Technology Innovation Management (TIMG)

Technology Innovation Management (TIMG) Courses

TIMG 5001 [0.5 credit]
Principles of Technology Innovation Management
Develops a common level of knowledge among students on topics in product and service development, technology entrepreneurship, and commercialization. These topics build on the literature in the fields of project management, leadership, industrial marketing, managerial economics and organizational behaviour.

TIMG 5002 [0.5 credit]
Technology Entrepreneurship
Key theories and models of technology entrepreneurship. Topics include the nature of technology products, collaborative experimentation and production of new products, assets, and their attributes, and the firm's asset ownership rights.

TIMG 5003 [0.5 credit]
Issues in Technology Innovation Management
Key readings relevant to technology innovation management. Topics include the introduction of new products to the global market, technology sourcing, intellectual property rights, industry trends, technology and ethics, new business opportunities and product identification, industry characteristics, regulation, international competition, ecosystems, economic development, and open source.

TIMG 5004 [0.5 credit]
Research Methods in Technology Innovation Management
Prepares students to undertake research in technology innovation management. Students learn to define interesting research problems and hypotheses relevant to technology innovation management, and learn the different research approaches used in the field of technology innovation management.
Prerequisite(s): TIMG 5001 and one of TIMG 5002 or TIMG 5003.

TIMG 5006 [0.5 credit]
Management of Software Engineering Projects
Models for the development of software. Software project management tools. Quality control. Risk assessment and management. Examples are drawn from the development of new technology products.
Includes: Experiential Learning Activity
Prerequisite(s): TIMG 5001and TIMG 5002.

TIMG 5008 [0.5 credit]
Foundations of Digital Transformation & Entrepreneurship
Antecedents, patterns, and consequences of agile digital business transformation, digital business development, digital business model innovation, disruptive digital technology, digital entrepreneurship, marketing and sales for a digital age. Managing digital business transformation and development of new digital value propositions in new and existing companies.
Includes: Experiential Learning Activity
Prerequisite(s): TIMG 5001 and TIMG 5002.

TIMG 5101 [0.5 credit]
Integrated Product Development
The new product introduction process and time-based competition, basic concepts of integrated product development, parallelism and concurrency of development activities, flexibility and agility, the voice of the customer, cross-functional teams, organizing for innovation, collaboration across firm boundaries, manufacturing and design.
Prerequisite(s): TIMG 5001 and TIMG 5002.

TIMG 5103 [0.5 credit]
Advanced Topics in Technology Innovation Management
In-depth exploration of an advanced topic in the field of technology innovation management. A different topic is covered each semester and more than one section, with different topics, may be offered in the same semester.
Prerequisite(s): one of TIMG 5004, TIMG 5005, or TIMG 5101.

TIMG 5104 [0.5 credit]
Directed Studies in Technology Innovation Management
The student explores, through extensive literature surveys, specific topics in the areas of technology innovation management. The objective is to enable study on a specific topic to acquire a suitable background to initiate and complete thesis work.

TIMG 5105 [0.5 credit]
Designing Innovation Communities
This course helps entrepreneurs and product managers understand the role of communities in innovation (eg. peer production and crowdsourcing). It provides them with tools for designing communities, and guidelines for selecting the technology for supporting a community.

TIMG 5106 [0.5 credit]
Open Source Business
The management of open source businesses. Topics may include company participation in open source projects, capturing value from open source projects, creating and managing open source ecosystems, open-source development, role of architecture in open source projects.

TIMG 5107 [0.5 credit]
Co-creating Inclusive Innovation
Students apply research in technology innovation management to co-create innovative solutions that reduce inequalities caused by social, political, and economic exclusion and have local context at their core. TIM students may collaborate with Indigenous communities, other organizations, and students in science, engineering, and other areas.
Includes: Experiential Learning Activity
Prerequisite(s): TIMG 5001 and one of TIMG 5002 or TIMG 5003.

TIMG 5110 [0.5 credit]
Project-based Learning
Provides an environment where TIM students in their second or third term can develop TIM Project proposals. The client may be a company (large or small), an entrepreneur, a not-for-profit, or a Carleton group. Projects will follow the TIM Gate process for student research.

TIMG 5201 [0.5 credit]
Technology and Wealth
Tools, models, approaches, theories and frameworks used to deploy technology to create and appropriate wealth.

TIMG 5202 [0.5 credit]
Moving Digital Transformation and Entrepreneurship Research into Business Practices
Tools, models, approaches, theories, and frameworks used to deploy digital technology to frame, create, appropriate, distribute, protect, sustain, convey, and deliver value. Streamlines the movement of research findings in digital transformation, business model innovation, and technology entrepreneurship into business practices.
Includes: Experiential Learning Activity
Prerequisite(s): TIMG 5008.

TIMG 5203 [0.5 credit]
Cross Border Businesses and Digital Innovation
Examines the mechanisms that leverage digital technology and innovation to scale the value of entrepreneurial cross-border businesses rapidly, early, and securely.
Includes: Experiential Learning Activity
Prerequisite(s): TIMG 5008.

TIMG 5204 [0.5 credit]
Responsible Artificial Intelligence
Ethical aspects of development/adoption of Artificial Intelligence (AI) and digital technologies in business practice. Responsible AI business opportunities in cross-border businesses. Responsible AI governance frameworks. AI inclusiveness, bias, fairness, transparency, explainability, accountability, data re-use, protection, and privacy. Assessment of trustworthy AI systems.
Includes: Experiential Learning Activity
Precludes additional credit for TIMG 5103.
Prerequisite(s): TIMG 5002 or TIMG 5008.

TIMG 5205 [0.5 credit]
Customer Value Creation in Technology Firms
Company value architecture and value propositions, design thinking and multiple stakeholder perspectives on value, new product and service design, digital value creation, technology and complementary assets, latent needs, co-design and user innovation, alignment of technology and business strategy, user experience, customer retention.
Includes: Experiential Learning Activity
Precludes additional credit for TIMG 5005 (no longer offered).
Prerequisite(s): TIMG 5002.

TIMG 5301 [0.5 credit]
Applied Analytics for Technology Innovation Management
Application of advanced business analytics in the domain of technology innovation management and technology entrepreneurship. Topics include supervised and unsupervised machine learning, anticipatory thinking, and anomaly detection, to inform managerial judgement and support strategic and operating decisions faced by managers and entrepreneurs.
Includes: Experiential Learning Activity
Prerequisite(s): TIMG 5001.

TIMG 5303 [0.5 credit]
Machine Learning for Technology Entrepreneurship Problem-Solving
Application of machine learning tools to co-create solutions to entrepreneurial problems, with an emphasis on unstructured text analytics. Topics include machine learning tools, application of topic modeling and and text analytics, generation of practical competitive insights for managers, and analysis of publicly-available sources including websites.
Includes: Experiential Learning Activity
Prerequisite(s): TIMG 5002.

TIMG 5901 [1.0 credit]
M.Eng. Project
Includes: Experiential Learning Activity

TIMG 5905 [1.0 credit]
M.Ent. Project
Includes: Experiential Learning Activity

TIMG 5907 [1.0 credit]
M.A.B.A. Project
Master of Applied Business Analytics Project.
Includes: Experiential Learning Activity

TIMG 5908 [1.0 credit]
**Master of Digital Transformation & Entrepreneurship
Project**
Final TIM Master of Digital Transformation &
Entrepreneurship Project.
Includes: Experiential Learning Activity

TIMG 5909 [2.0 credits]
Master's Thesis
Includes: Experiential Learning Activity