

# Technology Innovation Management (TTMG)

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## Technology Innovation Management (TTMG) Courses

### TTMG 5001 [0.5 credit]

#### Management Principles for Engineers

Develops a common level of knowledge among students on topics in project management, leadership, industrial marketing, managerial economics and organizational behaviour. These topics are relevant for engineers and computer scientists who manage the engineering processes that deliver innovative telecommunications systems, products and services.

### TTMG 5002 [0.5 credit]

#### Telecommunications Technology

Fundamentals of telecommunications technology with emphasis on importance of bandwidth, communications reliability and networks. Topics include: information sources and coding of outputs; channel characteristics; signals; networks, signalling and switching; standards and regulation; major world systems and operators; and the thrust of new and future technology.

### TTMG 5003 [0.5 credit]

#### Issues in Telecommunications

Discussion of key readings relevant to the telecommunications industry. Topics include the introduction of new products to the global market, technology sourcing, intellectual property rights, industry trends, technology and ethics, user interface design, new business opportunities and product identification, industry characteristics, regulation and international competition.

### TTMG 5004 [0.5 credit]

#### Management of Design Systems

The focus is on how to design, maintain, expand and evolve organizations that deliver hardware, software and systems designs, and on the methods and tools used to improve their performance. Topics include: essence of design; how to set-up and lead fast-to-market organizations.

Prerequisite(s): TTMG 5001 and TTMG 5002.

### TTMG 5005 [0.5 credit]

#### Management of Telecommunications System Design

The focus is on the groups that evolve the architecture and technological infrastructures of firms and on product management. Topics include: relationship between architecture and product management; appropriability regimes; technology and complementary assets; managing projects that deliver products at different stages of their life cycles.

Prerequisite(s): TTMG 5001 and TTMG 5002.

### TTMG 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 software development in telecommunications applications.

Prerequisite(s): TTMG 5001 and TTMG 5002.

### TTMG 5008 [0.5 credit]

#### Corporate Communications Networks

Communications networks as a vital resource within organizations. Private networks as an infrastructure for information flow within a firm and across its interfaces. Applications and operations of corporate telecommunications networks. Networks as a source of competitive advantage. Implementation issues.

Prerequisite(s): TTMG 5001 and TTMG 5002.

### TTMG 5100 [0.5 credit]

#### Communications Standards

Importance of global standards in telecommunications and information technology for product development and business. Relevant public standards classified by type. The standards setting process. Formulation and execution of standards setting strategies. Integrating the firm's standards program with engineering processes, product management, systems groups and marketing.

Prerequisite(s): TTMG 5001 and TTMG 5002.

### TTMG 5101 [0.5 credit]

#### Integrated Product Development

The new product introduction process and time-based competition, basic concepts of integrated product development (concurrent engineering), the voice of the customer, quality function deployment, cross-functional teams, integrating information systems and technical tools, organizational support, manufacturing and design, cost estimation, implementation problems.

Prerequisite(s): TTMG 5001 and TTMG 5002.

### TTMG 5102 [0.5 credit]

#### Managing Full-Scale Production

Overall philosophy of just-in-time and time-based competition; just-in-time production and manufacturing resource planning; total quality management; socio-technical systems and employee participation; advanced manufacturing; manufacturing and facilities strategy, capacity planning; manufacturing flexibility; product/process evolution and the experience curve; service aspects of manufacturing.

Prerequisite(s): TTMG 5001 and TTMG 5002.

### TTMG 5103 [0.5 credit]

#### Advanced Topics in Telecommunications Technology Management

In-depth exploration of an advanced topic in the field of telecommunications technology 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 TTMG 5004, TTMG 5005, TTMG 5101, or TTMG 5102.

**TTMG 5104 [0.5 credit]****Directed Studies in Design and Manufacturing Management**

The student explores, through extensive literature surveys, specific topics in the areas of design and manufacturing management. The objective is to acquire a suitable background to initiate and complete thesis work requiring this preparation. Precludes credit for any other directed studies in the program.

**TTMG 5901 [1.0 credit]****M.Eng. Project****TTMG 5909 [1.0 credit]****M.Eng. Thesis**

**Summer session:** some of the courses listed in this Calendar are offered during the summer. Hours and scheduling for summer session courses will differ significantly from those reported in the fall/winter Calendar. To determine the scheduling and hours for summer session classes, consult the class schedule at [central.carleton.ca](http://central.carleton.ca)

Not all courses listed are offered in a given year. For an up-to-date statement of course offerings for the current session and to determine the term of offering, consult the class schedule at [central.carleton.ca](http://central.carleton.ca)