathematics (CAM)
- Centre for Science & Engineering Promotion
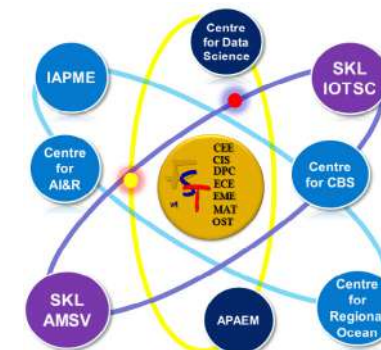
師資
Academic Staff

科技學院擁有來自世界各地不同領域的優秀教學及科研人才。八成教職員來自全球知名大學，當中有1位英國皇家科學院院士、1位葡萄牙科學院院士、1位歐洲科學院院士、5位國際電機電子工程師學會會士（IEEE）、1位美國機械工程師學會會士(ASME)、1位美國數學學會會士(AMS)、1位美國工業與應用數學學會會士（SIAM）及國際光學工程學會會士(SPIE)。

FST has many outstanding teaching and research talents from all over the world. More than 80% academic staff are from renowned universities world-wide, including 3 Members of Academy, 5 IEEE Fellows, 1 ASME Fellow, 1AMS Fellow, 1 SIAM Fellow and 1 SPIE Fellow.

學位課程
Degree Programme

理學士學位 Bachelor of Science
- 土木工程
- 計算機科學
- 電機及電腦工程
- 機電工程
- 數學 - 統計及數據科學
- 數學 - 數學與應用
- 應用物理及化學

- Civil Engineering
- Computer Science
- Electrical and Computer Engineering
- Electromechanical Engineering
- Mathematics (Statistics and Data Science Stream)
- Mathematics (Mathematics and Applications Stream)
- Applied Physics and Chemistry

學士學位
Bachelor of Science

碩士學位
Master of Science

所有學位
All Degrees

博士學位
Doctoral Degree

理學碩士學位
Master of Science
- 土木工程
- 土木工程 - 水力及環境工程
- 計算機科學
- 電子商貿技術
- 數據科學(人工智能) (協同創新研究院提供)
- 電機及電腦工程
- 機電工程
- 數學
- 金融科技
- 物聯網
- 海岸帶環境與安全 (新課程)
- 人工智能 (新課程)
- 機器人與自主系統 (新課程)
- 建造項目管理 (新課程)
- 智慧海洋技術 (新課程)

- Civil Engineering
- Civil Engineering - Hydraulics and Environmental Engineering
- Computer Science
- E-Commerce Technology
- Data Science with Specialization in Artificial Intelligence Applications (offered by ICI)
- Electrical and Computer Engineering
- Electromechanical Engineering
- Mathematics
- Financial Technology
- Internet of Things
- Coastal Environment and Safety *(New)*
- Artificial Intelligence *(New)*
- Robotics and Autonomous Systems *(New)*
- Construction Project Management *(New)*
- Smart Ocean Technology *(New)*

哲學博士學位 Doctoral Degree
- 土木工程
- 計算機科學
- 電機及電腦工程
- 機電工程
- 數學
- 應用物理及材料工程 (應用物理及材料工程研究院提供)

- Civil Engineering
- Computer Science
- Electrical and Computer Engineering
- Electromechanical Engineering
- Mathematics
- Applied Physics and Materials Engineering (offered by IAPME)

國際認證 Accreditation

科技學院的土木工程、計算機科學、電機及電腦工程、機電工程學士學位課程已通過了香港工程師學會全面評鑑。2011/2012 – 2024/2025學年入讀以上課程的學生，畢業後可申請成為香港工程師學會會員，從而取得世界認可的專業資格。此外，以上工程學位得到華盛頓協定的16個簽署國認可，而計算機科學學士學位更獲得首爾協定簽署國認可。

Bachelor of Science in Civil Engineering, Computer Science, Electrical and Computer Engineering and Electromechanical Engineering have received the full accreditation from HKIE (The Hong Kong Institution of Engineers). Students starting these programmes between academic year 2011/2012 and academic year 2024/2025 will be eligible to apply for HKIE membership upon graduation to receive professional qualifications recognised worldwide. Also, programmes in Engineering have been recognised by 16 signatories of the Washington Accord, and programme in Computer Science has been recognised by the Seoul Accord.

合作課程 Joint Programme

'3+2' 及'4+X' 計劃 Programmes
澳大科技學院與葡國里斯本大學高等技術學院、美國天普大學及石溪大學合作提供'3+2'課程:
- 可獲學位: 澳大本科及合作大學的碩士
- 時間: 5年 (3年在澳大 + 2年在合作大學)

'4+X' 計劃，澳大畢業後，有機會保送入讀世界頂尖大學

FST launched '3+2' programmes with Instituto Superior Técnico, Universidade de Lisboa (IST), Temple University and the State University of New York at Stony Brook:
- Degree: UM Bachelor + Master of Partner University
- Duration: 5 years (3 years at UM + 2 years at Partner University)

Direct Admissions to a top overseas university for participants of the '4+X' programme

'2+2' 聯培計劃 Joint Programme
澳大科技學院及華南理工大學工學學士學位合作提供'2+2'課程:
- 可獲學位: 澳大本科及華南理工大學工學本科
- 時間: 4年 (2年在澳大 + 2年在華南理工大學)
- 對象: 土木及環境工程系學生

FST has established a '2+2' programme with South China University of Technology (SCUT):
- Degree: UM Bachelor + + SCUT Bachelor
- Duration: 4 years (2 years at UM + 2 years at SCUT)
- Target: Students in Department of Civil and Environmental Engineering

'1+3' 碩博課程 Master & PhD Programme
澳大與倫敦帝國理工學院、布里斯托大學及愛丁堡大學合作提供'1+3'碩博課程:
- 可獲學位: 澳大博士及合作大學碩士
- 時間: 4年(3年在澳大+1年在合作大學)
- 對象: 優秀澳大研究生

UM has established a '1+3' programme with Imperial College London, University of Bristol and University of Edinburgh:
- Degree: UM PhD + Master of Partner University
- Duration: 4 years (3 years at UM + 1 year at Partner University)
- Target: Excellent UM Master Students

更多合作課程
More Joint Programme

發表數量 Yearly Number of Publications

科技學院過去12年的學術論文發表數量不斷倍增。根據Web of Science統計，學院的論文由2010年96篇升至2022年1,298篇，增幅約10多倍。其中9成文章為SCI Q1及Q2區，不少文章更在國際會議上奪最佳論文獎。

Since the past 10 years, the number of FST research papers has increased dramatically. According to the statistics in Web of Science, the number of FST papers rose 10 times from 96 in 2010 to more than 1,298 in 2022. Among them, 90% of the articles are categorized as SCI Q1 and Q2, many of these won the best paper awards at international conferences, including VRCAI 2018, APCCAS, 2019, APPEEC 2019, ICTA 2019, RFIC 2021, Socc 2021, RCAR 2021.
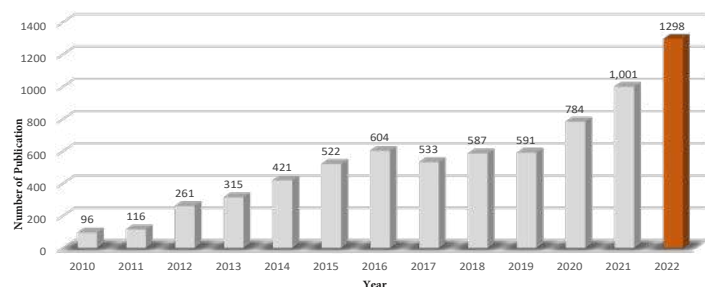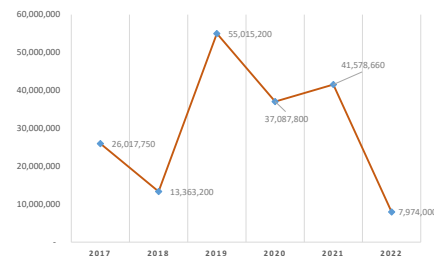

Data Source:
Web of Science Statistics (2023)

獲澳門科學技術發展基金支持的項目及資金 Projects and Funds supported by FDCT
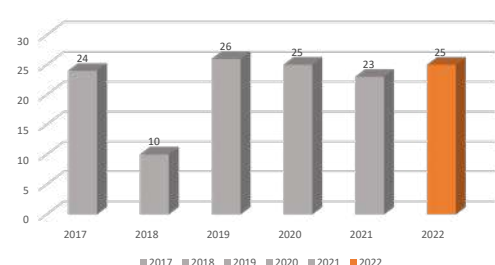
獲澳門科學技術發展基金支持的項目數量
Number of Projects funded by FDCT (2017 - 2022)

獲澳門科學技術發展基金資助的金額
FDCT Funding Amount (2017 - 2022)

獎項 Awards

澳大囊括2022年澳門特別行政區科學技術獎，澳門大學獲超過六成、共14項科學技術獎，更包攬全部技術發明獎獎項。此外，澳大研究生的表現也非常出色，共15名博士生及5名碩士生獲頒研究生科技研發獎。

22項科學技術獎中，澳大獲得14項，分別是自然科學二等獎4項、三等獎3項；技術發明二等獎2項、三等獎4項及科技進步三等獎1項。

UM has won 14 awards, accounting for over 60 per cent of all the awards presented this year, including winning all awards in the Technological Invention Award category. UM's postgraduate students have also performed very well, with 15 doctoral students and five master's students receiving the Scientific and Technological R&D Award for Postgraduates.

Out of the 22 prizes, UM has received 14 prizes, including four second prizes and three third prizes in the Natural Science Award category; two second prizes and four third prizes in the Technological Invention Award category; as well as a third prize in the Science and Technology Progress Award category. No first prize was awarded this year.

世界排名 World Ranking

在泰晤士報高等教育 （THE） 2024年公佈的世界科目排名中，澳門大學整體排名193，學院的工程學及計算機科學位列世界126名及151名。工程學、計算機科學、化學、材料科學等進入基本科學指標資料庫（ESI）前1%之列。上海軟科公佈的2023年世界一流學科排名中，通訊工程(44位)、控制科學與工程(51-75位)、計算機科學與工程(51-75位)、電力電子工程(51-75位)、交通運輸工程(51-75位)及儀器科學(76-100位)六個學科成功躋身全球百大。
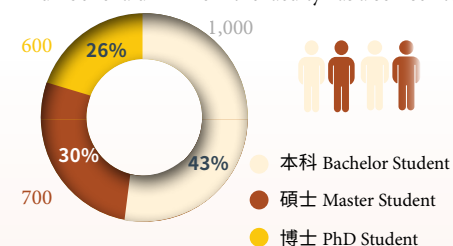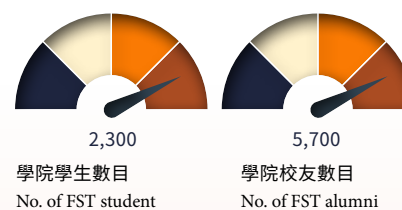
In Times Higher Education (THE) World University Rankings 2024, the overall ranking of UM is 193, Engineering programme of FST is ranked among the top 101 and Computer Science programme is 151. It is among the top 1% in Essential Sciences Indicators (ESI) rankings in ten subjects. six disciplines have made it to the global top 100. These disciplines are Telecommunication Engineering (ranked 44th), Automation & Control (ranked 51-75th), Computer Science & Engineering (ranked 51-75th), Energy Science & Engineering (ranked 51-75th), Transportation Science & Technology (ranked 51-75th), and Instrument Science & Technology (ranked 76-100th).

193
University
World Ranking

126-151th
Engineering

151-175th
Computer
Science
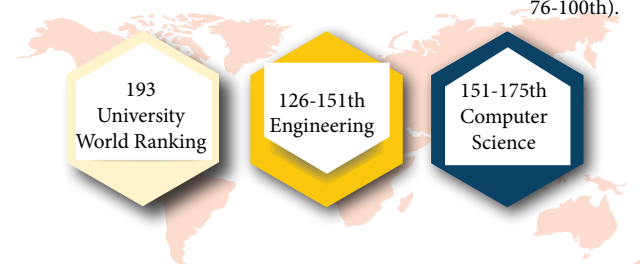
學生人數 Number of Students

除著澳大不斷發展壯大，科技學院學生人數過去數年年不斷攀升。 截至2023/2024學年，學院學生總數已攀升至2,300多名。其中本科、研士及博士生人數為1,000多名、近700名研究生及近600名博士生，而學院校友數目也升至5,700多名。

With the continuous development and growth of the University of Macau, the Faculty of Science and Technology has seen a steady increase in student enrollment over the past few years. As of the 2023/2024 academic year, the total number of students in the faculty has surpassed 2,300. Among them, there are over 1,000 undergraduate students, nearly 700 master's students, and almost 600 doctoral students. The number of alumni from the faculty has also risen to over 5,700.

2,300
學院學生數目
No. of FST student

5,700
學院校友數目
No. of FST alumni

本科 Bachelor Student
碩士 Master Student
博士 PhD Student

學生升學及就業 Further Education and Employment Status

科技學院畢業生的升學及就業情況十分理想，不少繼續深造的畢業生獲倫敦帝國理工學院、愛丁堡大學、香港大學、墨爾本大學、南加州大學及新加坡國立大學等頂尖大學取錄。

就業方面，近半澳大畢業的博士在高校任教，此外，澳門近80%的機電工程師，50%電機工程師及25%的土木工程師自澳大畢業。

FST graduates' employment and further studies are very encouraging. Graduates who choose to pursue further studies were admitted by top universities such as Imperial College London, University of Edinburgh, University of Hong Kong, University of Melbourne, University of Southern California, and National University of Singapore.

In regards of employment, nearly half of the Ph.D. graduates from UM are teaching in universities. In addition, nearly 80% of the mechanical and electrical engineers, 50% of the electrical engineers and 25% of the civil engineers in Macau are graduated from UM.

Internship and Career Opportunities

實習和就業機會

實習詳情
Details of Internship Opportunities

For inquiries about internship details, please contact FST General Office:

查詢實習詳情，可聯絡科技學院辦公室:

Email: fst.enquiry@um.edu.mo
Phone Number: (853)8822 4963
Website:https://www.fst.um.edu.mo/academics/internships/internship-and-career-opportunities/

科技學院現與超過60間企業和政府部門建立合作關係，為學生提供實習機會。透過實習可以讓學生盡早了解特定的行業行情。學生可以選擇自己感興趣的職業領域並與專業人士一同工作，從內部了解該行業並決定是否適合自己未來的路向，協助學生探索未來的職業、培養他們的領導力和發展技能、協助他們建立網絡以及豐富個人履歷，有助學生在就業市場上脫穎而出，展示實際能力和職業潛力。

The Faculty has established partnerships with over 60 companies and government departments to provide internship opportunities for students. Through internships, students can gain early insights into specific industry trends. They have the opportunity to choose their interested career field and work alongside professionals, gaining an internal understanding of the industry and determining if it aligns with their future path. Internships also assist students in exploring future careers, cultivating their leadership abilities, developing skills, building networks, and enriching their resumes. These experiences enable students to stand out in the job market and demonstrate their practical abilities and professional potential.

成為科技學院企業實習廠商
To be our Internship Partnership

For more details or enquiries, please contact Dr. Wong

詳情或了解更多, 可聯絡王博士

Email: hcwong@um.edu.mo
Phone Number: (853) 8822 4292
Website:https://www.fst.um.edu.mo/academics/internships/internship-and-career-opportunities/

實習機構 Companies with Internship Opportunities

Alibaba Group 阿里巴巴集團 / HUAWEI / Tencent 騰訊 / Bai 百度 / 澳電 cem / 中國建築工程(澳門)有限公司 CHINA CONSTRUCTION ENGINEERING (MACAU) CO., LTD. / CTM 澳門電訊 / SIEMENS / LECM 澳門土木工程實驗室 LABORATÓRIO DE ENGENHARIA CIVIL DE MACAU Civil Engineering Laboratory of Macau / BoardWare / 澳門國際機場專業股份有限公司 CAM Soc. do Aeroporto Internacional de Macau S.A.R.L. Macau International Airport Co. Ltd. / HITACHI Inspire the Next / Honeywell / 澳門自來水 MACAO WATER

更多實習機構可瀏覽
More Companies: https://www.fst.um.edu.mo/academics/internships/internship-and-career-opportunities/

土木及環境工程系

Department of Civil and Environmental Engineering

土木及環境工程系成立於1989年，開設本科、研究生及博士課程。學系涵蓋了土木環境工程的重要領域，如結構工程、岩土工程、環境工程、交通、水資源和城市災害預防等。學系還配備了許多擁有先進設施和工程軟件工具的實驗室，供學生和學術人員開發他們的課程項目、畢業設計項目和研究項目。

CEE was founded in 1989 which provides undergraduate, postgraduate and doctoral programmes, covering the main aspects of civil and environmental engineering, such as structural engineering, geotechnical engineering, environmental engineering, transportation, water resources and urban disaster prevention. CEE has equipped with many laboratories with advanced facilities and engineering software tools for its students and academic staff to develop course projects, final year projects and R&D projects.

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研究領域 Research Areas

五大研究領域
5 Research Areas

- 水力學 Hydraulics
- 海洋 Ocean
- 動力學和結構 Dynamics & Structure
- 岩土工程 Geotechnics
- 環境 Environment

實驗室 Laboratories

- 電腦輔助土木工程設備
- 建築材料實驗室
- 動力與監測實驗室(IoTSC)
- 環境生物技術實驗室
- 環境工程實驗室
- 岩土力學實驗室
- 土力模型與波測實驗室
- 岩土工程實驗室
- 水力實驗室
- 隨機力學實驗室
- 材料力學實驗室
- 結構實驗室
- 測量學實驗室
- 薄膜結構實驗室
- 運輸工程實驗室

- Computer Aided Civil Engineering Facilities
- Construction Materials Laboratory
- Dynamics and Monitoring Laboratory (IoTSC)
- Environmental Biotechnology Laboratory
- Environmental Engineering Laboratory
- Geomechanics Laboratory
- Geo-modelling & Wave Laboratory
- Geotechnical Engineering Laboratory
- Hydraulics Laboratory
- Stochastic Mechanics Laboratory
- Strength of Materials Laboratory
- Structures Laboratory
- Surveying Laboratory
- Thin-Walled Structure Laboratory
- Transportation Engineering Laboratory

獎項 Award

UM research team wins third prize at metaverse hackathon
澳大研究團隊於元宇宙編程馬拉松獲季軍

UM students won grand prize at "National Structure Design Contest on Information Technology for College Students"
澳大學生於"全國大學生結構設計信息技術大賽"獲特等獎

UM students get "Guangdong-Hong Kong-Macau Outstanding Graduates Award in Civil Engineering" in 2021
澳大生獲2021年度"粵港澳大灣區高校土木工程專業優秀本科畢業生獎"

電腦及資訊科學系簡介

Department of Computer and Information Science

學系成立於1990年，提供優質的本科、研究生及博士課程。涵蓋現代計算機和信息科學的不同方面，旨在培養學生設計、開發、管理計算機系統的技術和能力。電腦及資訊科學系擁有多個實驗室、先進的計算設備及豐富的軟件工具予學生和研究員。

CIS was established in 1990. It provides quality undergraduate, postgraduate and doctoral programmes, covering the main aspects of modern computer and information science. The department aims to build up students' skills of designing, developing, administrating computer systems and software. CIS has many laboratories with advanced computing facilities and rich software tools for its students and researchers.

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研究領域 Research Areas

人工智能
Artificial Intelligence

多媒體計算
Multimedia Computing

五大研究領域
5 Research Areas

網絡及系統
Network & Systems

數據科學
Data Science

電子商務
E-Commerce

實驗室 Laboratories

- 大數據處理實驗室
- 雲計算與分佈式系統實驗室
- 電腦圖形及多媒體實驗室
- 數據分析及協同計算實驗室
- 數據驅動智能系統實驗室
- 分佈系統實驗室
- 電子商貿技術實驗室
- 圖像處理與模式識別實驗室
- 知識庫與數據工程實驗室
- 動態跟蹤實驗室
- 自然語言處理與中葡機器翻譯實驗室
- 智能環境與控制系統實驗室
- 視覺與圖像處理實驗室
- 視覺信息處理實驗室

- Big Data Processing Laboratory
- Cloud Computing and Distributed Systems Laboratory
- Computer Graphics and Multimedia Laboratory
- Cyber and Crypto Laboratory
- Data Analytics and Collaborative Computing Laboratory (DACC)
- Data-Driven Intelligent Systems Laboratory
- Distributed Systems Laboratory
- E-Commerce Technology Laboratory
- Image Processing and Pattern Recognition Laboratory
- Knowledge and Data Engineering Laboratory
- Motion Capture Laboratory
- Natural Language Processing & Portuguese-Chinese Machine Translation Laboratory (NLP^{2}CT)
- Smart Environment & Cybernetics System Laboratory
- Vision and Image Processing Laboratory
- Visual Information Processing Laboratory

獎項 Award

FST's image tampering detection technology wins championship at international AI competition, team sponsored by Alibaba to participate in research project
澳大圖像篡改檢測技術獲國際AI賽冠軍 阿里巴巴贊助參與研究專案

UM and Alibaba Damo Academy win first prizes at top machine translation competition
澳大聯同阿里達摩院於世界頂級機器翻譯大賽奪冠

The autonomous driving technology of UM won the 2nd prize in the international algorithm competition and the result was published in the top conferences
再獲新突破！ 澳門大學自動駕駛技術在國際高端算法比賽榮獲亞軍，論文更獲頂尖會議發表

電機及電腦工程系簡介

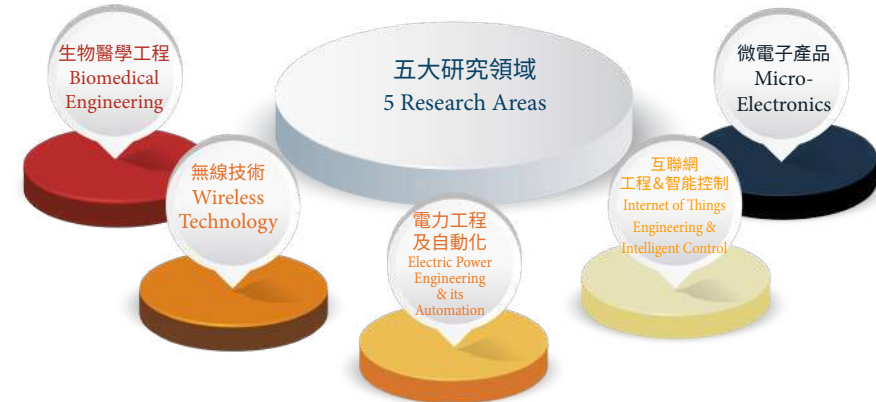## Department of Electrical and Computer Engineering

電機及電腦工程系前身為電氣與電子工程系，1989年以葡萄牙語為基礎而成立。為回應社會不斷變遷，後來將電力、微電子、電氣與計算機工程相結合。如今電機與電腦工程是一個高科技領域，如模擬和數字電路、微電子、微處理器、存儲設備、信號處理和數據通信等。學系為學生提供電氣、電子和計算機領域的知識和技能，包括電氣建築服務、鐵路電氣化系統、電力系統、微電子集成電路設計、生物醫學工程、無線通信和物聯網工程及智能系統等，以支持經濟增長和技術創新。

ECE was originally founded as Electrical Engineering in 1989 based on Portuguese curricula. In order to adapt itself to the needs of Macao, the department has combined from Power to Microelectronics into Electrical and Computer Engineering. ECE nowadays is a high-tech field, including analogue and digital circuitry, microelectronics, microprocessors and memory devices, signal processing and data communications, etc. The department equips students with knowledge and skills for brilliant careers in the areas of electrical, electronics and computers, including electrical building services, railway electrification systems, power systems, microelectronic integrated circuit design, biomedical engineering, wireless communication as well as Internet of Things Engineering and Intelligent Control, supporting economic growth and technological innovation.

教職員 Academic Staff (updated in Aug 2023)

研究領域 Research Areas

- 生物醫學工程 Biomedical Engineering
- 微電子產品 Micro-Electronics
- 無線技術 Wireless Technology
- 五大研究領域 5 Research Areas
- 電力工程及自動化 Electric Power Engineering & its Automation
- 互聯網工程&智能控制 Internet of Things Engineering & Intelligent Control

實驗室 Laboratories

- 模擬電子實驗室
- 天線和電磁波實驗室
- 自動系統實驗室
- 生物醫學工程實驗室
- 生物醫學影像實驗室
- 控制系統實驗室
- 智能電子健康保健工程實驗室
- 電力工程實驗室
- 電機驅動實驗室
- 電子工作室
- 嵌入式系統實驗室
- 激光與光學實驗室
- 測量及儀器實驗室
- 基於傳感器的協作機器人實驗室
- 無線技術實驗室

- Analog Electronics Laboratory
- Antenna and Electromagnetic-Wave Laboratory
- Automation Laboratory
- Biomedical Engineering Laboratory
- Biomedical Imaging Laboratory (BIG)
- Control Laboratory
- E-Home Healthcare Engineering Laboratory
- Electric Power Engineering Laboratory
- Electrical Machines and Drives Laboratory
- Electronics Workshop
- Embedded Systems Laboratory
- Laser and Optics Laboratory
- Measurement and Instrumentation Laboratory
- Sensor-based Cooperative Robotics Laboratory (SCORE)
- Wireless Communication Laboratory

獎項 Award

ECE research team receives Gold and Bronze Awards at the 48th Geneva International Exhibition of Inventions
電機及電腦工程系團隊於第48屆日內瓦國際發明展獲金獎及銅獎

UM wins awards at national contest of AI application in power dispatching
澳大於全國電力AI應用大賽獲殊榮

UM develops multimode CMOS vision sensor chip
澳大團隊成功研發多功能視覺傳感器芯片

機電工程系簡介

Department of Electromechanical Engineering

機電工程系成立於1990年，課程著重機械工程，同時教育學生利用機器人、車輛和智能系統、流體流動和傳熱、先進材料和制造在機械工程的實際應用，如智能建築服務、工程系統管理、運輸車輛、機器人和智能系統等。大多數畢業生在電氣和機械工程諮詢公司、屋宇設備行業、政府部門、公共組織和研究機構中都有出色的表現。此外，部分畢業生則在世界各地的知名大學進修研究生課程。

The Department of Electromechanical Engineering (EME) was established in 1990. The curriculum emphasizes mechanical engineering (ME) while educating students to take advantage of robotics, vehicles, intelligent systems, fluid flow and heat transfer, advanced materials and manufacturing for practical applications in ME like smart building services, engineering systems management, transportation vehicles, robots and smart systems, etc. Graduates of EME have brilliant professional careers in electrical and mechanical engineering consultancy firm, building services industry, government departments, public organisations and research institutes. Some graduates have pursed their postgraduate studies at renowned universities around the world.
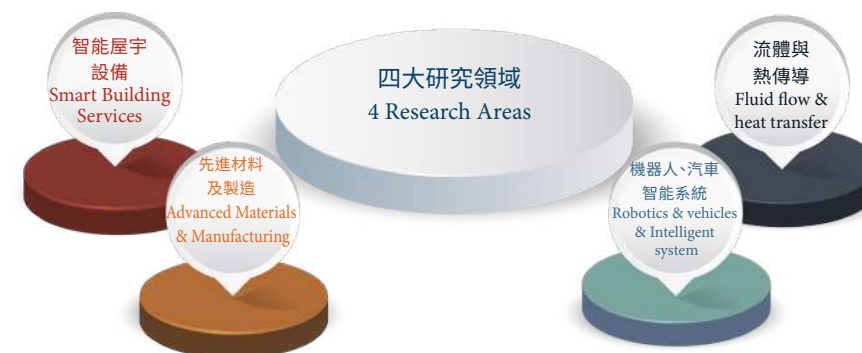
實驗室 Laboratories

- 汽車工程實驗室
- 電腦輔助工程實驗室
- 腐蝕及金相實驗室
- 電能應用實驗室
- 工業工程實驗室
- 創新設計與集成製造實驗室
- 激光加工實驗室
- 機械工場
- 機械分析與測試實驗室
- 機電一體化實驗室
- 掃瞄式電子顯微鏡實驗室
- 智能與微納系統實驗室
- 柔性傳感器、執行器、機器人實驗室
- 太陽能實驗室
- 熱力工程實驗室
- 摩擦學實驗室

- Automotive Engineering Laboratory
- Computational Engineering Laboratory
- Corrosion & Metallography Laboratory
- Electricity Utilization Laboratory
- Industrial Engineering Laboratory
- Innovative Design and Integrated Manufacturing Laboratory
- Laser Processing Laboratory
- Machine Workshop
- Mechanical Characterisation and Testing Laboratory
- Mechatronics Laboratory
- Scanning Electron Microscope (SEM) Laboratory
- Smart and Micro/Nano Systems Laboratory
- Solar Energy Laboratory
- Thermal Engineering Laboratory
- Tribology Laboratory

研究領域 Research Areas

智能屋宇設備
Smart Building Services

先進材料及製造
Advanced Materials & Manufacturing

四大研究領域
4 Research Areas

流體與熱傳導
Fluid flow & heat transfer

機器人、汽車智能系統
Robotics & vehicles & Intelligent system

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獎項 Award

UM students win first prize at 'Challenge Cup' national competition for technological projects
澳大學生獲"挑戰杯"全國科創競賽一等獎

UM researcher develops robotic insects with ultrahigh agility
澳大學者成功研發高敏捷電子昆蟲機械人

UM FST students' smart milk tea vending machine wins first prize at national competition
澳大科技學院學生智能奶茶售賣機奪全國賽一等獎

數學系簡介
Department of Mathematics

數學系成立於2002年，課程著重於數學和統計學的多個領域，以回應本地社會的人才需求，包括計算數學、科學計算、調和分析、概率與統計、數學物理以及金融數學等。在澳大及學院不懈的支持下，數學系出版的數量和質量在近年迅速增長。2020年成立的應用數學研究中心，將協調和支持數學與交叉學科的科學研究，並承接更多大型研究。學生畢業後在政府部門、中學及大型企業工作中皆獲出色的表現。

The Department of Mathematics (MAT) was established in 2002. The curriculum focuses on various fields of mathematics and statistics, including computational mathematics, scientific computing, harmonic analysis, probability and statistics, mathematical physics, and financial mathematics so as to respond to the talent demands of the local society. With the unremitting support of UM and FST, the quantity and quality of publications published by MAT have grown rapidly in recent years. The Centre for Applied Mathematics which established in 2020, will coordinate and support scientific research in mathematics and interdisciplinary subjects and undertake more large-scale research. Our students have achieved outstanding performance in government departments, secondary schools and large enterprises after graduation.

實驗室 Laboratories

- 數學實驗室 1 Mathematics Laboratory 1
- 數學實驗室 2 Mathematics Laboratory 2
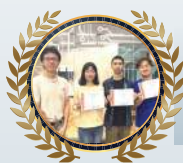- 應用數學研究中心 Centre for Applied Mathematics

獎項及重要活動 Award and Important Event

UM fresh graduate doctoral student achieves a teaching position at world-renowned university
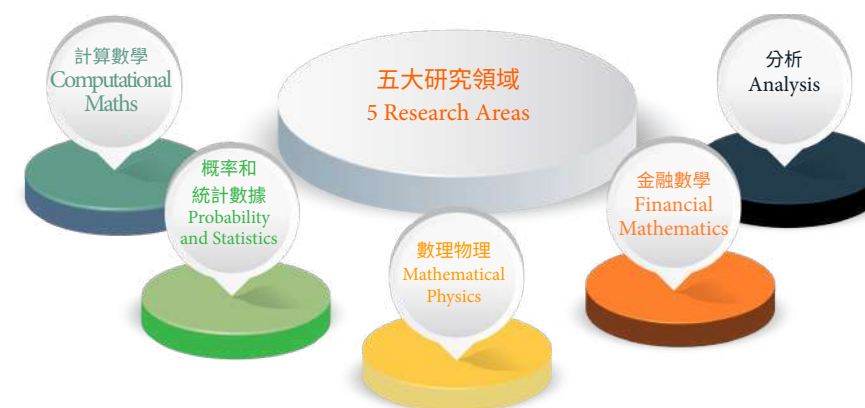澳大博士生畢業即獲國際知名大學

UM holds the first Mathematics Day in Greater Bay Area
澳大科技學院首辦大灣區數學日促交流合作

UM students win first prize at MCM/ICM 2021
澳大學生於美國國際大學生數學建模競賽奪一等獎

研究領域 Research Areas

計算數學 Computational Maths

五大研究領域 5 Research Areas

分析 Analysis

概率和統計數據 Probability and Statistics

數理物理 Mathematical Physics

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UM holds the first Mathematics Day in Greater Bay Area
澳大科技學院首辦大灣區數學日促交流合作

物理及化學系簡介
Department of Physics and Chemistry

物理及化學系成立於2018年，設有應用物理及化學理學學士學位課程。除了教授物理及化學的基礎知識，課程還著重於將基礎知識運用到跨學科的領域，如材料科學、環境科學、生物醫學及工程、電子、機電及製造工程等等。與傳統針對單一學科的課程不一樣，課程採用以研促學的教學模式，畢業生除了掌握物理及化學理論基礎以外，還訓練出將理論知識應用到各個領域的能力，用以解決生活中的各種問題，大大地拓寬他們的就業前景及研究方向。

The Department of Physics and Chemistry (DPC) was established in 2018. The department offers bachelor degree programme in Applied Physics and Chemistry. This programme offers a comprehensive grounding in physics and chemistry to our students, with a focus on their interdisciplinary applications into materials science, environmental science, biomedical science and engineering, electronics, mechanical and manufacturing engineering, etc. Unlike the traditional single-focused discipline, undergraduate programme of DPC is strongly project-oriented, graduates will not only have a broad foundation of physics and chemistry principles, but also are trained in applying these principles to various fields with ability to solve complex real-life problems, which could greatly widen their career and research prospects.
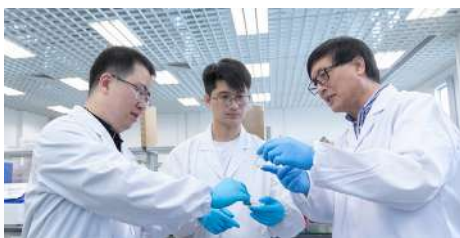
實驗室 Laboratories

• 高等物理實驗室
協助學生進行現代物理、量子力學、固態物理、半導體物理和其他物理課程的物理實驗。

• 化學實驗室
為學生以及澳門保安部隊高等學校提供化學相關教學及支援。

• 基礎物理實驗室
為學生展示物理學的基本原理及提供體驗，使學生能提升實驗技術，並培養分析數據的能力。

• Advanced Physics Laboratory
To assist students with physical experiments in modern physics, quantum mechanics, solid state physics, semiconductor physics, and other physics courses.

• Chemistry Laboratory
To provide support and teaching to students and also FED and ESFSM (Police school).

• General Physical Laboratory
To demonstrates the fundamental principles of Physics and provides a modest experience that allows student to develop and improve experimental technique and develop ability of data analysis.

獎項 Award

UM team successfully develops aqueous electrochromic batteries with long life
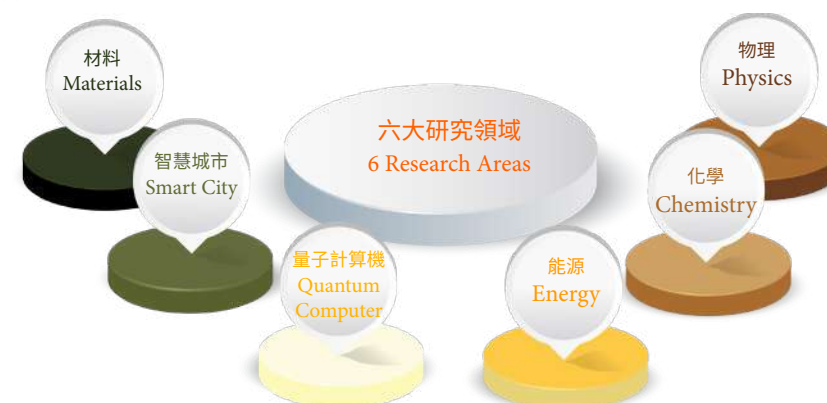澳大成功研發長壽命電致變色電池

UM develops magnetised electronic skin capable of quantitative recognition of 3D surface morphology
澳大成功研發可識別3D輪廓磁化電子皮膚

UM team makes important progress in research of new materials for energy storage
澳大團隊在新儲能材料研究取得重要進展

研究領域 Research Areas

材料 Materials

物理 Physics

智慧城市 Smart City

六大研究領域 6 Research Areas

化學 Chemistry

量子計算機 Quantum Computer

能源 Energy

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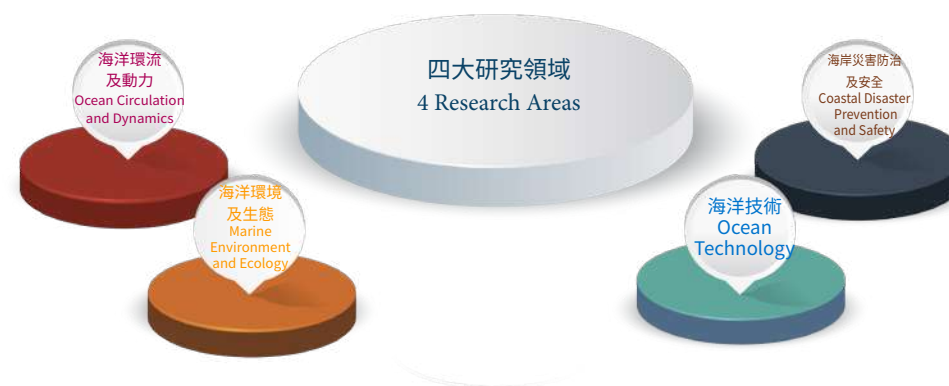## Department of Ocean Science and Technology

海洋科學與技術系成立於2022年。海洋科學與技術是一個交叉學科領域，融合了物理學、數學、化學、生物學、地質學、人工智能、信息科學、數據科學和海洋學等學科。學系重點關注海洋領域的學術前沿和創新技術，包括但不限於海洋環境與生態、海洋環流、海岸災害、海洋聲學、海洋傳感器、水下通信與網絡、海洋大數據技術等。目前學系提供研究生課程，旨在培養學生成為具有科學知識、先進技術和解決問題能力的工程師及培訓海洋科學專業人員。

The Department of Ocean Science and Technology (OST) was founded in 2022. Ocean science and technology is an interdisciplinary field, which integrates the disciplines of physics, mathematics, chemistry, biology, geology, artificial intelligence, information science, data science and oceanography. The department focuses on the academic frontiers and innovative technology in the ocean field, including, but not limited to, ocean environment and ecology, ocean circulation, coastal disasters, ocean acoustics, ocean sensor, underwater communication and network, ocean big data technology. The programmes of OST aims to train students to be engineers with scientific knowledge, advanced technology and problem-solving skills. The programme is also designed to train ocean science professionals for academic and research purpose.

實驗室 Laboratories

- 海洋環境污染分析與評估實驗室 (CRO)
- 海洋環境污染防治實驗室 (CRO)
- 海洋環境與建模實驗室 (CRO)
- 海洋與大氣研究實驗室(CRO)

- Laboratory for Ocean Environmental Pollution Analysis and Assessment (CRO)
- Laboratory for Ocean Environmental Pollution Prevention and Remediation (CRO)
- Laboratory for Ocean Environmental Simulation and Modelling (CRO)
- Laboratory for Ocean and Atmospheric Research (CRO)

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模擬與混合信號超大規模集成電路國家重點實驗室
## State Key Laboratory of Analog and Mixed-Signal VLSI

澳門大學於2010年11月通過由科學技術部的嚴格評審,獲批建立模擬與混合信號超大規模集成電路國家重點實驗室,是廣東省以及澳門第一個微電子的國家重點實驗室。實驗室圍繞四個領域:數據轉換和信號處理、無線通信、生物醫學工程及電力電子控制器芯片。

實驗室成立的目的是創建一個符合國家和國際標準的優秀及領先模擬及混合信號集成電路研發平台,建立一支擁有先進納米集成電路研發及技術的本地團隊和人力基礎設施,建立學院和企業之間的合作關係以及推動研發成果及專利的商業化等。

In November 2010, UM passed the rigorous evaluation of the Ministry of Science and Technology and obtained the approval for establishing the State Key Laboratory of Analog and Mixed-Signal VLSI (AMSV). It is the first state key laboratory in microelectronics in Guangdong Province and Macao. The lab establishes its research in four areas: data conversion and signal processing, wireless communication, biomedical engineering, power electronics controller ICs.

The purpose of the lab is to establish an excellent R&D platform in the area of advanced analog and mixed-signal integrated circuits and systems that should meet the local and international standards. It aims to build up a highly-qualified local technical team in advanced nanometer IC R&D and develop the cooperation among institutes and industries for the application and commercialization of R&D results/patents.
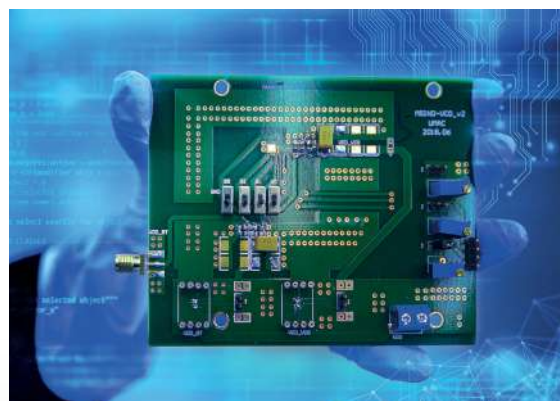
智慧城市物聯網國家重點實驗室
State Key Laboratory of Internet of Things for Smart City

澳門大學智慧城市物聯網國家重點實驗室成立於2018年7月,是澳大獲國家科技部批准設立的全國第一個智慧城市物聯領域的國家重點實驗室,秉持"國家所需,澳門所長"的精準定位,根據"世界一流,澳門特色"的要求,實驗室定位解決智慧城市物聯網關鍵科學和技術問題,提出帶有基礎性和共性的理論、演算法和系統,開發智慧城市的示範應用。實驗室圍繞五個方向下設研究室,分別是:智能傳感與網路通信、城市大數據與智能技術、智慧能源、智能交通、城市公共安全與災害防治。

實驗室成立的目的是建立智慧城市研究與開發平台,實現科學技術研究的引領和影響力,為澳門城市經濟適度多元發展出力。實驗室還致力研發關鍵技術及爭取跨學科合作,為澳門、大灣區和全國的智慧城市發展提供技術支撐。

State Key Laboratory of Internet of Things for Smart City of the University of Macau (SKL-IoTSC) was established in July 2018, it is China's first state key lab in the internet of things for smart city and was founded with the approval of the Ministry of Science and Technology. The lab aims to meet the needs of the country by developing into a world-class laboratory with local characteristics, with the support of experts in Macao. To solve the key technical issues in internet of things technology for smart city development, the lab develops common theories, algorithms, and systems that are of fundamental importance, and creates exemplary applications for smart city development. So far, the lab has established its research offices in five areas: intelligent sensing and network communication, urban big data and intelligent technology, smart energy, intelligent transportation, and public safety and disaster prevention.

The purposes of the lab are to establish a research and development platform, carry out influential scientific research and contribute to the moderate diversification of Macao's economy. It is also committed to developing key technologies, striving for interdisciplinary cooperation and offering support for the development of smart cities in Macao, the Greater Bay Area and China at large.

人工智能與機器人研究中心
Centre for Artificial Intelligence and Robotics

澳門大學於2019年5月與中國科學院深圳先進技術研究院成立人工智能與機器人聯合實驗室，目的是促進彼此在相關領域的研究發展，整合各方的優惠及開展人工智能與機器人科學等領域的創新性合作。依託雙方優勢力量，優勢互補，在人工智慧與機器人等領域密切合作，在人才培養及學生教育方面共同努力。

人工智能是目前國家發展的戰略方向之一，基於廣泛的技術和解決方案，人工智能可以實現許多有前景的應用，從智能家居中的清潔機械人到個性化應用智能商店中的廣告，以及智能交通中的自動駕駛汽車。中心還會承擔課外科研實踐的指導、科學研究實踐及創新的人工智能設計。

The Joint Laboratory of Artificial Intelligence and Robotics between UM and the Shenzhen Institutes of Advanced Technology (SIAT) of the Chinese Academy of Sciences (CAS) was established in May 2019. This lab aims to provide a platform for collaborative research in Artificial Intelligence and Robotics. It is expected to enhance the research capacity of both parties. Following the rapid development of Guangdong-Hong Kong-Macao Greater Bay Area, both parties will combine their strengths and carry out collaborations in areas like Artificial Intelligence, Robotics and talents development.

Artificial Intelligence is a strategic direction of national development. Based on a wide range of technologies and solutions, Artificial Intelligence can be used in many situations - from cleaning robot in smart homes, personalised advertisements in smart application stores to auto driving vehicles. The centre will also undertake the works for extracurricular scientific research and innovative Artificial Intelligence design for students.

數據科學研究中心
Centre for Data Science

數據科學研究中心於2019年建立，數據科學研究中心致力於創建出新型合作平台，透過開展跨學科研究與產業應用之間的創新網絡，期望促使更多跨領域合作。在人才培養方面，中心聯同校內六個學院開設"理學碩士（數據科學）學位課程"。中心致力培訓新一代數據科學家，對數據進行各種跨學科研究，促進對知識的深入探索並建立預測機制和模型，以指導數據科學在人類各個層面的應用。

中心將開展跨學科研究和促進科學技術進步及探索與業界合作的方式，並開始利用數據收集和分析的新技術，以便為社會相關領域的問題提供解決方案。

Centre for Data Science (CDS) was established in 2019. CDS is committed to creating a new type of cooperation platform. Through the development of an innovative network between interdisciplinary research and industrial applications, it is expected to promote more multi-disciplinary corporations. In terms of talent training, the centre has launched a "Master of Science (Data Science) program" in corporations with 6 faculties in UM. The centre is committed to developing a new generation of data scientists, conducting various interdisciplinary research on data, promoting in-depth exploration of knowledge and establishing predictive mechanisms and models to guide the application of data science at all levels of human beings.

The centre will conduct interdisciplinary research, promote scientific and technological progress and explore different ways to collaborate with enterprises. Also, it will begin utilizing new technologies in data collection and analysis for the problems in relevant fields.

認知與腦科學研究中心
Centre for Cognitive and Brain Sciences

區域海洋研究中心
Centre for Regional Oceans

認知與腦科學研究中心於2019年成立,通過整合各院系和學科,來加速認知以及腦科學研究的成果。組建世界一流的團隊和先進的設施,通過認知和腦科學關鍵領域的尖端研究,擴大澳大跨學科的影響。此外,中心致力於加強跨學科的認知和腦科學研究,並將成果轉化為解決健康和澳門重大社會問題的方案。為大灣區認知和腦科學領域提供領先研究和教育機構,研究方向包括成癮與決策,腦與語言認知,兒童發展,認知老化和腦疾病,腦影像與腦網絡圖譜。

認知與腦科學研究中心由四個平台組成:神經影像學、腦干預、認知和行為數據收集以及高性能計算平台。四個平台相輔相成,實現腦成像、眼動、行為、生理、臨床等多維度、大規模數據的整合,有助於揭示神經認知機制,指導腦干預,並達到治療腦部疾病的目的。

Centre for Cognitive and Brain Sciences (CCBS) was established in 2019. It is a scientific and scholarly community that committed to making neuroscience greater than the sum of its parts by integrating various faculties and disciplines to accelerate breakthroughs. With its world-class faculty members and state-of-the-art facilities, CCBS strives to enhance knowledge in key areas of cognition and brain sciences through cutting-the-edge research, maximizing opportunities for community stakeholders. In addition, the centre is committed to strengthening interdisciplinary cognitive and brain research and translating the results into solutions to major social issues in health. It provides leading research and education for Greater Bay Area. The research directions are: addiction and decision-making, brain and language cognition, child development, cognitive aging and brain diseases, brain imaging and brain network atlas.

CCBS consists of four platforms: neuro-imaging, brain intervention, cognition and behavioural data collection and high performance computing platforms. The four platforms complement each other and realize the integration of multi-dimensional and large-scale data acquired from brain imaging, eye movement, behaviour, physiology, clinical, etc., which can help reveal the neural cognition mechanism, guide the brain intervention, and achieve the treatment of brain disorders.

區域海洋研究中心於2020年6月成立,目前海洋資源擁有龐大的開發潛力,然而海洋開發卻帶來許多潛在問題。為此海洋資源的利用和管理更顯重要。

成立區域海洋研究中心的目的在於提高城市公共安全和防災應對能力及推動大灣區科研創新中心建設等。中心將聚焦學術前沿,圍繞當前和未來的挑戰和機遇解決以下技術問題,包括:保護和修復沿海海洋生態系統,重點圍繞可持續發展環境戰略規劃,突破圍墾、海洋生態保護、海洋產業;在區域內建立多維度(水-氣-固)協同處理模式;從污染問題的識別、風險評估和污染控制的先進技術尋求區域環境研究的新路線圖;開展城市排澇、飲水安全、海水入侵等環境污染應急防治工作;培養工程師,開發創新技術等。

Centre for Regional Oceans (CRO) was established in June 2020. Although marine resources have great potential for sustainable development, the uncontrolled marine development in recent years has brought many challenges. Therefore, the utilization and management of marine resources become particularly important.

The purposes of CRO are to improve the city's public safety and disaster prevention and response capabilities and promote the construction of a scientific research and innovation centre in the Greater Bay Area. CRO will focus on the academic frontiers and solve the following technical problems around the challenges and opportunities at present and future:
- To protect and remediate coastal marine ecosystems with emphasis on strategic plan of a sustainable development environment, breakthroughs in reclamation, marine ecological protection, marine industry;
- To establish a multi-dimensional (water-gas-solid) collaborative processing mode in a regional area;
- To pursue a new roadmap of regional environmental research from the identification of pollution problem, risk assessment and advanced technologies of pollution control;
- To conduct the emergency prevention and control of environmental pollution caused by urban drainage and flooding, drinking water safety and seawater intrusion;
- To cultivate engineers and develop innovative technologies to provide technical support and guarantee for the moderate diversification of Macao's economy.

工程研究及測試中心
Centre for Engineering Research and Testing

隨著澳門的經濟發展和未來多項建築和基建工程的相繼動工及大規模的公私營項目推出，工程質量監管和技術支援的需求也較以往有所增加。

而澳大在學術、技術和科研上皆具有足夠的能力向本澳提供有關的工程服務。鑒於此，澳大於2003年4月於土木及環境工程系成立一所專門提供相關服務的工程研究及檢測中心。提供工程技術支援同時，中心結合科技學院土木及環境工程系的技術力量，向本澳工程業界提供土木建築所需的測試服務。中心的成立將加強本澳市場上具認可實驗室功能之機構的專業力量，這對特區未來的發展和建築業界的健康發展具有積極的意義。

工程研究及檢測中心為建築行業提供多項服務：
· 根據澳門建築法制定建築質量保證管理文件。
· 向公眾提供質量保證服務工程諮詢等。
· 促進澳大科技學院的研究和技術發展。
· 為學生提供工程實踐機會。

With the rapid development of Macao, a large number of public and private Infrastructure projects are confirmed to launch. The necessities of improving the ability on construction quality assurance and enriching engineering technical supports are realized by Macao SAR government.

Fortunately, UM utilizes its mature academic, technological and research resources to serve its obligations on practical engineering developments. The Department of Civil and Environmental Engineering of FST established the Centre for Engineering Research and Testing (CERT) in the April of 2003. CERT cooperates with FST and utilizes FST's facilities to serve the construction industry. The establishment of CERT will enhance the engineering professional capability which have positive impact for the continues development of local construction industry.

CERT provides quality testing services to local construction industry:
• To develop construction quality assurance governing documents according to the construction laws.
• To provide quality assuring services and engineering consultancy to the public.
• To facilitate the researches and technical developments of FST
• To provide opportunities to students for engineering practices.

應用數學研究中心
Centre for Applied Mathematics

應用數學研究中心於2020年成立，中心圍繞高性能科學計算、計算數學、統計學與應用概率、機器學習、數學研究、優化及應用研究等領域建設學科和科研團隊。探索數學在智慧城市建設、藥物研發及自然災害防治的作用。

中心積極參與國家和本地的重大技術和工程項目，尋求與企業的創新合作，重點關注國家重大科技任務、項目、企業重大發展需要的數學問題。以促進各領域數學問題的探索，為解決大灣區發展中的重大科學、工程和民生問題提供有力支撐。中心還會促進交叉研究，形成不同學科之間的良性互動，激發更多創新研究的發展。

人類大腦的血液流場計算
A computed blood flow field of a human brain

Centre for Applied Mathematics (CAM) was established in 2020. The centre aims to build research and fosters collaborations in the areas of high performance scientific computing, computational mathematics, statistics and applied probabilities, machine learning and its mathematical foundations, and applied optimization. It explores the role of mathematics in various applications such as smart city, precision medicines, natural disaster prediction and prevention etc.

The centre is currently supported by major national and local funding agencies for projects in science and engineering. The centre actively seeks innovative cooperation with local industries and provides strong support for solving scientific and engineering problems in the Greater Bay Area.

科學暨工程科普推廣中心
Centre for Science & Engineering Promotion

隨著本澳學校開展科普教育活動的氛圍濃厚，各中小學對實驗室場地設施的要求倍增，。澳門科學技術發展基金與澳大於2015年簽訂了<科普合作備忘錄>，當中包括建立科學暨工程科普推廣中心，目的為利用澳門大學在科研及科普設備上的優勢，提昇澳門非高等教育的青少年科研實驗水平，推動本澳各校共享科普資源，並善用高校的設備和支援，使澳門學生的科學素養有更大幅度的提升。

澳門大學於 2018 年 6 月設立"澳門中小學生科技實踐基地"，目前澳門中小學生科技實踐基地被列入2021—2025年全國科普教育基地，是澳門首個獲此殊榮的高校。基地透過科學暨工程科普推廣中心為核心，推出一系列支持本地科學推廣相關的STEM項目，並為本地中學師生提供持續教學培訓。中心由學習及展示區，科普活動區，生物及醫學實驗室，科學及工程工作室，多功能實驗室及多個創意空間所組成。基地亦將通過與社會各界的合作，推動澳門科普教育的發展。

With tendency of STEM education, the demand for laboratory facilities is highly required by local high schools. In 2015, Macau Science and Technology Development Fund and University of Macau have signed the Memorandum of Science Cooperation, which included the establishment of the Centre for Science and Engineering Promotion, it aims to optimize the usage of research resources and STEM related equipment in University of Macau for the sake of enhancing teenagers' scientific level and; facilitate the sharing scheme of STEM resources with local schools as well as make good use of the equipment of universities and; strengthen local students' scientific literacy and awareness of popular science.

Macao Base for Primary & Secondary STEM Education of University of Macau was established in June 2018. The base has been included in the first batch of 2021-2025 national science education bases. UM is the first university in Macao to have entered the list. Through the Centre for Science and Engineering Promotion, composed of Common Learning and Display Area, Popular Science Activities Area, Biological and Medical Science Laboratory, Science and Engineering Workshop, Multi-function Laboratory and Innovation Commons, as the base launched a series of STEM programmes to support science promotion in Macao and provide continuous training for teachers and students from local primary and secondary schools by collaborating with all strata of society.

學生經驗分享
Student Experience Sharing

> **澳大的環境十分國際化，同學老師都很互助及友善**
> *UM's environment is very international, classmates and professors are really friendly and supportive.*
>
> --- 數學系李天怡
> *Li Tianyi, Department of Mathematics*

李天怡是數學系在讀博士生，參加了去年科技學院舉辦的「內地優秀大學生暑期研習營」。數天的研習營中，天怡遊覽澳大校園、實驗室、學院、圖書館及體育館，更與教授們一同聚餐，親身感受優雅寧靜的校園及英語學習環境。天怡感嘆澳大得天獨厚的國際環境、充滿關愛的校園氛圍、恬靜優美的寄宿環境及優秀的硬件設備皆遠超預期。回顧整個入學的過程，天怡分享：「在澳大讀書並沒有想像中困難，不用過份憂慮生活問題，反而應盡早提升英語水平，穩固根基。」

Li Tianyi, a PhD student in the Department of Mathematics, who participated into 'FST 2021 Summer Camp for Mainland Students'. Tianyi visited the campus, laboratories, faculties, libraries and gymnasiums, and even had lunch with Professors in the summer camp. She was inspired with UM's unique international environment, supporting and caring learning environment, peaceful and beautiful campus and excellent hardware. Tianyi encouraged junior students who aims to study at UM, "studying in UM is not as difficult as you imagine. No need to worry too much about living or weather in Macao. Instead, it is suggested to improve the English level so as to build up a better foundation."

> **澳大給予學生很多出外交流的機會，可以全方位磨練和提升自己 。**
> *There are many opportunities to study abroad. We are able to develop ourselves in every aspects in UM.*
>
> --- 土木及環境工程系林菲兒
> *Lin Fei I, Department of Civil and Environmental Engineering*

林菲兒是土木及環境工程系優秀本科畢業生，性格積極開朗的她表示大學四年參加過各式各樣的比賽、研討會及學生會，也走訪過不同國家交流。她說：「澳大除了環境優美，學習資源也相對豐富。澳大給予學生很多出國交流的機會，還可以申請獎學金，同時也可以全方位磨練和提升自己。」未來她將繼續在澳大升讀碩士，延續澳大的學習之旅。

Lin Fei I, Alice is one of the outstanding undergraduates in the Department of Civil and Environmental Engineering. She participated in various competitions, seminars and student unions and visited different countries in the past four years. "Except for the beautiful environment, UM has very rich learning resources for students. There are many exchange opportunities and students can apply for scholarship. We are able to develop ourselves in every aspects." She said. In the future, she will pursue a master's degree and continue her study journey at UM.

"
在澳大，我學會很多編程技巧及物理知識，變得樂於探索，對數學及對自己的未來也有了新認知。

I have learned a lot about programming and physics knowledge, I am willing to explore more and I have a new understanding of not only Mathematics but also my own life.
"

--- 數學系廖倪徵
Liao Nizheng, Department of Mathematics

"
澳大的體育設備十分完善，可以深深感受大學對這方面的重視及投入。

Um has excellent sports facilities, I can see the input and efforts of UM in this area.
"

--- 清華大學學生李蔚然
Li Weiran, Student from Tsinghua University

廖倪徵是數學系優秀本科畢業生，四年努力不光在學術上進步，在獨立思考、為人處世態度乃至價值觀方面都令廖倪徵獲益匪淺。由最初只重視結果、只追求考試成績，現在的他更享受過程，樂於探索及深思箇中因由，對數學及對自己的未來也有了新認知。

Liao Nizheng is one of the outstanding undergraduates in the Department of Mathematics. Four-years in UM has changed Liao NiZheng's values and ways of doing things, he used to focus on the outcomes and the grade in exam. Now he is willing to explore more and find out the reasons behind, he said he had a new understanding of not only Mathematics but also his own life.

李蔚然是清華大學大三電機系學生，於年初到澳大進行一個學期的交流學習。在清大有打藍球習慣的她，加入了紹邦書院的籃球隊，每星期在澳大綜合體育館訓練兩次，同時她也十分善用資源，每天也會到澳大健身房運動。她說：「相比其他大學，澳大的體育設備及資源都十分完善，可以感受到澳大在體育的投入及用心。」

Li Weiran, an UG student from Tsinghua University, came to UM for a semester of exchange program. She played basketball in Tsinghua University and has joined the basketball team of Shiu Pong College. She and her team came to UM sport complex twice a week for training and she also made good use of the facilities of UM by going to UM fitness room every morning. "Compared with other universities, UM's sports facilities and resources are great," she said. "I can see the input and efforts of UM in sport."

"
我是一個喜歡動手創造的人，澳大有國家重點實驗室。與鄰近大學相比，條件及環境都很吸引。

I am a person who loves to do handiworks. Compared with other universities, UM has the State Key Lab (State Key Lab of Analog and Mixed-Signal VLSI) and the environment and facilities are very attractive to me.
"

--- 電機及電腦工程系任耀華
Iam Io Wa, Department of Electrical and Computer Engineering

"
澳大生活最大不同在於我可以更充分體驗生活，邁出舒適圈，積極嘗試不同的挑戰。

The largest difference of life at UM is that I can experience many new things, I am able to step out of my comfort zone and overcome different challenges.
"

--- 清華大學學生譚心逸
Tan Xinyi, Student from Tsinghua University

任耀華是電機及電腦工程系本科優秀畢業生，過去曾發表多篇論文，包括4篇會議論文及1篇期刊論文。其中期刊論文獲採納為SCI一區的論文，已達國際頂級水平及博士生水準。他說：「在澳大，我獲得了很多實踐的經驗，這些都是書本上學不到的知識，特別是畢業設計項目，製作過程都需要不斷構思和做實驗，我也很感謝多位教授多年來的支持和鼓勵。」

Iam Io Wa, an outstanding undergraduates in the Department of Electrical and Computer Engineering. He published multiple research papers in the past few years, including 4 conference papers and 1 journal paper. The journal paper has been successfully accepted as SCI Q1 paper, which is a great honour and recognition for a bachelor student. He said, "I have achieved a lot of practical experiences from UM and these are the knowledges that I cannot learn from books. Especially in the final year project, I need to do many experiments and keep reviewing the results during the whole process. I am grateful for the support and encouragement of professors."

同樣是清華大學大三學生，譚心逸來到澳大進行一學期的交流。澳大住宿式書院發起形形色色的活動，著重培養學生團隊協作、服務投入、文化參與、領導能力等令譚心逸感受甚深。譚心逸說：「我跟著書院同學去看音樂劇、體驗攀岩及音樂會，都讓我覺得十分新奇有趣，也非常期待即將來臨的書院晚宴。澳大生活最大不同在於我可以更充分去體驗生活，邁出舒適圈，積極嘗試不同的挑戰。」

Tan Xinyi, an exchange student from Tsinghua University, who also came to UM for a semester of exchange. UM's residential colleges have launched various activities, it focus on cultivating students' teamwork, service commitment, cultural participation, and leadership skills, which impressed Tan Xinyi deeply. "I went to see musicals, rock climbing and concerts with my classmates from the residential college, which made me feel interested, and I am looking forward to the upcoming high table dinner. The biggest difference in UM is that I can experience more about life, step out from the comfort zone and overcome different challenges." Tan Xinyi said.

Scholarship, Academic Prize and Fellowship

獎學金、學術獎項及助學金

學士學位課程新生
- 「校長推薦入學」獎學金
- 內地新生
- 澳門大學入學考試蓮花獎學金
- 傑出運動員入學計劃

學士學位或碩士學位課程新生
- 國際學生獎學金

學士學位或研究生課程在讀學生
- 學術獎項
- 全人發展獎學金
- 海外交流獎學金
- 傑出運動員獎勵計劃
- 助學金

學士學位課程在讀學生
- 逾30類獎學金

研究生課程在讀學生
- 約10類獎學金
- 碩士助學金
- 理工科課程獎學金

博士學位學生
- 澳大濠江博士生獎學金
- 博士助學金

New Students of Bachelor's Degree Programmes
- Scholarships for Students Admitted via Principals' Recommended Admission
- Scholarships for New Students from Mainland China
- UM Lotus Scholarship for Admission Examination
- UM Outstanding Student-Athletes Admission Scheme

New Students of Bachelor's Degree and Master's Degree Programmes
- International Student Scholarship

Current Students of Bachelor's Degree Programmes and Postgraduate Students
- Academic Prizes
- Whole Person Development Scholarships
- Outgoing Exchange Scholarship
- UM Outstanding Student-Athletes Award Scheme
- Fellowship

Current Students of Bachelor's Degree Programmes
- Over 30 Scholarships

Current Postgraduate Students
- Around 10 Scholarships
- Master Assistantship
- STEM Scholarship

Students of Doctoral Degree Programmes
- UM Macao PhD Scholarship
- PhD Assistantship

Scholarship 獎學金

入學資訊
Admission

Undergraduate Programmes
查詢本科生入學資訊，可聯絡澳大註冊處:
Email: admission@um.edu.mo
Phone Number: (853)8822 4007
Website: reg.um.edu.mo/admissions

Registry 註冊處

Postgraduate Programmes
查詢研究生入學資訊，可聯絡研究生院:
Email: gradschool@um.edu.mo
Phone Number: (853) 8822 4898
Website: grs.um.edu.mo

GRS 研究生院

其他查詢
Other Enquires

可聯絡澳大科技學院辦公室:
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University of Macau, E11

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