

**REGULATIONS FOR THE DEGREE OF  
MASTER OF SCIENCE IN TECHNOLOGY, DESIGN AND LEADERSHIP FOR LEARNING  
[MSc(TDLL)]**

*These regulations apply to students admitted to the Master of Science in Technology, Design and Leadership for Learning [MSc(TDLL)] curriculum in the academic year 2023-24 and thereafter.*

*(See also General Regulations and Regulations for Taught Postgraduate Curricula)*

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**Ed216 Admission requirements**

To be eligible for admission to the degree of Master of Science in Technology, Design and Leadership for Learning, a candidate

- (a) shall comply with the General Regulations and the Regulations for Taught Postgraduate Curricula;
- (b) shall hold a Bachelor's degree of this University or a qualification of equivalent standard from this University or another comparable institution accepted for this purpose;
- (c) shall satisfy the examiners in a qualifying examination, if required; and
- (d) for a candidate who is seeking admission on the basis of a qualification from a university or comparable institution outside Hong Kong of which the language of teaching and/or examination is not English, shall satisfy the University English language requirement applicable to higher degrees as prescribed under General Regulation G2(b).

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**Ed217 Qualifying examination**

- (a) A qualifying examination may be set to test the candidates' formal academic ability or their ability to follow the curriculum prescribed.
- (b) Candidates who are required to satisfy the examiners in a qualifying examination shall not be permitted to register until they have satisfied the examiners in the examination.

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**Ed218 Period of study**

The curriculum shall normally extend over one academic year of full-time study, including a summer semester, or two consecutive academic years of part-time study. Candidates shall not be permitted to extend their studies beyond the maximum period of registration of two academic years of full-time study or four academic years of part-time study, unless otherwise permitted or required by the Board of the Faculty.

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**Ed219 Curriculum requirements**

To complete the curriculum, candidates shall

- (a) satisfy the requirements prescribed in TPG 6 of the Regulations for Taught Postgraduate Curricula;
- (b) follow instruction in the syllabuses prescribed and complete all specified work as required; and
- (c) satisfy the examiners in all assessment tasks as may be required.

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**Ed220 Advanced standing and credit transfer**

- (a) Advanced Standing may be granted to candidates who have successfully completed one or more courses in this University or another qualification of equivalent standard accepted for this purpose.
- (b) Candidates may be granted Advanced Standing subject to the following conditions:

- (i) the course(s) is appropriate for the specialist strand applied for; and
- (ii) the application for Advanced Standing is received within five years of successful completion of the relevant courses or graduation from the qualification of equivalent standard accepted for this purpose, whichever is later.

(c) The amount of credits to be granted for Advanced Standing shall be determined by the Board of the Faculty, in accordance with the following principles:

- (i) a candidate may be granted a total of not more than 20% of the total credits normally required under a curriculum for Advanced Standing unless otherwise approved by the Senate; and
- (ii) credits granted for Advanced Standing shall not normally be included in the calculation of the GPA, unless permitted by the Board of the Faculty but will be recorded on the transcript of the candidate.

(d) Candidates may, with the approval of the Board of the Faculty, transfer credits for courses completed at other institutions during their candidature. The number of transferred credits may be recorded on the transcript of the candidate, but the results of courses completed at other institutions shall not be included in the calculation of the GPA.

(e) Candidates who are awarded Advanced Standing will not be granted any further credit transfer for those studies for which Advanced Standing has been granted.

(f) Application for Advanced Standing shall be made prior to the commencement of the curriculum, and should be accompanied by copies of academic transcripts to support the application.

(g) The combined total number of credits to be granted for Advanced Standing and credit transfer shall not exceed half of the total credits normally required in accordance with this regulations and syllabuses.

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### **Ed221      Exemption**

Candidates may be exempted, with or without special conditions attached, from the requirement prescribed in the regulations and syllabuses governing the curriculum with the approval of the Board of the Faculty, except in the case of a capstone experience. Approval for exemption of a capstone experience may be granted only by the Senate with good reasons. Candidates who are exempted must replace the number of exempted credits with courses of the same credit value.

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### **Ed222      Assessment**

- (a) Candidates shall be assessed by diverse forms of assessment as prescribed by the examiners during the course of their studies.
- (b) Candidates shall not be permitted to repeat a course for which they have received a passing grade or above for the purpose of upgrading.
- (c) Courses in which candidates are given an F grade shall be recorded on the transcript of the candidate, together with the new grade if the candidate is re-assessed or repeats the failed course.
- (d) There shall be no appeal against the results of examinations and all other forms of assessment.

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### **Ed223      Re-assessment**

Candidates are required to make up for failed courses in the following manner:

- (a) undergoing re-assessment/re-examination in the failed course to be held normally no later than the end of the following semester (not including the summer semester); or
- (b) re-submitting failed coursework, without having to repeat the same course of instruction; or
- (c) repeating the failed course by undergoing instruction and satisfying the assessments; or
- (d) for elective courses, taking another course in lieu and satisfying the assessment requirements.

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**Ed224 Discontinuation**

Unless otherwise permitted by the Board of the Faculty, candidates shall be recommended for discontinuation of their studies if they have:

- (a) failed to satisfy the examiners upon re-assessment of a course; or
- (b) exceeded the maximum period of registration specified in Regulation Ed218.

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**Ed225 Grading systems**

Individual courses shall be graded according to one of the following grading systems as determined by the Board of Examiners:

- (a) Letter grades, their standards and the grade points for assessment as follows:

<i>Grade</i>	<i>Standard</i>	<i>Grade Point</i>
A+		4.3
A		4.0
A-		3.7
B+		3.3
B		3.0
B-		2.7
C+		2.3
C		2.0
C-		1.7
D+		1.3
D		1.0
F		0

or

- (b) 'Pass' or 'Fail'.

Courses which are graded according to (b) above will not be included in the calculation of the GPA.

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**Ed226 Award of degree**

- (a) To be eligible for the award of the degree of Master of Science in Technology, Design and Leadership for Learning candidates shall
  - (i) comply with the General Regulations and the Regulations for Taught Postgraduate Curricula; and
  - (ii) complete the curriculum and satisfy the examiners in accordance with these regulations and the syllabuses.
- (b) On successful completion of the curriculum, candidates who have shown exceptional merit may be awarded a mark of distinction, and this mark shall be recorded in the candidates' degree diploma.

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**SYLLABUSES FOR THE DEGREE OF  
MASTER OF SCIENCE IN TECHNOLOGY, DESIGN AND LEADERSHIP FOR LEARNING  
[MSc(TDLL)]**

*These syllabuses apply to students admitted to the Master of Science in Technology, Design and Leadership for Learning [MSc(TDLL)] curriculum in the academic year 2025-26 and thereafter.*

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The degree of Master of Science in Technology, Design and Leadership for Learning [MSc(TDLL)] is a postgraduate degree awarded for the satisfactory completion of a prescribed programme in one of the following specialist strands:

1. E-learning
2. Education and technology leadership
3. Learning technology design

Candidates are required to complete a total of 60 credits which comprise:

- 12 credits of core courses (6 credits each);
- a 12-credit capstone course;
- 18 credits from a specialist strand; and
- 18 credits of elective courses.

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**CORE COURSES**

Candidates are required to complete 12 credits of core courses.

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**TDLL6024 Teaching and learning with digital technology (6 credits)**

This course provides a comprehensive introduction to the use of digital technology for teaching and learning. Topics range from traditional applications e.g., computer-based tutorials to more contemporary applications such as the use of learning objects, cognitive tools, and collaborative technologies. The course highlights theories of learning underpinning technology integration and the educational contexts within which these are intended to be used.

Assessment: 100% coursework.

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**TDLL6025 Methods of research and enquiry (6 credits)**

This course introduces students to research methods, emphasising critical appraisal and an understanding multiple approaches to conducting research. The course also examines the conceptualisation, planning, and conduct of small-scale research in the integration of digital technology in educational settings.

Assessment: 100% coursework.

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**SPECIALIST COURSES**

Candidates are required to complete 18 credits from the list of specialist courses for their chosen specialist strand. Not all courses will be offered every year.

**A. E-learning**

TDLL6311	E-learning strategies and management (6 credits)
TDLL6330	Learning design and technology (6 credits)
TDLL6338	New literacies and technology (6 credits)
TDLL7345	Engaging adult learners (6 credits)
TDLL7349	Data science and learning analytics (6 credits)
TDLL7351	Information system analysis and development (6 credits)
TDLL7352	Digital technology and intellectual property law in education (6 credits)
TDLL7353	Artificial intelligence-enhanced learning technology (6 credits)
TDLL7354	Artificial intelligence literacy: problems, design, and practice (6 credits)
TDLL7355	Advanced topics in learning analytics and artificial intelligence in education (6 credits)
TDLL7356	Computational thinking for STEM education (6 credits)
TDLL7357	Emerging technology for STEM learning and teaching (6 credits)

**B. Education and technology leadership**

TDLL6023	Digital technology and educational leadership (6 credits)
TDLL6305	Digital culture and educational practice (6 credits)
TDLL6310	Innovative practices in education through digital technology adoption (6 credits)
TDLL6328	Organisational learning (6 credits)
TDLL6335	Technology in education in China within a global context (6 credits)
TDLL7345	Engaging adult learners (6 credits)
TDLL7347	Project management (6 credits)
TDLL7351	Information system analysis and development (6 credits)
TDLL7352	Digital technology and intellectual property law in education (6 credits)
TDLL7354	Artificial intelligence literacy: problems, design, and practice (6 credits)
TDLL7357	Emerging technology for STEM learning and teaching (6 credits)
TDLL7358	People-centric design for education using simulation technology (6 credits)

**C. Learning technology design**

TDLL6329	Multimedia in education (6 credits)
TDLL6330	Learning design and technology (6 credits)
TDLL6332	Digital resources for learning (6 credits)
TDLL6333	Mobile and ubiquitous technology in education (6 credits)
TDLL6334	Educational video and storytelling (6 credits)
TDLL7341	Game-based learning environments (6 credits)
TDLL7349	Data science and learning analytics (6 credits)
TDLL7351	Information system analysis and development (6 credits)
TDLL7352	Digital technology and intellectual property law in education (6 credits)
TDLL7353	Artificial intelligence-enhanced learning technology (6 credits)
TDLL7354	Artificial intelligence literacy: problems, design, and practice (6 credits)
TDLL7355	Advanced topics in learning analytics and artificial intelligence in education (6 credits)
TDLL7356	Computational thinking for STEM education (6 credits)

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**CAPSTONE PROJECT AND RESEARCH (A capstone requirement)**

Candidates are required to complete TDLL7000 Capstone project and research (equivalent to 12 credits).

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## **TDLL7000 Capstone project and research (12 credits)**

The capstone course provides students with an opportunity to apply and extend their knowledge and skills developed through the study, and demonstrate mastery of the programme level learning outcomes.

There will be two options available for students to choose:

- Capstone Project A – A research-based project with the final deliverable in a format of a research paper suitable for an academic pursuit, such as, for inclusion in academic conference proceedings, a book chapter, or a journal paper. The total word length of written output for various assessment tasks is 8,000 words, including a research-based paper of 6,000 words and conference presentation of 2,000 words.
- Capstone Project B – A development and evaluation project reflecting authentic practices from an education-focused industry, such as, e-learning in higher education or a corporate environment, education publishing industry, or a client-focused content development venture. Deliverables for this option will include (a) a final, developed, and evaluated product, and (b) a paper reporting experiences in the development. The paper shall be in a format suitable for an academic conference. The total word length of written output for various assessment tasks is 8,000 words, including a development and evaluation project of 4,000 words, a project site or product of 2,000 words, and a conference presentation of 2,000 words.

There shall be an equivalent of 36 hours of scheduled sessions in this course for students to (a) meet, share experiences, clarify expectations, receive guidance from their supervisor(s) and Capstone Project coordinator as groups and in respect to different stages of their project, and (b) participate in a conference to be specially arranged for the purpose of students presenting posters of their ongoing projects. In addition, 6 hours of contact time will be available for students to undergo one-to-one meetings with their supervisor(s), either in person or online, and pursue consultations with other relevant stakeholders. In addition, an equivalent of 198 hours of independent work will be required for the completion. The total study load is 240 hours.

For research-based projects, the stages will include conceptualisation of project stage, methodological design, ethics application, revision of instruments, data analysis as well as preparing poster presentations, writing up project reports and other deliverables. For development and evaluation-based projects, the stages will include requirement analysis, design of prototype, ethics application, development and implementation of the product, evaluation of the product, poster presentation, and report writing. The Capstone Project will provide an exceptional experience for students to engage in developing their projects, reflecting, and mastering knowledge and skills over an extended period of time from December until July. Also, the experience will provide students with an opportunity to be a part of a learning community to collaboratively extend what they have learnt in the programme to both academic research and professional practices outside of the University.

Assessment: 100% coursework.

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## **ELECTIVE COURSES**

Candidates are required to complete 18 credits of elective courses which have not yet been taken previously. Candidates may take relevant course(s) from other master degree curricula offered by the Faculty of Education under the advice and approval of the Programme Director. Not all elective courses will be offered every year.

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## **TDLL6023 Digital technology and educational leadership (6 credits)**

This course provides students with the necessary conceptual knowledge and working methods to implement educational policies and strategies at the institutional level within the broader educational ecosystem, that leverage digital technology for e-learning and prepare future-ready students for the evolving educational and sociotechnical landscape. It prioritises leadership concerns and strategies for sustaining and scaling transformative e-learning innovations that foster 21<sup>st</sup> century learning outcomes. The course offers a comparative perspective for benchmarking local and international practices and identifies contemporary leadership issues concerning the implementation of digital technology in education across multiple levels.

Assessment: 100% coursework.

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#### **TDLL6305 Digital culture and educational practice (6 credits)**

This course explores with a multidisciplinary perspective the impact of digital technologies on society and the individuals. It examines ways in which information technology has affected global and local communities and cultures, home, leisure, work and educational practices as well as our conception of identity. Issues related to the evolution and impact of cyber-communities on adolescents and traditional educational communities will also be examined.

Assessment: 100% coursework.

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#### **TDLL6310 Innovative practices in education through digital technology adoption (6 credits)**

This course explores innovative practices in education through the integration of digital technology. The course investigates in detail case studies collected from around the world to examine concepts and models of what constitutes innovative practice in a variety of educational settings. The course examines the proposition that technology can act as a lever for innovation and change in education.

Assessment: 100% coursework.

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#### **TDLL6311 E-learning strategies and management (6 credits)**

This course examines the design and management of effective e-learning in both educational and organisational settings. Students will analyse learning needs, design content based on instructional theories, and integrate emerging technologies to develop meaningful learning resources. The course emphasises six types of learning: factual, conceptual, principle-based, problem-solving, procedural, and attitude change. Key topics include instructional design models, course design frameworks, content creation techniques, and various learning strategies. Through a flipped classroom format, students will examine challenges on managing emerging technologies, create theoretically sound learning content, and produce learning artifacts that demonstrate critical thinking and pedagogical decisions.

Assessment: 100% coursework.

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#### **TDLL6328 Organisational learning (6 credits)**

This course explores the concept and processes of organisational learning and the learning organisation. It examines the strategies and tools employed to create and manage a learning and innovative organisation. Topics include managing chaos and complexity; organisation culture and change, scenario planning, storytelling, professional development, training and learning (especially e-learning), performance and evaluation of learning, and others.

Assessment: 100% coursework.

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### **TDLL6329    Multimedia in education (6 credits)**

This course examines methods for sourcing, selecting, using, adapting, and evaluating educational multimedia. The course also explores processes and tools for designing and developing educational multimedia products.

Assessment: 100% coursework.

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### **TDLL6330    Learning design and technology (6 credits)**

This course introduces learning design as a systematic approach to the design of learning experiences, tasks, environments, and resources. It emphasises attention to the learner's perspective, context, and needs in the overall learning journey, including informal, social, and experiential learning—not just instruction. The course provides a coherent theoretical perspective to the different layers of design involved and includes the design of design-aware learning analytics and feedback as an integral part of the learning design process. Students will have an opportunity to learn through engaging in the stages of design and development of different learning artifacts. The course also provides students with opportunities to explore the affordances of advanced digital tools and learning resources, interactive and collaborative learning, as well as the challenges involved through their learning design project.

Assessment: 100% coursework.

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### **TDLL6332    Digital resources for learning (6 credits)**

This course explores the design and development of learning objects (LO) to support teaching and learning. LOs are also examined as a strategy for effective management and delivery of institutional educational resources. The course explores different forms of LOs and examines processes of their design. Students will engage in practical activities, using software tools to develop LOs, and strategies for repurposing their use. The course addresses relevant theoretical issues including multimedia learning and cognitive processing of multimodal information.

Assessment: 100% coursework.

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### **TDLL6333    Mobile and ubiquitous technology in education (6 credits)**

This course provides a hands-on oriented and in-depth exploration of smart-phone/mobile devices in general, together with essential concepts and the impact of ubiquitous technologies for education and training. The potential for this technology in the next-generation learning systems to impact socio-technological and educational developments will be investigated through real-life examples. In addition to the theoretical and conceptual issues, students will develop practical knowledge in the design and development of simple educational applications for delivery via mobile technologies (e.g., iPhone, iPads, and iPods). Particular attention will be given to object-oriented programming and integration with cloud computing.

Assessment: 100% coursework.

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### **TDLL6334 Educational video and storytelling (6 credits)**

This course examines the impact of storytelling and digital media on educational and organisational settings. The integration of digital video and storytelling in education, perhaps more than any other medium, has the power to engage, captivate and enlighten today's learners. It aims not only to enable the development of media literacy and higher-order thinking skills but also to provide project-based learning experiences through authentic assessment. Students will design and produce compelling digital stories using multimedia platforms, integrating sound, graphics, and motion. Key topics include related learning theories and frameworks, content creation techniques, and various media and AI tools for storytelling. With a mix of theory and workshops, students will develop and showcase their work by producing educational videos and stories.

Assessment: 100% coursework.

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### **TDLL6335 Technology in education in China within a global context (6 credits)**

Rapid developments in the field of Information Technologies (IT) pose significant challenges to contemporary education systems. Many countries are engaged in developing education policies and pedagogical practices to transform these developments into tangible benefits. The role of IT in China's educational system has been increasing over the last two decades. Policies leveraging these developments have been implemented at both national and provincial levels. However, role of IT in Chinese educational contexts may differ from that in the educational contexts of other countries. In embracing educational opportunities provided by IT China also faces unique and significant challenges. Case-based and project-based approach will be adopted in this course.

Assessment: 100% coursework.

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### **TDLL6338 New literacies and technology (6 credits)**

Digital literacies comprise of information literacy, information and communication technology (ICT) literacy, and media literacy. They are some of the core 21st century workplace skills. Students as well as knowledge workers need to equip with such skills so that they will be able to define and solve a problem or challenge at hand, and analyse suitable electronic and print information resources, manage resources efficiently, and use the sources ethically. The course will also introduce the effective applications of social media for enhancing communication among different groups of an organisation.

Assessment: 100% coursework.

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### **TDLL7341 Game-based learning environments (6 credits)**

This course aims to introduce the main idea behind Digital Game-Based Learning (DGBL). It will investigate the pedagogical aspects of using games for learning, including commercial games in education settings and games that are created specifically for educational purpose. This course will review current techniques and trends in educational games. Issues related to design, enhancement implementation, and evaluation of DGBL will also be examined.

Assessment: 100% coursework.

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### **TDLL7345 Engaging adult learners (6 credits)**

This course examines the issues and challenges associated with engaging adult learners in various contexts, such as higher education, organisational learning and training, continuing professional development(CPD), or workplace education. It unpacks the perspectives, theories, and strategies that motivate and engage adults to learn. Key topics include adult learning theories and strategies, adult training design, and content creation techniques. Through various design workshops, students will collaborate on projects and produce learning artifacts that demonstrate critical thinking and pedagogical decisions.

Assessment: 100% coursework.

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#### **TDLL7347 Project management (6 credits)**

This course explores the project life cycle and Project Management (PM) techniques for managing and planning successful projects in organisations. Conceptual foundations from the PMBOK and their application are stressed, and applied using PM software. This course will run in project based, experiential learning mode (PBL) with participants completing a project ideally for an external client.

Assessment: 100% coursework.

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#### **TDLL7349 Data science and learning analytics (6 credits)**

This course provides a broad overview of the key concepts, skills, technologies, and applications in data science, with an emphasis on learning analytics and educational data mining. Learners will explore principles, methods and application cases in data pre-processing and storage, inferential and predictive analytics, supervised and unsupervised machine learning, association rule mining, text analytics, network analysis, data visualisation, as well as data ethics and privacy. Example cases will be discussed to illustrate how learning analytics needs to be connected to the targeted learning outcomes and pedagogical design considerations. Students will conduct labs, tutorials, and group project to gain hands-on experience on using industry-standard data mining and/or learning analytics packages to solve practical data-driven problems. It is strongly recommended that students have basic knowledge of statistics (equivalent to undergraduate level of introductory course on statistics) and are comfortable of using new IT tools.

Assessment: 100% coursework.

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#### **TDLL7351 Information system analysis and development (6 credits)**

The student should after the course have a basic knowledge of models, methods, and tools to be able to independently apply the principles for selection and evaluation of systems development methods.

Assessment: 100% coursework.

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#### **TDLL7352 Digital technology and intellectual property law in education (6 credits)**

This course explores the legal issues and ethical challenges related to digital technology and intellectual property (IP) law which is often involved in education. It investigates the introductory legal and ethical knowledge in relation to the design and implementation of educational technology and digital learning environment in both schools and organisational learning contexts. This course offers opportunities to students with non-legal background to consider digital technology policies and strategies from legal perspectives, and equips them with a sound understanding of legal principles in using digital technology

to support the innovation in IP through leadership roles at institutional level. Legal and ethical issues in digital technology and IP such as digital ownership, cyber-speech, cyberbullying in social networks, cybercrimes, copyright infringement and software, copyright in the digital environment, fair use of copyrighted work, the database right, privacy and data protection, and law enforcement in the information society as well as other emerging issues will be examined.

Assessment: 100% coursework.

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#### **TDLL7353 Artificial intelligence-enhanced learning technology (6 credits)**

This course provides students with essential knowledge of artificial intelligence (AI) and educational technology. It aims to develop students' practical skills and capabilities in applying AI and educational technology to solve contemporary educational problems with ethical awareness. The course introduces several popular coding tools with relevant examples and theories in AI in education. The topics progressively disclose the application of emerging AI technologies in education from general to specific and from simple to more complex educational applications. This is supplemented with classroom assignments, case studies, and individual and group projects to develop students' ability to understand and handle AI in education.

Assessment: 100% coursework.

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#### **TDLL7354 Artificial intelligence literacy: problems, design, and practice (6 credits)**

This course explores the evolving concept of artificial intelligence (AI) literacy in education through collaborative experiences, hands-on activities, and critical reflections. Students will work together to tackle real-world challenges posed by AI technologies, such as ethical dilemmas, equity, and the role of AI in teaching and learning, and critically examine AI literacies in diverse educational contexts. Students will develop their own critical understanding of AI literacy and prototyped solutions that address its challenges in the current era of rapid AI advancement.

Assessment: 100% coursework.

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#### **TDLL7355 Advanced topics in learning analytics and artificial intelligence in education (6 credits)**

This course explores advanced topics at the intersection of learning analytics and artificial intelligence (AI) in education. It provides students with a comprehensive understanding of how data-driven insights and AI technologies can transform teaching and learning processes. Key topics include content analysis in learning analytics, AI-powered automated feedback, knowledge tracing, intelligent tutoring systems, and prompt engineering with large language models (LLMs). The course also emphasises the ethical use of AI in educational settings, focusing on trustworthy and responsible AI practices. Through hands-on activities, discussions, and a final poster presentation, students will develop practical skills in applying cutting-edge tools and techniques to solve real-world educational challenges. This course equips students with the interdisciplinary knowledge needed to design, evaluate, and implement innovative educational technologies, preparing them to lead in the evolving field of AI in education.

Assessment: 100% coursework.

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#### **TDLL7356 Computational thinking for STEM education (6 credits)**

This course focuses on the foundations of computational thinking as a 21st-century literacy skillset for problem-solving, with a strong emphasis on the transformative role of artificial intelligence (AI) tools in modern education. It aims to cultivate students' understanding of computational thinking, its implications for emerging digital technologies such as AI, and its integration into technology education from a global perspective. The curriculum explores critical educational issues, including policy reforms, curriculum development, learning theories, teacher education, social justice, learning technologies, interdisciplinary teaching, and the application of AI tools to enhance teaching and learning practices. By showcasing the potential of AI to foster innovative pedagogy, personalised learning, and advanced problem-solving, this course equips K–12 trainee teachers—across kindergarten, primary, and secondary levels—to effectively incorporate computational thinking and AI into local school-based curricula. Through hands-on classroom teaching-learning experiences, interactive tutorials, and discussions with seasoned in-service teachers, students will gain valuable insights into real-world cases of implementing computational thinking and AI-enriched education.

Assessment: 100% coursework.

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#### **TDLL7357 Emerging technology for STEM learning and teaching (6 credits)**

This course examines a wide range of current and emerging tools, practices, and themes in STEM education. Additionally, it will review current and future research trends related to these tools and practices. The lessons are designed to equip students with the critical thinking and technical skills necessary to thrive in a rapidly evolving STEM teaching and learning environment. Students will learn to construct STEM related learning artifacts (e.g., code robots with sensors to help tackle real-world issues such as smart recycling bins and smart robotic trolleys). They will also work in groups to collect data and then derive the data to populate the database, like the use of SQL queries.

Assessment: 100% coursework.

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#### **TDLL7358 People-centric design for education using simulation technology (6 credits)**

This course offers an in-depth exploration of virtual reality (VR) beyond technical skills. It aims to provide students with a comprehensive understanding of how to utilise VR effectively and ensure a clear understanding of its purpose and intended audience. The course enables students to apply a people-centric approach in technology and content development, use systems thinking to ideate ecosystem-centric ways of applying technology, and promote social innovation and scientific inquiry using game-based learning. It also emphasises a Hand-Head-Heart holistic approach that activates a sense of purpose through hands-on skills, critical thinking, and storytelling skills to engage stakeholders, facilitate collaboration, and advance students' careers.

Assessment: 100% coursework.

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