

COURSE DESCRIPTIONS 科目簡介

COURSES FOR TAUGHT POSTGRADUATE PROGRAMMES

CDT501 Computer Systems and Programming Basics (3 credits)

This course provides a comprehensive overview of computer systems and programming. It is for students who have limited background and are looking to master the basic skill of programming. It will help students to get to grips with the building blocks of programming languages and get started on the programming journey. Students will understand the relationship between computer programs and programming languages and how code is executed on the computer. This course will focus on the different types of applications and students will delve into programming constructs, learning all about statements, operators, variables, and data types.

CDT502 Principles of Data Analytics and Decision Making (3 credits)

This course covers both statistics and operations research. Students will learn the importance of regression, optimisation and simulation for business analytics. By the end of the course, students will have a strong foundation in data analysis methods and the ability to extract insights and make informed decisions from complex datasets.

CDT503 Control System and Artificial Intelligence Applications (3 credits)

This course introduces the fundamental concepts of control systems and their applications in industrial production and large-scale manufacturing systems. It covers the basic principles, roles, and working mechanisms of control systems focusing on the foundational principles and industrial applications of control systems, along with the integration of artificial intelligence (AI) techniques in enhancing control system performance. The course is designed for students with a limited engineering background, using accessible explanations and real-world examples to enhance comprehension.

CDT504 Product and Process Design and Implementation (3 credits)

This course offers an integrative approach to product design and development, combining perspectives from marketing, design, and manufacturing. It provides students with a set of tools and methods to develop products from concept to market. The course will explore case studies and practical applications, ensuring students understand both the theoretical and practical aspects of process design and product development.

CDT505 Project Management: Concepts and Tools (3 credits)

This is a practical course for putting PMBOK (project management body of knowledge) concepts to work. Going beyond theory and concept to real-world practice, the tools and techniques in this course are the “how” of effective project management; from planning, to implementation, to oversight, and beyond, all phases of the project are represented in this course to help students apply more effectively critical PMBOK concepts.

CDT506 Leadership and Interpersonal Skills for Technology Professionals (3 credits)

Working from basic units called microskills, this course shows students how to engage, listen, manage conflict, and influence others with highly constructive, repeatable communication exchanges. Students will learn the techniques for facilitating agreement within groups, including identifying common goals, exploring options collaboratively, and building solutions that work for all stakeholders.

CDT507 Master of Technology Field Trip (3 credits)

(Exclusion(s): CDT508 Master of Technology Capstone Project)

Combining knowledge of key theoretical fundamental principles with skills and judgement acquired from controlled practical experiences is important for the training of technology professionals. Field trip is an effective pathway for integrating theory and practice, and students' learning experiences are enhanced through group design projects.

CDT508 Master of Technology Capstone Project (3 credits)

(Exclusion(s): CDT507 Master of Technology Field Trip)

This course is real-world and feature authentic professional activities. Project briefs may originate from industry and community clients, competitions or research questions. Content will focus on appropriate methods for successfully completing a project.

CDT511 Material, Processing Technology and Equipment (3 credits)

This course provides a comprehensive overview of materials and manufacturing processes used in modern production systems. It covers engineering materials including metals, ceramics, polymers and composites as well as major manufacturing processes like casting, molding, metal forming, machining and additive manufacturing. Latest developments in advanced manufacturing technologies are also introduced. Through case studies and hands-on practice, students will gain essential knowledge of materials, equipment and processing technologies for effective manufacturing.

CDT512 Automobile Construction (3 credits)

This course introduces the fundamental concepts of automobile construction, covering the key components and systems that make up a vehicle. Students will learn about the basic design and function of major subsystems such as the engine, chassis, suspension, and electrical systems. The course will also explore how these parts work together to ensure vehicle performance, safety, and efficiency.

CDT513 Modern Electronic Business (3 credits)

This course provides a comprehensive overview of modern electronic business, exploring the digital transformation of business models, processes, and strategies. Students will examine the core concepts, technologies, and real-world application of e-business. Topics covered include digital platforms, online marketing, e-commerce models, digital supply chains, electronic payment systems, and data analytics. Through case studies and hands-on projects, students will gain practical insights into leveraging digital technologies to enhance business operations, customer engagement, and competitive advantage in the internet economy.

CDT514 Supply Chain Management (3 credits)

This course provides a strategic framework for understanding supply chain management and making supply chain decisions. Students will explore the key drivers of supply chain performance, including facilities, inventory, transportation, information, sourcing and pricing. Analytical models and tools will be introduced to support decision-making related to these drivers. Through case studies and a group project, students will apply their knowledge to analyse real-world supply chain problems and develop effective strategies.

CDT515 New Media and Video (3 credits)

This course explores the evolution, current trends, and future directions of new media and online video. Students will gain a comprehensive understanding of new media platforms, digital video formats, online video sharing/streaming, and content creation techniques. Through case studies and hands-on projects, they will learn best practices for leveraging new media tools and distributing video content to digital audiences. Key topics include user-generated content, viral marketing, video monetisation strategies, and the impact of online

video on culture and society.

CDT516 SAAS and Smart Manufacturing System Design (3 credits)

Software as a Service (SAAS) and Smart Manufacturing System Design is a dynamic course that explores the multifaceted realms of software business models and smart manufacturing systems design. This course provides a comprehensive overview of traditional perpetual software licensing models, their limitations, and the emergence of the subscription-based SAAS model. It then dives into the transformative potential of digital technologies like AI, IoT, and big data to revolutionise smart manufacturing systems and business models across industrial sectors. Students will examine principles, applications, and real-world case studies showing how SAAS business strategies and digital manufacturing can drive innovation and value. Through hands-on projects, students will develop strategies for managing successful SAAS companies and digitally transforming production systems for maximum efficiency, sustainability, and competitive advantage.

CDT517 Establish Business Mindset for Technology Professionals (3 credits)

Establish Business Mindset for Technology Professionals explores the intersection of technology and entrepreneurship. Students will study the principles and practices of developing an entrepreneurial mindset. This course emphasises business skills such as opportunity recognition, value creation, and business planning. Students will gain practical entrepreneurial skills through case studies, projects, and interactions with practicing entrepreneurial Technology Professionals. This course is ideal for Technology Professionals interested in startups, innovation, and bringing ideas to market.

CDT518 Economics and Financial Analysis (3 credits)

Financials: Economics & Financial Analysis provides a comprehensive foundation in core concepts of economics and financial analysis. Students will learn time value of money calculations, compare investment alternatives, apply depreciation systems, conduct after-tax analyses, assess inflation impacts, and integrate uncertainty through sensitivity analysis and risk simulation. Realworld cases will be used to demonstrate applications across technologies and business. Hands-on use of spreadsheets facilitates complex analyses. Upon completion, students can apply enhanced analytic skills to evaluate alternatives and optimise decisions in professional practice.

CDT519 Data-driven Critical and Analytical Thinking (3 credits)

The “Data-Driven Critical and Analytical Thinking” course equips students with essential skills in logical reasoning, critical thinking, and data-driven analytical problem-solving. This course emphasises the use of data to support reasoning and decision-making. Students will explore methods for analysing datasets, identifying patterns, and interpreting evidence from a data-driven perspective. They will also learn to detect logical fallacies and biases in data interpretation and problem-solving. The course emphasises the application of critical thinking and data analysis in both academic research and real-world contexts.

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