

Interactive Multimedia and Design (IMD)

Interactive Multimedia and Design (IMD) Courses

IMD 1000 [0.5 credit]

Introduction to Interactive Multimedia Design

Overview of interactive multimedia design including copyright, user-centred design, web design and mark-up languages, general logic design, multimedia project management, design processes for animated film, video game development, visual effects in movies, ethics and current trends in the field.

Precludes additional credit for ITEC 1100.

Prerequisite(s): restricted to students in the B.I.T. degree program.

Lecture three hours a week.

IMD 1001 [0.5 credit]

Visual Communication

Visual communication techniques commonly used to draft concepts and ideas to support scripts for film, animation, HCI, and/or game development. Topics include: storyboarding, composition, vanishing point, line quality, visual timing, perspective, depth of field, body language and life drawing. A digital drawing tablet is required.

Prerequisite(s): restricted to students in the B.I.T. degree program.

Workshop three hours a week.

IMD 1002 [0.5 credit]

Visual Dynamics

Fundamentals of composition with emphasis on realistic rendering. Students learn how to execute thumbnails and design comprehensives. Topics include illustration, type, colour, texture, proximity and unity, alignment, repetition and continuity, contrast, size relationships, balance, rhythm, negative space, cropping and view selection.

Prerequisite(s): restricted to students in the B.I.T. degree program.

Workshop three hours a week.

IMD 1004 [0.5 credit]

Design Processes

Design fundamentals using industry standard software techniques and workflow are explored. Topics include: gestalt principles, grids systems, colour, texture, raster and vector image production, and typography. Students design for publication to output such as Web, print, and electronic book formats. Required digital drawing tablet.

Prerequisite(s): restricted to students in the B.I.T. degree program.

Workshop three hours a week.

IMD 1005 [0.5 credit]

Web Development

Introduction to Web development. Combining graphics, text, audio, and video to create Web sites; developing different, major working Web sites on an individual basis and in groups, using valid xHTML, cascading style sheets (CSS), JavaScript and XML structures.

Precludes additional credit for ITEC 1005.

Prerequisite(s): restricted to students in the B.I.T. degree program.

Workshop five hours a week.

IMD 2003 [0.5 credit]

Audio and Video

The creation, production and editing of audio and video for multimedia applications. Topics include single camera recording and capture techniques through to post-production editing. Emphasis is placed on production and operation skills while adhering to industry standard costs and deadlines.

Prerequisite(s): second-year standing in the IMD program.

Workshop four hours a week.

IMD 2006 [0.5 credit]

Introduction to Computer Games

Basic concepts in the design and development of computer games, including: fundamentals of production cycle, genres, gameplay and game mechanics, story and character development, level design, artificial intelligence for games, game user interface, and common development tools.

Prerequisite(s): BIT 2400 and second-year standing in the IMD program.

Lecture three hours a week, tutorial/laboratory two hours a week.

IMD 2007 [0.5 credit]

Intro to 3D Animation

Introduction to the basics of 3D computer animation. Topics include: introduction of 3D animation packages, 12 Principles of Animation, character design, character animation (walking/locomotion, motion, and poses), soft-body animation (shape interpolation and facial animation), and acting for animators.

Precludes additional credit for IMD 2005 (no longer offered).

Prerequisite(s): IMD 1001 and second-year standing in the IMD program.

Lecture/workshop three hours a week.

IMD 2900 [1.0 credit]

Design Studio 1

Advanced practical studio-based sessions in project management and web development. Topics include: project management styles, team collaboration techniques, prototyping, project and content management, marketing, testing, and product evaluation culminating into a major group web project using client-side and server-side technologies.

Prerequisite(s): second-year standing in the IMD program.

Studio/lecture eight hours a week.

IMD 3002 [0.5 credit]**3D Computer Graphics**

Technical aspects of 3D computer graphics. Homogeneous transformations, viewing pipeline, cinematography, modeling techniques (explicit and implicit), scene composition, level of detail methods, advanced lighting techniques (BRDF, IBL, subsurface-scattering), 2D/3D texturing, local/global illumination, match-moving, rendering methods, and shaders. Prerequisite(s): BIT 1101, BIT 2400 and IMD 3900. Lectures three hours a week, tutorial/laboratory two hours per week.

IMD 3003 [0.5 credit]**Communication Skills for IMD**

Development of competence in written and oral communication related to multimedia design. Needs analyses, use-case scenarios, development and management of content, technical reports, and related project documents; oral presentations. Prerequisite(s): restricted to students in the B.I.T. degree program. Lecture and tutorial three hours a week.

IMD 3004 [0.5 credit]**Human Computer Interaction and Design**

Introduction to concepts centered on Human-Computer Interaction from hardware and software perspectives. Topics include design principles, usability principles and engineering, solving user-centred problems, device interaction, and graphical user interface design (2D and 3D interfaces). Prerequisite(s): third-year standing in the IMD program. Lectures three hours a week.

IMD 3005 [0.5 credit]**Sensor-Based Interaction**

Development of interactive applications that connect the physical and virtual space. Topics include using external devices and sensor hardware, sensing objects and people, gestural input, computer vision, processing of live audio input, and networked software and devices. Precludes additional credit for IMD 2001 (no longer offered). Prerequisite(s): BIT 2400. Lecture/ workshop four hours a week.

IMD 3006 [0.5 credit]**Software Design for Multimedia Applications**

Provides students with knowledge and expertise to design and develop complex software systems and programs for common multimedia applications. Topics include: data structures, system and requirement analysis, component identification, common design patterns, and working with reusable components. Prerequisite(s): BIT 2400. Lecture three hours a week, tutorial/laboratory two hours a week.

IMD 3900 [1.0 credit]**Design Studio 2**

Intermediate practical studio sessions covering the creative aspects of 3D graphics and animation. Topics include: environment and character modeling, texturing, using bump/displacement maps, advanced materials, 3D cameras, various lighting, keyframe animation, and rendering methods. Prerequisite(s): IMD 2007 and third-year standing in the IMD program. Studio/lecture eight hours a week.

IMD 3901 [1.0 credit]**Design Studio 3**

Studio-based course focuses on interdisciplinary group work, and the use of reality-based/ natural-based interfaces for multiuser interaction, understanding social and environmental context in physical design, basic networking, advanced sound design, and haptic feedback. Prerequisite(s): third-year standing in the IMD program, IMD 2900 and IMD 3005. Studio/lecture eight hours a week.

IMD 4002 [0.5 credit]**Technology and Culture**

An examination of the relationship between communication technology and society. The course examines the factors that contribute to changes in the collection, storage and distribution of information and the cultural implications of these changes. Prerequisite(s): third-year standing in the IMD program. Seminar three hours a week.

IMD 4005 [0.5 credit]**Advanced Topics in Multimedia**

Advanced topics in multimedia industry not ordinarily treated in the regular course program due to their contemporary subject matter. The choice of topics varies from year to year. Precludes additional credit for IMD 4004 (no longer offered). Prerequisite(s): fourth-year standing in the IMD program. Lecture three hours a week.

IMD 4006 [0.5 credit]**Advanced Computer Gaming**

Provides students with knowledge and expertise to design and develop professional computer games with advanced and novel features. Topics include: target audience and inclusive/accessible design, interaction design and emerging technologies, artificial intelligence, interactive stories, procedural content generation, serious games and gamification. Prerequisite(s): IMD 2006 and IMD 3002. Lecture three hours a week, tutorial/laboratory two hours a week.

IMD 4007 [0.5 credit]**Advanced Animation and Visual FX**

Advanced topics in animation and visual FX, covering the more technical aspects, including: match-moving, image-based lighting, chromakeying, motion capture of face and body, character rigging (Forward/Inverse kinematics, controls, weighting), retargeting, particle systems, and dynamic systems (cloth, fluid, and hair).

Precludes additional credit for IMD 4003 (no longer offered).

Prerequisite(s): IMD 2007, IMD 3002 and IMD 3900.

Lecture three hours a week, tutorial/laboratory two hours a week.

IMD 4008 [0.5 credit]**Mobile User Interface Design and Development**

Design, development, and evaluation of user interfaces for mobile applications. Topics include: user-centered design methods and develop mobile applications employing the various input and output capabilities available on mobiles, e.g., multi-touch, device motion/rotation, video/audio capture, vibration.

Prerequisite(s): IMD 3004 and IMD 3006.

Lecture three hours a week, tutorial/laboratory two hours a week.

IMD 4901 [1.5 credit]**Senior IMD Project**

Student-initiated design project, developed in association with a project supervisor, and external industry advisor, supported by a written report (with printed and electronic versions), seminar discussions, and appropriate methods of two and/or three- dimensional representation. All proposals must be approved by the Program Project Committee.

Prerequisite(s): IMD 2900, IMD 3900, IMD 3901 and fourth-year standing in the IMD program.

Tutorial hours arranged.

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

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