Unit sets: Multimedia and Technologies

Year offered: 2010
Admissions: Yes

Unit sets
These unit sets have been designed such that introductory units have no prerequisites. Later units in each set may have earlier units as prerequisites.

Due to timetabling constraints it may not be possible to complete all units in a University Wide Elective Set. Consult with your course coordinator and relevant discipline coordinators prior to undertaking interfaculty studies.

Please be aware that the units you complete in a University Wide Elective Sets will appear on your academic transcript but the unit set title will not unless the set exists as a minor in your course.

3D Visualisation unit set
3D Visualisation unit set
KIB203 Introduction to 3D Computer Graphics
KIB221 Animation: CG Toolkit
KIB316 Virtual Environments
KIB325 Real-Time 3D Computer Graphics

Advanced Interactive Media unit set
Advanced Interactive Media unit set
KKB216 Graphical Development Environments for Media Interaction
KIB205 Programming for Visual Designers and Artists
KIB309 Embodied Interactions
KIB314 Tangible Media
Note: KKB216 is not offered in 2010

Animation unit set
Animation unit set
KIB105 Animation and Motion Graphics
KIB108 Animation History and Practices
KIB203 Introduction to 3D Computer Graphics
KIB225 Character Development, Conceptual Design and Animation Layout
KVB105 Drawing for Design
KVB106 Drawing for Animation

Game Design unit set
Game Design unit set
INB180 Computer Games Studies
INB181 Introduction to Games Production
KIB201 Concept Development for Game Design and Interactive Media
KIB202 Enabling Immersion

Games Technology unit set
Games Technology unit set
Select four units from
ITB001 Problem Solving and Programming
ITB003 Object Oriented Programming
ITB008 Modelling Analysis and Design
ITB702 Algorithms and Data Structures
ITB712 Software Engineering Studies
ITB746 Modelling and Animation Techniques
MAB281 Mathematics for Computer Graphics
ITB749 Scientific Programming

Graphic Design unit set
Graphic Design unit set
KIB101 Visual Communication
KIB230 Interface and Information Design
KIB335 Typography and Illustration
KIB338 Print Media
KVB204 Graphic Design

Interactive and Visual Design unit set
Interactive and Visual Design unit set
Note: The title of this unit set was changed from 'Communication Design' to 'Interactive and Visual Design' at the start of 2009.
KIB101 Visual Communication
KIB102 Visual Interactions
KIB103 Introduction to Web Design and Development
KIB104 Digital Media

Interactive Media unit set
Interactive Media (IT) unit set
UNIT SYNOPSISES

INB180 COMPUTER GAMES STUDIES
This unit is designed to give you a clear understanding of the socio-cultural issues that affect the computer game industry. Through critical review of games and games industry literature, playing games and actively participating in classroom discussion you will develop your capacity to join in the discourse about the design, impact and future direction of computer games in our society.

Antirequisites: INN180, ITB750 Credit points: 12 Contact hours: 3 per week Campus: Gardens Point Teaching period: 2010 SEM-1

INB181 INTRODUCTION TO GAMES PRODUCTION
This subject will provide you with knowledge and skills in games production. By gaining an overview of the production process, you will learn how the technology and the people involved integrate into a coherent and efficient manufacturing process. By the end of this subject you will have the knowledge to conceive, create, integrate and optimise tools and personnel into a complete games production system.

Antirequisites: INN181 Equivalents: ITB751, ITN751 Credit points: 12 Contact hours: 3 per week Campus: Gardens Point Teaching period: 2010 SEM-2

ITB001 PROBLEM SOLVING AND PROGRAMMING
This unit aims to give you a positive introduction to the analytical skills required in computer programming. It assumes you have little or no previous programming experience. The unit emphasises generic programming concepts and related problem-solving strategies. The skills you learn in the unit will be applicable to a wide variety of commonly-used, industrially-significant programming and scripting languages.
Prerequisite(s): Nil Corequisite(s): Nil Credit points: 12 Contact hours: 4 Campus: Gardens Point Teaching period: 2008 SEM-1 and 2008 SEM-2 Incompatible with: ITB111

ITB002 IT PROFESSIONAL STUDIES
This unit aims to develop your professional skills and capabilities by providing theoretical and practical opportunities in the following areas: how IT teams operate, effective oral and written communication, team meeting processes and procedures, ethical and social responsibilities of the IT professional, information literacy and traits for life long learning. Demonstrable competency in these areas will be an expectation in subsequent units and will be developed further in them.
Prerequisite(s): Nil Credit points: 12 Contact hours: 3 per week Campus: Gardens Point and Carseldine Teaching period: 2008 SEM-1 and 2008 SEM-2 Incompatible with: ITB116

ITB003 OBJECT ORIENTED PROGRAMMING
Object Oriented Programming aims to develop your software design and development skills gained in ITB001, taking you from procedural programming and problem solving into an Object Oriented approach. This unit is required by all IT majors, and is designed to be complimentary to ITB008: Modelling, Analysis and Design. You will use industry standard design approaches coupled with an industrial strength OO programming language to design and implement a real-life software application. Along the way, you will gain a solid foundation in the principals of OOP, including encapsulation, polymorphism and inheritance, allowing you to solve real-world problems using the Object-Oriented design paradigm.
Prerequisite(s): ITB001 Credit points: 12 Contact hours: 4 Campus: Gardens Point Teaching period: 2008 SEM-1 and 2008 SEM-2 Incompatible with: ITB112

ITB008 MODELLING ANALYSIS AND DESIGN
The aim of this unit is to introduce students to the range of application systems found within organisations, the basic concepts of object orientation, the theory and practice of object modelling, analysis and design, the principles of software engineering and the team processes required to work in a modelling, analysis and design team.
Prerequisite(s): ITB002 Credit points: 12 Contact hours: 3 Campus: Gardens Point Teaching period: 2008 SEM-1 and 2008 SEM-2 Incompatible with: ITB118

ITB254 INTERACTION DESIGN
The aim of this unit is to provide you with an understanding of the theory, practices and challenges associated with the development of creative interactive design and human computer interaction.
Prerequisite(s): ITB002 Credit points: 12 Contact hours: 3 per week Campus: Gardens Point Teaching period: 2008 SEM-2
ITB257 MULTIMEDIA SYSTEMS
This unit will explore the concepts underpinning Interactive Digital Technologies and lead to an understanding of the role played by these technologies in the overall knowledge of a computer professional. Whatever direction you choose in your future employment, all sections of the market place will utilise some aspects of multimedia technology. Knowledge in this expanding area will ensure you have the skills appropriate to any field.
Prerequisite(s): TBA Credit points: 12 Contact hours: 3 per week Campus: Gardens Point Teaching period: 2008 SEM-1 Incompatible with: ITN257

ITB259 ADVANCED MULTIMEDIA SYSTEMS
This advanced level unit will give you high level design and development skills in some of the current and emerging areas of Multimedia. Web delivered applications, standalone systems and installations will be included. It will endeavour to give you an in-depth understanding of interactive Multimedia Systems. You will be given the theoretical basis and practical skills to motivate you in the design and creation of a state-of-the-art system in this discipline. In the process it will encourage a professional team approach, appropriate to the industry environment.
Prerequisite(s): ITB257 Credit points: 12 Contact hours: 3 per week Campus: Gardens Point Teaching period: 2008 SEM-2 Incompatible with: ITN259

ITB702 ALGORITHMS AND DATA STRUCTURES
Fundamentally, all computer programs are an interaction between algorithms and data structures. Algorithms define the sequence of computational steps performed by the program. Data structures determine how the program stores and retrieves information. Both have a major impact on the program's efficiency and effectiveness. In this unit you will be introduced to a variety of common programming abstractions, including both algorithmic problem-solving strategies (e.g., divide-and-conquer, iterative improvement, etc), and commonly-used data structures (e.g., binary trees, indexed tables, etc). In particular, you will learn techniques for assessing the efficiency of algorithms (through complexity analysis), verifying that algorithms are correct (by identifying invariant properties), and implementing data structures in practice (as abstract data types).

Prerequisite(s): ITB003 Credit points: 12 Campus: Gardens Point Teaching period: 2008 SEM-1

ITB712 SOFTWARE ENGINEERING STUDIES
This unit is the starting point for the specialist knowledge required in the Software Architecture major. Up to this stage units have primarily focussed on learning programming and design skills. This unit introduces you to the practice of following a formal process to guide the development of software. Using a process as a guide, you will look at each of the major activities involved in developing a software system. You will also learn how to manage and control the software development process for a large project when a number of team members are involved in the development. This unit provides the foundation you will need for many later units, and develops the professional practice of working on large software systems.
Prerequisite(s): ITB003 and ITB008 Credit points: 12 Contact hours: 3 Campus: Gardens Point Teaching period: 2008 SEM-1 Incompatible with: ITB612

ITB746 MODELLING AND ANIMATION TECHNIQUES
This unit will provide you with the knowledge and skills to use an industry standard graphics API to implement graphics applications and to develop a basic real-time animation system using an industry standard language.
Prerequisite(s): ITB711, ITB749 & MAB281 Credit points: 12 Contact hours: 3 Campus: Gardens Point Teaching period: 2008 SEM-1 Incompatible with: ITB648, ITB649

ITB749 SCIENTIFIC PROGRAMMING
The aim of this unit is to introduce you to the computational programming techniques required in the development of software for games and simulation. You will cover the theoretical aspects and the techniques required to implement these.
Prerequisite(s): ITB003 Credit points: 12 Contact hours: 3 Campus: Gardens Point Teaching period: 2008 SEM-1

KIB101 VISUAL COMMUNICATION
Communication Design deals with visual communication and the creation of meaning through images. This unit will introduce you to the principles, production and presentation of visual design and communication.
Equivalents: KIB801 Credit points: 12 Contact hours: 4 per week Campus: Kelvin Grove Teaching period: 2010 SEM-1 and 2010 SEM-2

KIB102 VISUAL INTERACTIONS
This unit further develops interface design skills for communications technologies including design priorities, Interaction, visual systems, refinement of
concepts, project analysis and problem solving through presentation models. 

**Prerequisites:** KIB101 or KIB801 or KPB101 or KPB150 or KPB155  
**Equivalents:** KIB802  
**Credit points:** 12  
**Contact hours:** 3.5 per week  
**Campus:** Kelvin Grove  
**Teaching period:** 2010 SEM-2

**KIB103 INTRODUCTION TO WEB DESIGN AND DEVELOPMENT**  
This unit provides an introduction to theories and skills underpinning the application of multimedia technology with the Creative Industries, providing a foundation of conceptual and practical skills related to contemporary modes of electronic hypermedia production, communication and publishing.  
**Antirequisites:** INB271, KIP403  
**Equivalents:** KIB807, KKB007, KKB818  
**Credit points:** 12  
**Contact hours:** 3 per week  
**Campus:** Kelvin Grove  
**Teaching period:** 2010 SEM-1

**KIB104 DIGITAL MEDIA**  
This unit explores multimedia development and design concepts and practices and investigates the user and user interaction principles.  
**Equivalents:** KIB808  
**Credit points:** 12  
**Contact hours:** 3 per week  
**Campus:** Kelvin Grove  
**Teaching period:** 2010 SEM-1 and 2010 SEM-2

**KIB105 ANIMATION AND MOTION GRAPHICS**  
This unit provides an introduction to animation and motion graphics concepts and practices, with an emphasis on principles of design in motion.  
**Equivalents:** KIB804  
**Credit points:** 12  
**Contact hours:** 3 per week  
**Campus:** Kelvin Grove  
**Teaching period:** 2010 SEM-2

**KIB108 ANIMATION HISTORY AND PRACTICES**  
The unit is an introductory examination of the development of animation. It addresses social, cultural, economic and technological themes that have shaped notable practitioners and established animation as a significant medium for the expression of popular culture, artistic experiment and philosophical, social and political comment.  
**Equivalents:** KIB825  
**Credit points:** 12  
**Contact hours:** 3 per week  
**Campus:** Kelvin Grove  
**Teaching period:** 2010 SEM-1

**KIB201 CONCEPT DEVELOPMENT FOR GAME DESIGN AND INTERACTIVE MEDIA**  
This unit addresses theoretical issues associated with non-linear story structures and interactive narratives through the analysis of game structures, the creation of original game ideas and the application of techniques of information design to the structuring of non-narrative content. Addressing the creative and analytical roles of writers, conceptual designers and information designers in the context of interactive digital media and the Creative Industries.  
**Equivalents:** KIB816  
**Credit points:** 12  
**Contact hours:** 3 per week  
**Campus:** Kelvin Grove  
**Teaching period:** 2010 SEM-1

**KIB202 ENABLING IMMERSION**  
As creative practitioners within a highly networked technological society, it is important to develop a critical understanding of how the application of technology influences modes of communication, production processes and creative practices, particularly within the Creative Industries. This unit provides an introductory overview of the philosophies underlying applications of technology, and critically examines current applications in order to explore creative visions of future technology.  
**Prerequisites:** KIB201  
**Equivalents:** KIB814  
**Credit points:** 12  
**Contact hours:** 3 per week  
**Campus:** Kelvin Grove  
**Teaching period:** 2010 SEM-2

**KIB203 INTRODUCTION TO 3D COMPUTER GRAPHICS**  
The field of 3D computer graphics has grown from being a highly specialist field, supported by large film studios, into a vast and growing industry. Throughout film and television, scientific visualization, industrial and architectural design, physical modelling, animation and gaming; 3D visualisation has become a significant contributor to the construction of virtual worlds and the simulation of physical environments. This unit provides an introduction to the world of 3D graphics, paying particular attention to pre-production techniques, project management, 3D modelling techniques, and designing virtual environments. It establishes a foundation for advanced study in subsequent units on Real-time Computer Graphics and Virtual Environments. Theoretical understandings gained through lectures will be supplemented with technical skills in workshops, and applied to the production of 3D environments in design studios.  
**Credit points:** 12  
**Contact hours:** 3 per week  
**Campus:** Kelvin Grove  
**Teaching period:** 2010 SEM-1

**KIB205 PROGRAMMING FOR VISUAL DESIGNERS AND ARTISTS**  
As part of a contemporary art and design production, practitioners often need to understand aspects of computer programming. This unit provides artists and designers with an introduction to computer programming. It demonstrates how artists and designers use programming within their practices and introduces the principles of programming that will allow you to use computing as a tool for art and design innovation. The unit is presented in a manner that is suited to the learning styles of visual designers and artists, and requires no previous computer programming experience. These skills will
developed and applied to the development of art and design outcomes in a studio setting.

**Antirequisites:** INB270  **Assumed knowledge:** Fluency in the use of typical multimedia software applications is assumed knowledge.  **Equivalents:** KIB210  **Credit points:** 12  **Contact hours:** 4 per week  **Campus:** Kelvin Grove  **Teaching period:** 2010 SEM-2

**KIB221 ANIMATION: CG TOOLKIT**

CG Toolkit offers an in-depth look at the tools of animated production from within a studio setting. Continuing from Animation Studio 1: Preproduction, this unit looks at the tools and the processes involved in creating high level successful 3d computer animations for game development, film or television production, web or emergent media.

**Prerequisites:** (KIB203 or KIB107) and KIB220  **Equivalents:** KIB213  **Credit points:** 12  **Contact hours:** Up to 6 per week  **Campus:** Kelvin Grove  **Teaching period:** 2010 SEM-2

**KIB225 CHARACTER DEVELOPMENT, CONCEPTUAL DESIGN AND ANIMATION LAYOUT**

This unit emphasizes production in practice. By considering type and generic attributes within a technological context, you will be guided through the key concepts involved in the development of working drawings and final artworks.

**Prerequisites:** KIB203 or KIB107  **Equivalents:** KIB106, KIBB07  **Credit points:** 12  **Contact hours:** 3 per week  **Campus:** Kelvin Grove  **Teaching period:** 2010 SEM-2

**KIB230 INTERFACE AND INFORMATION DESIGN**

With the advent of new technologies for communication, graphical user interfaces have become fundamental to the design of effective communication, and a key factor in the uptake, ease of use and experience of technology systems. This unit builds upon knowledge and skills acquired in units on visual communication and Web design to establish the knowledge and skills required to design and produce effective visual interfaces for technology applications such as Web, small screens in mobile media, and interactive displays. It will cover theories and principles of visual communication, information architecture and user experience design, which will be applied in the production of interfaces for interactive media and digital projects. The unit will be taught through a combination of lectures, tutorials, and practical classes, in which skills and knowledge will be applied.

**Prerequisites:** KIB101 or KIB801  **Equivalents:** KIB211  **Credit points:** 12  **Contact hours:** 3 per week  **Campus:** Kelvin Grove  **Teaching period:** 2010 SEM-1

**KIB309 EMBODIED INTERACTIONS**

Interaction with technology has advanced beyond the desktop paradigm of mouse and keyboard to embodied interfaces that incorporate video tracking, audio input, and gestural interaction techniques. Applications range from wearable technology to tangible media installations. This unit introduces an experimental field of interactive media design through the practical application of the processes and techniques of tangible media applications. Lectures, which provide the theoretical grounding of the study area, methodologies and examples of the application of tangible media are complemented by practical classes which extend the technical skills acquired in Programming for Designers and Artists and support the development of tangible media outcomes within design studios.

**Prerequisites:** KIB205 or INB385  **Equivalents:** KIB311  **Credit points:** 12  **Contact hours:** 3 per week  **Campus:** Kelvin Grove  **Teaching period:** 2010 SEM-1

**KIB314 TANGIBLE MEDIA**

This unit extends the understandings of tangible media interfaces and applications gained in the embodied media unit. In this unit students will develop a tangible media project from concept through to design, production, evaluation, and exhibition. Theoretical understandings on tangible media object design, interaction and installation gained through lectures will be supplemented with production skills in workshops, and applied to the development of tangible media works in design studios. Finished works will be displayed in a final exhibition where members of the public will interact with them.

**Prerequisites:** KIB309  **Equivalents:** KIB311  **Credit points:** 12  **Contact hours:** 3 per week  **Campus:** Kelvin Grove  **Teaching period:** 2010 SEM-2

**KIB316 VIRTUAL ENVIRONMENTS**

The field of 3D virtual environments, simulation, and visualization are used to produce sophisticated approaches to interaction design, social networking and game-play. This unit is designed to cater for both creative and technical practitioners. Extending the knowledge and skills developed in 3D Computer Graphics and Real-time environments, this unit develops an advanced understanding of virtual environments and 3D spaces. You will apply and extend principals of real-time modeling, texture acquisition for real-time environments, and interaction design in the 3D context. Students enrolled in this unit will work in project teams to produce a significant 3D interactive environment within the context of a design studio.

**Prerequisites:** KIB325  **Equivalents:** KIB310, KIBB21  **Credit points:** 12  **Contact hours:** 3 per week  **Campus:** Kelvin Grove  **Teaching period:** 2010 SEM-2

**KIB325 REAL-TIME 3D COMPUTER GRAPHICS**

This unit provides the opportunity for extending the principles of 3D computer graphics into the emerging field of
virtual environments that respond to interaction in real time. In this unit you will cover the principals of real-time modeling; texture acquisition for real-time environments and interaction design in the 3D context. This unit provides an opportunity where students studying 3D computer graphics can apply animation and interactive design principles to real-time spaces. These principles can be applied to the fields of game design and interactive 3D environments. **Prerequisites:** KIB225 **Equivalents:** KIB310, KIB821 **Credit points:** 12 **Contact hours:** 3 per week **Campus:** Kelvin Grove **Teaching period:** 2010 SEM-1

KIB335 TYPOGRAPHY AND ILLUSTRATION

Typography and illustration are essential components of graphic design for both print and electronic media. This unit will focus on techniques of type design, appropriate use of type forms, the design and incorporation of lettering, and the expressive and communication uses of typography. It will also cover the history, uses, and processes of illustration and its application within visual design and communication. Lectures will introduce design history, techniques and approaches, which will be applied in design studios. **Prerequisites:** KVB204 **Credit points:** 12 **Contact hours:** 3 per week **Campus:** Kelvin Grove **Teaching period:** 2010 SEM-1

KIB338 PRINT MEDIA

This unit builds on the visual communication and graphic design units to develop specialist skills in design layout and the creative production of print media. It will introduce the theory and principles involved in combining text, image and design elements into a coherent design layout and will extend this theory into practice through the development of advanced design publishing techniques. Theoretical understandings gained through lectures will be augmented with technical skills in workshops, and applied to the production of team-based, professional quality print projects in design studios. **Prerequisites:** KVB204 **Antirequisites:** KCP361, KCP405 **Credit points:** 12 **Contact hours:** 3 per week, plus several workshops during semester **Campus:** Kelvin Grove **Teaching period:** 2010 SEM-2

KKB216 GRAPHICAL DEVELOPMENT ENVIRONMENTS FOR MEDIA INTERACTION

You will build interactive software systems for sampling, synthesising and manipulating media in real-time using graphical programming environments (also known as “patcher languages”). This will enable you to design and implement custom audio/video software for live performances and/or installations. **Credit points:** 12 **Contact hours:** 3 per week **Campus:** Kelvin Grove

KVB105 DRAWING FOR DESIGN

This is a studio based unit that introduces you to media, processes, strategies and traditions of drawing and associated imagery for use in animated media. The development of critical/reflective frameworks of traditional and contemporary practice underpins studio development. **Equivalents:** KVB755 **Credit points:** 12 **Contact hours:** 4 per week **Campus:** Kelvin Grove **Teaching period:** 2010 SEM-1

KVB106 DRAWING FOR ANIMATION

This unit develops individual knowledge, concepts and skills to enable you to articulate and present capabilities of motion through drawing for contemporary animation practices. **Equivalents:** KVB756 **Credit points:** 12 **Contact hours:** 3 per week **Campus:** Kelvin Grove **Teaching period:** 2010 SEM-2

KVB204 GRAPHIC DESIGN

Graphic design is a long established field of study involving the presentation of aesthetic elements, image and text for the purpose of effective communication. New modes of reproduction, display and transmission are reshaping the way that text, images and messages are communicated. This unit will develop an understanding of enduring graphic design principles, emphasize the importance of targeted communication, and introduce new and innovative ways of approaching graphic design for contemporary media. You will apply these principles by articulating and graphically presenting design options for production in a range of mediums. Lectures will introduce graphic design principles, theory and practices and this knowledge will be applied in a range of contexts within design studios. **Prerequisites:** KIB101 or KIB801 or KIP401 **Antirequisites:** KVP401 **Credit points:** 12 **Contact hours:** 4 per week **Campus:** Kelvin Grove **Teaching period:** 2010 SEM-2

MAB281 MATHEMATICS FOR COMPUTER GRAPHICS

This unit introduces students to the mathematics involved in computer graphics, computer games and virtual reality. It is heavily reliant on analytic, Euclidean and projective geometries in 2D and 3D, elementary trigonometry, elementary linear algebra and elementary calculus. The unit will develop the mathematical concepts and where practicable show how these concepts are then applied in the field of computer graphics. Students must have completed four semesters of Senior Mathematics B with an exit level of Sound Achievement, or have passed MAB105 (or equivalent). **Assumed knowledge:** Grade of at least Sound Achievement in Senior Mathematics B (or equivalent) or MAB105 is assumed knowledge. **Credit points:** 12
Contact hours: 4 per week   Campus: Gardens Point
Teaching period: 2010 SEM-2