Interactive Multimedia and Design (IMD)

School of Information Technology
Faculty of Engineering and Design

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.
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 drewing. 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.
Prerequisite(s): restricted to students in the B.I.T. degree program.
Workshop five hours a week.

IMD 2000 [0.5 credit]
Multimedia Data Management
Issues regarding the back-end organisation of information and multimedia with a specific focus on databases and database design, server-side scripting, the structured query language (SQL), storage and compression of media, handling media over a network (including media streaming), digital rights management, and digital watermarking.
Precludes additional credit for COMP 2006.
Prerequisite(s): BIT 1400 and IMD 1005.
Lecture three hours a week, tutorial/ laboratory two 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 2005 [0.5 credit]
Motion Graphics
Visual communication through kinetic elements; focusing on dynamic form, speed, rhythm, and quality of motion. Topics include basic animation principles, rhythm and timing, design and composition, kinetic typography, sound synchronization, storyboard development, compositing, and rendering for target platforms.
Precludes additional credit for IMD 2002 (no longer offered).
Prerequisite(s): second-year standing in the IMD program.
Lecture/ workshop three hours a week.

IMD 2900 [1.0 credit]
Design Studio 1
Web application development. Using a multidisciplinary approach, teams develop a comprehensive, Web-based application. Topics include users, storyboarding, data management, prototyping, project and content management, marketing, testing, and product evaluation. Client- and server-side technologies will be used to enhance functionality.
Prerequisite(s): second-year standing in the IMD program.
Studio/lecture eight hours a week.

IMD 3001 [0.5 credit]
Aspects of Product Design Methodology
Important issues in designing successful computerized products, including design guidelines, usability testing and user-needs analysis. Experienced designers and researchers from industry participate.
Also listed as PSYC 4800.
Prerequisite(s): third-year standing in the IMD program.
Lectures three 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, advanced lighting techniques (BRDF, IBL, subsurface-scattering), 2D/3D texturing, local/global illumination, image-based and non-photorealistic rendering, and rendering effects.
Prerequisite(s): 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 3900 [1.0 credit]
Design Studio 2
Introduction to the artistic perspective on 3D graphics and animation. Practical studio sessions; use of popular modeling and animation packages; modeling, texturing, materials, cameras, lighting, keyframe animation, rendering.
Prerequisite(s): third-year standing in the IMD program.
Studio/lecture eight hours a week.

IMD 3901 [1.0 credit]
Design Studio 3
Device design. Studio-based projects focus on one or more special areas in multimedia, information and interaction design. Device design, form factors, information appliances, and computer-supported collaborative work.
Prerequisite(s): third-year standing in the IMD program and IMD 2900.
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 4003 [0.5 credit]
3D Computer Animation
Advanced topics in computer animation: principles of animation, motion capture, forward/inverse kinematics (hierarchical systems), key-framing, motion editing/retargeting/interpolation, soft-body animation (freeform deformation and shape interpolation), character animation (walking/locomotion, rigging, weighting, and facial animation), particle systems, dynamic systems (cloth, fluid, and hair), behavioural animation, match-moving.
Prerequisite(s): IMD 3002.
Lecture three hours a week, tutorial/laboratory two 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 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, and fourth-year standing in the IMD program.
Tutorial hours arranged.

IMD 4902 [1.0 credit]
Design Studio 4
Lectures and projects on interactive multimedia systems for art and entertainment, especially computer games, covering the production process from idea to design, development and testing, and also discussing related topics and technologies such as management skills, character and story development, game engines, and online games.
Precludes additional credit for IMD 4900.
Prerequisite(s): IMD 2900, IMD 3002 and fourth-year standing in the IMD program.
Studio/lecture eight hours a week.

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