

**SIAA Guide to Professional Skills Development in  
Australia**

**May 2008**

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# The Simulation Industry Association of Australia

*Promoting the knowledge, science and use of modelling and simulation.*

The Simulation Industry Association of Australia (SIAA) has been formed to provide a focus and a forum for those involved with simulation technology in Australia, to allow for discussion and distribution of information, and to further advance the research, development and use of simulation technologies and practices in Australian society, industry, academia and government.

The **objectives** of the Association are the:

- Promotion to government, industry and the wider community of the application and benefits of simulation;
- Professional development of the members;
- Dissemination of the association's ideals in regard to recognition of simulation as a science in its own right;
- Promotion of the association as the official, recognised representative of the simulation industry in Australia; and
- Provision of guidance and interpretation of Australian and international standards involved with simulation and training.

The Association's **activities** may include, although are not limited to, the following:

- Industry conferences, exhibitions, seminars, tutorials and workshops.
- Encouraging the development of tertiary level courses in Simulation.
- Contributing to and providing guidance and interpretation of Australian and International Standards involved with Simulation and Training.
- Encouraging school and tertiary student involvement in the industry.
- Liaising with other international organisations that have synergistic goals and ideals.
- Provision of advice and guidance to Government in regard to the Simulation Industry in Australia.
- Encouraging research in commonly agreed objectives.
- Information dissemination via newsletters and web-site.

**Membership** is available at the Full, Associate, Individual and Student levels. Benefits, depending on the level, include:

- SIAA sponsored course, and SimTecT exhibition discounts.
- Simulation organisation profile (SIAA presentations and web-site).
- Eligible to participate in SIAA stands at events such as I/ITSEC.
- Eligible to participate in invited Government Meetings.
- Eligible to participate in Government industry policy formulation (if sought through SIAA).
- Links to allied associations in Europe and North America and the ability to provide companies with introductions to these organisations and their members.
- Web-site Members data repository area, including all SimTecT papers.
- Emails of general SIAA news, events, business opportunities, invited Government Meetings notes, and members news.
- Members eligible news items promoted through the web-site and emails.





## Foreword

Welcome to this 2008 edition of the SIAA Guide to Professional Skills Development in Australia. The development and updating of knowledge and skills for all those employed in our industry is critical to a healthy and effective simulation capability in this country. This Guide aims to communicate the options available for professional development and suggest a broad strategy for training and career advancement. The information provided has been sourced from highly experienced practitioners and leading educational and training organisations. The diverse nature of the simulation industry precludes prescription of a single strategy applicable to all and readers will still need to consider their personal circumstances and seek guidance from those experienced in the field.

Certification is an important strategy for skill development and recognition of standing in the field. Consequently, all people who consider themselves to be simulation professionals are strongly encouraged to participate in the SIAA Professional Certification Program outlined in this guide and on the SIAA website.

Consultation with education and training providers has continued and this edition provides an update on the opportunities for skill development available in Australia. The SIAA continues to promote consultation between the Australian simulation community and providers of education and training and readers should refer to the SIAA website for the latest listings of relevant education and training programs.



Alan Johnson  
SIAA Chairman



## Acknowledgements

The generous contribution of time and effort by the SIAA Professional Development Sub-Committee, members of Skill Group Panels and representatives of Simulation Education and Training Providers is gratefully acknowledged.

SIAA Professional Development Sub-Committee 2007/08:

Phil Wallace (Chair)	Learning Systems Analysis
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Shane Garrett (SIAA Learning & Development Officer)	

The Defence Simulation Manual and other material produced by the Australian Defence Simulation Office provided valuable input to this Guide.

Internet: <http://www.defence.gov.au/capability/ADSO/>  
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# Introduction

The Simulation Industry Association of Australia (SIAA) is the key Australian industry body in the field of simulation. SIAA members are providers of simulation products and services and strong, formal ties exist with major employers of simulation such as the Australian Department of Defence. The SIAA aims to support all industry sectors involved with simulation; this includes Defence, health, manufacturing, mining, research, transport and many more. Enhancement of the skills and formal qualifications of those employed in simulation-related work, including both providers and customers of simulation systems and services, is an important activity undertaken by the SIAA.

The SIAA Guide to Simulation Professional Skills Development in Australia aims to assist simulation professionals in developing their skills and knowledge. Professional development is an ongoing process and a strategy involving three Components (Introductory, Practitioner and Currency) is presented in this Guide. In this third edition of the Guide, there is a focus on detailed course information for the Introductory Stage; course information for the Practitioner and Currency Components will be presented in more detail in future editions and on the SIAA website: [www.siaa.asn.au](http://www.siaa.asn.au).

There are seven sections to the Guide:

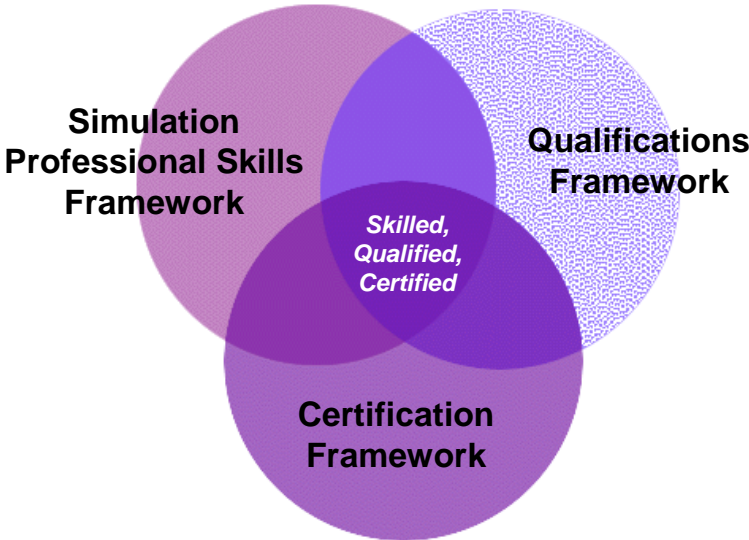
Section	Title	Function
1.	Simulation Professionals in Australia	Defines the scope of simulation professionals skills development in Australia.
2.	SIAA Professional Certification Program	Describes the SIAA Professional Certification Program.
3.	Introductory Stage	Provides an outline of the Introductory Stage of the SIAA Simulation Professional Training and Advancement Strategy.
4.	Practitioner Stage	Provides an outline of the Practitioner Stage of the SIAA Simulation Professional Training and Advancement Strategy.
5.	Currency Stage	Provides an outline of the Currency Stage of the SIAA Simulation Professional Training and Advancement Strategy.
6.	Course Descriptions and Points of Contact	Lists simulation-related courses and points of contact.
7.	Other Resources	Lists webpages that provide useful professional development information.

## Skills Development, Qualifications and Certification

The process of professional development may be considered to comprise three inter-related frameworks: professional skills, formal qualifications, and certification of professional status. Figure 1 illustrates that overlap between the respective frameworks may occur and could, in fact, be desirable. An appropriate level of achievement in each framework will result in a simulation professional meeting a requisite level of skill, qualification and certification (this is the centre point of Figure 1).



This edition of the Guide focuses on the Professional Skills and Professional Certification Frameworks. A framework for formal qualifications in the field of simulation is still under consideration by the SIAA and it has only been possible to provide general examples in this Guide (refer to the text and Table following Figure 1).



*Figure 1: Frameworks Related to the Professional Development of Simulation Professionals.*

### Simulation Jobs and Qualifications

Those employed in the field of simulation work across a diverse range of occupations and sectors. In general, individuals obtain qualifications in a relevant field and then find themselves employed in the simulation industry. Some individuals might also decide to obtain basic trade or professional level qualifications to lead to a specific simulation-related role or job. Table 1 shows typical relationships between areas of employment and formal qualifications and is intended to provide a starting point for investigating personally-relevant courses. An initial listing of relevant training and education programs, and points-of-contact, are provided later in this Guide.

General Job Function	Example Job(s)/Role(s)	Typical Qualification(s)
Acquirer	Policy Developer, Project Manager	Tertiary Qualified (e.g. Finance, Business, Engineering, Project Management, Domain/Context-specific Qualifications)
Analyst	Systems Analyst, Systems Engineer, Operations Analyst	Tertiary Qualified (e.g. Engineering, Computer Science/IT, Mathematics, Statistics, Business)



General Job Function	Example Job(s)/Role(s)	Typical Qualification(s)
Designer/Architect	Systems Architects, Design Engineers, Software Engineers, Hardware Engineers, Instructional Designer, Change Manager	Tertiary Qualified (e.g. Computer Science/IT, Engineering, Psychology/Human Factors, Education/Training, Change Management)
Developer	Software Developer, Hardware Developer	Tertiary Qualified (e.g. Computer Science/IT, Engineering)
Implementer	Engineer, Project Manager, Change Manager	Tertiary Qualified (e.g. Engineering, Computer Science/IT, Project Management, Change Management)
User/Operator	Trainer, Analyst	Tertiary Qualified (e.g. Domain or Context Specific Qualifications, Education/Training) Certificate in Workplace Training and Assessment
Maintainer/Supporter	Technician, Engineer, Facilities Manager, Logistician, Help Desk Support	Tertiary or Trade Qualified (e.g. Electronics, Maintenance, Engineering, Logistics, Facilities Management)
Manager	Manager, Contract Manager	Tertiary Qualified (e.g. Finance, Business, Contract Management, Project Management Domain/Context-specific Qualifications)
Validator/Researcher	Scientist, Researcher	Tertiary Qualified (e.g. Science, Arts Domain/Context-specific Qualifications, Mathematics, Statistics)
Business Developer	Business Developer	Tertiary Qualified (e.g. Finance, Business, Engineering, Project Management, Domain/Context-specific Qualifications)

**Table 1:** *Typical Relationships between Area of Employment and Formal Qualifications.*





# Simulation Professionals in Australia

## A Definition of Simulation Professionals

The scope of employment for simulation professionals is very broad and not restricted to any particular industry sector or group of sectors. Furthermore, the term ‘simulation professional’ is applicable to all employed in the field, including graduates of vocational education and training programs as well as graduates of tertiary education programs.

The SIAA defines a Simulation Professional to be anyone who both considers themselves to be involved in simulation through their employment, and who undertakes to maintain and improve their professional knowledge and skills in the field. Individuals decide to participate in the simulation community on the basis of their interests and employment aspirations. For example, someone who uses simulation in their employment might want to learn more about simulation techniques and technologies and even explore opportunities to develop their own simulations and, therefore, seek professional development in the field. Conversely, this individual might consider the field to be one that contributes to their work, but might not feel a need to pursue specialist professional development in the field. Applying the SIAA’s definition, in the former situation the individual would be considered a Simulation Professional, while in the latter situation they would not.

This definition encompasses members of industry, government organisations and academia. Given this broad definition of simulation professionals, the SIAA considers an effective means of skill development, qualification and certification to be very important.

## Focus of Simulation Professionals Skills Development

In accepting a broad definition for simulation professionals, the SIAA considers it important to note that not all related skills are the proper subject of a simulation professional skills development program. People generally enter the field of simulation with a range of qualifications, e.g. software engineering, and these should be maintained and developed through programs offered by relevant professional bodies. The SIAA simulation professional skills development program focuses on those aspects that are unique to the field of simulation.

## Simulation Workplace Roles

An understanding of the potential range of roles performed by those working in the field of simulation is an important basis for a skills development strategy. Roles will differ greatly between individuals in a field as diverse as simulation and the statement of any specific set of roles should not be viewed as suggesting that each individual should be competent in every role.



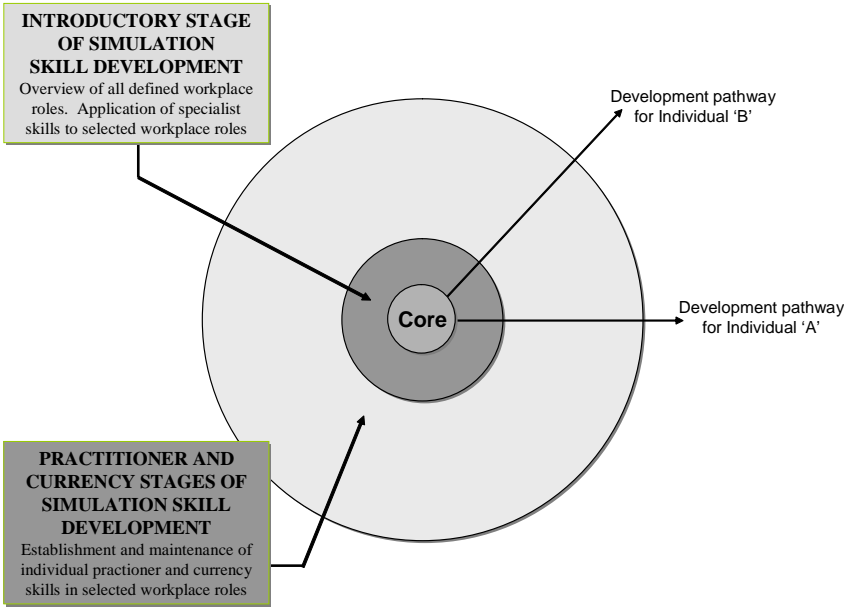
The simulation workplace roles as defined by the SIAA comprise:

1. Contribute to policy related to simulation.
  - 1.1. Identify simulation process problems (policy shortfalls).
  - 1.2. Develop policy.
  - 1.3. Implement policy.
  - 1.4. Maintain the policy.
2. Devise strategies for the use of simulation.
  - 2.1. Identify system/organisation needs.
  - 2.2. Scope potential application of simulation.
  - 2.3. Prepare a business case for simulation.
  - 2.4. Evaluate business cases for simulation.
3. Develop specifications for simulations.
  - 3.1. Apply policy and standards related to simulation.
  - 3.2. Prepare functional and technical specifications that express the defined need.
  - 3.3. Evaluate draft specifications for simulation.
4. Develop simulations.
  - 4.1. Evaluate simulation solutions against specifications.
  - 4.2. Design simulation solutions.
  - 4.3. Build simulations.
5. Commission simulations.
  - 5.1. Install simulation solutions.
  - 5.2. Verify, validate and accredit simulations.
  - 5.3. Establish simulation support infrastructure.
6. Employ simulations.
  - 6.1. Manage simulation operations.
  - 6.2. Use simulations for their business purpose.
7. Support simulations.
  - 7.1. Manage simulation support.
  - 7.2. Maintain simulation operational capability.
8. De-commission simulations.
  - 8.1. Plan for transition from current simulation solution.
  - 8.2. Manage transition from current simulation solution.



# The SIAA Simulation Professional Training and Advancement Strategy

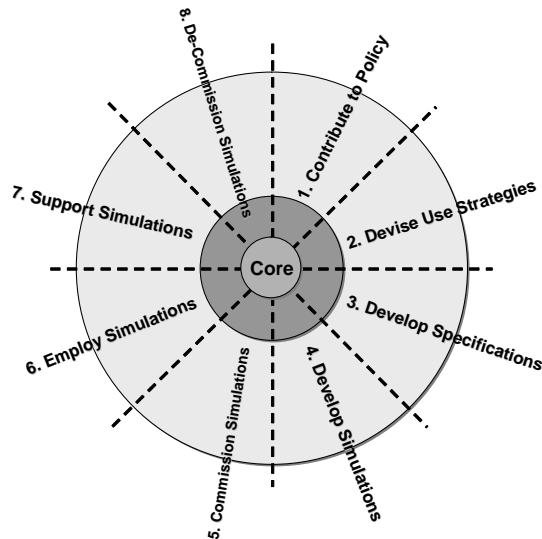
The SIAA Simulation Professional Training and Advancement Strategy comprises three stages: Introductory, Practitioner and Currency. The content of each stage is dependent on the needs of individuals and cannot be objectively prescribed. However, this Guide aims to provide information to assist individuals to select content and programs most applicable to their circumstances. A conceptual overview of the strategy is illustrated in Figure 2.



**Figure 2:** *The Introductory, Practitioner and Currency Stages of the SIAA Simulation Professional Training and Advancement Strategy.*

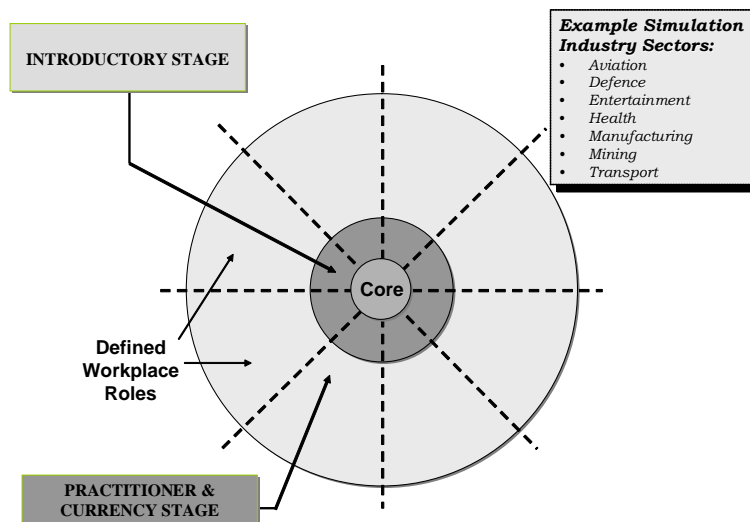
Figure 3 indicates the applicability of Simulation Workplaces Roles against the Introductory, Practitioner and Currency stages of simulation skill development.





**Figure 3:** Simulation Workplaces Roles carry across the Introductory, Practitioner and Currency Stages of Simulation Skill Development

Figure 4 indicates that skill needs may vary across major sectors and accommodation of such sectoral differences is a key aspect of the SIAA Simulation Professional Training and Advancement Strategy.



**Figure 4:** In the SIAA Simulation Professional Training and Advancement Strategy skill needs may vary across major sectors

# Simulation Industry Association of Australia Professional Certification Program

## Background

The 2005 SIAA AGM authorised work to investigate the establishment of an SIAA Professional Certification Program as an extension to the recently established SIAA Professional Development Program. The SIAA PD Committee studied options for implementation of an SIAA Professional Certification Program and presented a proposal to the SIAA Executive Committee. The SIAA Professional Certification Program was approved for commencement on 29th May 2006 in conjunction with SimTecT06.

## What are the benefits of Professional Certification?

The SIAA Professional Certification Program aims to provide interested members of the Australian simulation community with both professional development guidance and recognition of existing skill standing.

We can expect increasing demand for certified simulation professionals as the field matures. Consequently, professional certification will provide you and your employer with many advantages in the evolving field of simulation.

## The Simulation Professional Certification Framework

Certification of simulation professionals will be offered through the three related components of a Simulation Introduction Certificate, Simulation Practitioner Certificate and Simulation Skills Currency Certificate. These are described below.

The SIAA Simulation Skills Certification Program provides recognition of your standing in the field. In addition, there are likely to be other specialist professional certification programs that you should pursue to ensure that you are qualified to undertake specific tasks in your field of expertise. Certification with the SIAA compliments these other certifications with a focus on the field of simulation.

## Professional and Technical Certification

The SIAA Professional Certification Program will recognise application of technical competencies to the field of simulation as distinct from the possession of specific technical competencies.

Certification of specific technical competence is the role of trade and professional bodies. Certification of the application of technical competence to the field of simulation is the role of the SIAA.



Components of the SIAA Simulation Professional Certification will assert that an individual has achieved a combination of the following:

- Has demonstrated an ability to identify issues in the application of their technical competencies to the field of simulation and locate resources to assist in their resolution. (Introductory Component)
- Has demonstrated an ability to recognise when the advice of more experienced simulation professionals should be sought. (Introductory Component)
- Has demonstrated a capacity to apply their technical competencies to the field of simulation. (Introductory Component)
- Has demonstrated an ability to independently plan, manage and conduct tasks involving the application of their technical competencies to simulation. (Practitioner Component)
- Has demonstrated an ability to apply one or more aspects of their technical competencies to simulation in complex and novel circumstances. (Practitioner Component)
- Has demonstrated an ability to supervise and develop colleagues in the application of one or more aspects of their technical competencies to the field of simulation. (Practitioner Component)
- Is currently undertaking activities to maintain their knowledge and skills in relation to developments in the field of simulation. (Currency Component)

## Key Skill Groups within the Field of Simulation

The qualifications and experience of those employed in simulation are extremely diverse and three Skill Group Panels have been formed to provide focus on separate domains of expertise. The Skill Group Panels are a first attempt at defining key domains and it is understood that there is overlap between them and they may need to split, merge and morph as the field of simulation evolves.

The three Skill Group Panels are:

- Instructional Systems & Human Factors
- Project Management & Policy
- Systems Engineering & Support

Each Skill Group Panel has the task of defining criteria for the certification of simulation professionals, based on the demonstration of abilities as described above. The detailed criteria for certification are available on the SIAA Website (<http://www.siaa.asn.au/certification/>).

## Certification Framework

A Professional Certification framework has been developed (refer to Figure 5) and this is intended to be generally applicable to those involved in simulation. The SIAA certification process includes the following three components:

1. **Simulation Introductory Certificate:** A common program leading to certification at an Introductory Level is available to all simulation professionals. This program is comprised



of the Introduction to Simulation in Australia Seminar, conducted by the SIAA, and completion of an endorsed training course or activity that applies an individual's established expertise and skills to the field of simulation. Certification at this level recognises a basic understanding of the field of simulation.

2. **Simulation Practitioner Certificate:** Specific pathways to Practitioner Level certification are dependent upon the Skill Group under which certification is sought. It is a goal of the SIAA that Practitioner Level certification eventually be aligned with certifications from other professional bodies, e.g. the US National Training Systems Association (NTSA) Certified Modelling and Simulation Professional (CMSP) designation, to provide international recognition of skill status.
3. **Simulation Currency Certificate:** This component recognises participation in professional development activities. Individuals are encouraged to undertake continuing professional development with biennial renewal of currency based on a "Points-Earned" system. Applicants must undertake professional development activities (Endorsed and/or Non-Endorsed) that have a total value of at least 24 Currency Units<sup>1</sup> (CUs) per two calendar-year period, with at least 8 CUs being approved as specifically pertinent to the Skill Group against which an individual has been certified.

Attendance at the SimTecT 2008 exhibition and papers earns 6 CU per day. Attendance at SimTecT Workshops earns 6 CU per half-day. The applicability of SimTecT 2008 Workshops to Skill Groups is as listed in Table 2. CUs may also be earned through other activities and workplace experience.

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<sup>1</sup> As a general 'rule-of-thumb', a relevant one hour activity would equate to one CU.



No.	Workshop	Monday	PD Skill Group <sup>2</sup>	CUs
1	<a href="#">SIAA Introduction to Simulation in Australia</a>	AM	All	6
2	<a href="#">Simulation Support to Operations</a>	AM	Non-Specific	6
3	<a href="#">Using Simulation in a Training Environment</a>	PM	IS	6
4	<a href="#">Simulation for Acquisition and Simulation in the Enterprise</a>	AM	Non-Specific	6
5	<a href="#">Training Debrief - Methods, Tools and Techniques</a>	AM	IS	6
6	<a href="#">Supporting Training Devices and Media – Lessons from the Field</a>	PM	MS, SE	6
7	<a href="#">Verification, Validation and Accreditation of Simulation Based Systems</a>	PM	IS, SE	6
8	<a href="#">Simulation Interoperability: TENA, HLA, DIS</a>	AM	SE	6
9	<a href="#">Networked Training - Benefits and Challenges</a> - <b>cancelled</b>			
10	<a href="#">The Use of Simulation for the Validation, Integration and Test of Live Systems</a> - <b>cancelled</b>			
11	<a href="#">Simulation and Operational Fidelity</a>	PM	IS	6

**Table 2:** Allocation of Currency Units to SimTecT 2008 Workshops.

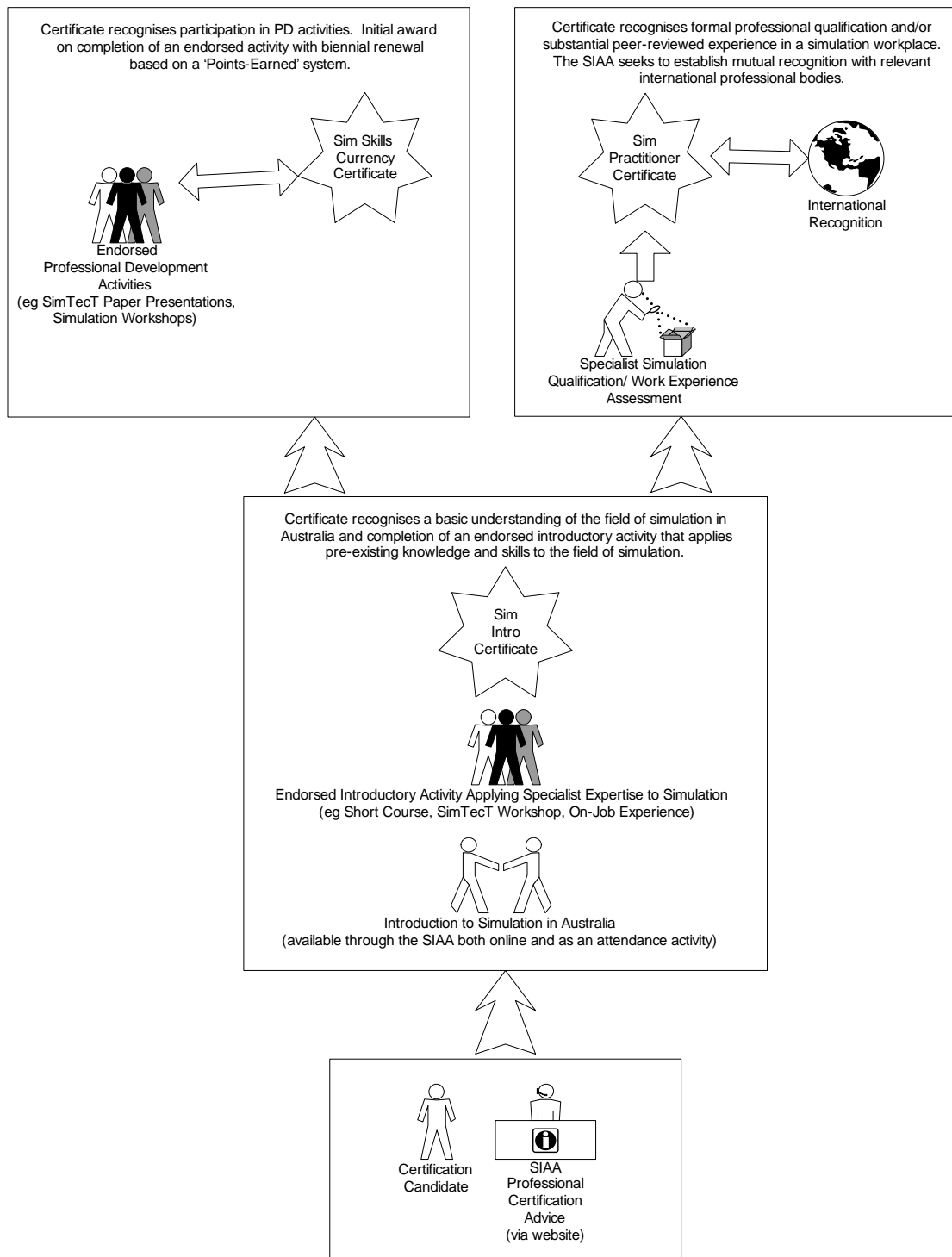
This currency element of skill certification recognises a commitment to ongoing development of an individual's own expertise and contribution to the field of simulation in Australia. Ongoing development of an individual involves endorsed activities, such as:

- Participation in endorsed training and development activities such as SimTecT Workshops and Papers.
- Presentation of papers at SimTecT.
- Development/mentoring of other simulation professionals.
- Contribution to the field through active participation in SIAA activities (eg Committee Membership).

The Simulation Introductory Certificate and the Simulation Practitioner Certificate are assessed once and renewed annually, subject to the requirements of the Simulation Currency Certificate being satisfied.

<sup>2</sup> Professional Certification Skill Group Applicability (IS = Instructional Systems, MS = Maintenance Support, SE = Systems Engineering)





**Figure 5: General SIAA Professional Certification Framework**

## Application Process and More Information

You can apply online to the SIAA Profession Certification Program. More information about the program and links to the application form and FAQs can be found at:

<http://www.siaa.asn.au/certification/>

## SIAA Certification Program Policy & Procedures

(Note that updates to policy and procedures for the SIAA Professional Certification Program can be found on the SIAA website at <http://www.siaa.asn.au/certification/>).

### Appeals & Complaints Process

Once an appeal or written complaint and supporting evidence is submitted to the SIAA, the following process takes place:

1. The submission is acknowledged in writing.
2. A member of the SIAA Professional Development Sub-Committee (which is the Committee of Review) examines the written submission and supporting evidence to determine whether adequate information has been provided. Further information is requested if required.
3. The submission is referred to the SIAA Professional Development Sub-Committee for review. The SIAA Professional Development Sub-Committee consists of a group of experienced simulation professionals appointed by the SIAA Executive.
4. The findings of the SIAA Professional Development Sub-Committee are advised to the complainant.
5. The complainant has a right to appeal against the SIAA Professional Development Sub-Committee's findings through the SIAA Executive. Any further appeal must be lodged with the SIAA Executive Officer within 30 days of the SIAA Professional Development Sub-Committee decision.

### Withdrawal of Professional Certification

As described above [in the Policy section of the guide] the SIAA has a formal process which enables complaints and appeals to be heard and evaluated. The same Committee of Review process previously outlined may be used to investigate and sanction the withdrawal of an individual's Professional Certification for one or more of the following reasons:

- An individual has provided false or misleading information in an application for certification



- The individual no longer holds a certification or qualification that was contingent for their initial Simulation Professional Certification and therefore does not meet the criteria for being certified
- When the Individual is found to be in breach of the SIAA's Professional Certification standards.

## SIAA Professional Certification Program Fees

2008/09 Fees for the SIAA Professional Certification Program are described in Table 3 below.

Item	Description	Fee (\$AUD)
Initial Certification Fee	Paid on entry to the Certification Program. Includes: <ol style="list-style-type: none"> <li>1. SIAA Individual Membership (normally \$40),</li> <li>2. Annual Fee (normally \$125),</li> <li>3. cost of the ISA Seminar (value \$295 when taken either online or by attendance), and</li> <li>4. Introductory or Practitioner Level Certification (value approx \$175), subject to assessment.</li> </ol>	500.00
Annual Renewal Fee (Includes SIAA Individual Membership)	Renews certification status and eligibility for Simulation Skills Currency Certificate.	125.00
Practitioner Certification Upgrade	Subject to satisfaction of assessment criteria. Includes Annual Renewal Fee (normally \$125) for the following year.	300.00

**Table 3:** 2008 Fees for the SIAA Professional Certification Program.





# Introductory Stage of Simulation Professional Skills Development

## Outline of the Introductory Stage

The following information defines the nature and scope of the Introductory Component of simulation professional skills development.

<p><b>Aim:</b></p>	<p>To provide simulation professionals with a foundation of knowledge and skills that will enable them to make informed decisions about the use of simulation in activities such as the acquisition, development, implementation and operation of simulation systems in Australia.</p>
<p><b>Description:</b></p>	<p>Participants are provided with a broad overview of simulation activities and standards. The program focuses on modelling and simulation terms, concepts, applications and information resources. The program will prepare simulation professionals for positions that require familiarity with these topics. The program will comprise a short course conducted under the auspices of the SIAA (a general overview of simulation in Australia) and one of a range of SIAA-endorsed courses that applies participants' workplace needs and prior expertise to the field of simulation (refer to the SIAA website for a list of applicable courses: <a href="http://www.siaa.asn.au/certification/">http://www.siaa.asn.au/certification/</a>).</p>
<p><b>Related Training:</b></p>	<p>The Introduction to Simulation Program is not intended to duplicate training provided by other professional organisations. Individuals should consider their specific needs in this regard and consult relevant professional organisations.</p>
<p><b>Certification:</b></p>	<p>Completion of the Introductory Stage of Simulation Professional Skills development satisfies requirements for the Simulation Introductory Certificate. The SIAA Introduction to Simulation Workshop should be completed, together with at least one endorsed course, for an individual to be considered eligible to receive the Simulation Introductory Certificate.</p>



# Practitioner Stage of Simulation Professional Skills Development

## Outline of the Practitioner Stage

The following information defines the nature and scope of the Practitioner Component of simulation professional skills development.

<p><b>Aim:</b></p>	<p>The Practitioner Component of simulation professional skills development recognises and encourages demonstration of effective application of an individual’s technical competencies to the field of simulation, including independent planning, management and conduct of simulation workplace tasks involving well-established industry practices.</p>
<p><b>Description:</b></p>	<p>Participants are required to demonstrate an ability to perform one or more of the following:</p> <ul style="list-style-type: none"> <li>• independently plan, manage and conduct tasks involving the application of their technical competencies to simulation</li> <li>• apply one or more aspects of their technical competencies to simulation in complex and novel circumstances</li> <li>• supervise and develop colleagues in the application of one or more aspects of their technical competencies to the field of simulation.</li> </ul> <p>Simulation professionals must meet criteria related to either a combination of coursework and workplace experience, or solely workplace experience.</p>
<p><b>Related Training:</b></p>	<p>Refer to the SIAA website and the SIAA Professional Certification Application Packs for detailed lists of applicable courses and activities: <a href="http://www.siaa.asn.au/certification/">http://www.siaa.asn.au/certification/</a>. Individuals should consider their specific needs in this regard and consult relevant professional organisations.</p>
<p><b>Certification:</b></p>	<p>Completion of the Practitioner Stage of Simulation Professional Skills development satisfies requirements for the Simulation Practitioner Certificate. This Certificate recognises formal professional qualification and/or substantial peer-reviewed experience in a simulation workplace. The SIAA seeks to establish mutual recognition with relevant international professional bodies.</p>



# Currency Stage of Simulation Professional Skills Development

## Outline of the Currency Stage

The following information defines the nature and scope of the Currency Component of simulation professional skills development.

<p><b>Aim:</b></p>	<p>To recognise ongoing participation by a simulation professionals in professional development activities. This stage is intended to encourage individuals to maintain currency by undertaking activities to maintain their knowledge and skills in relation to developments in the field of simulation.</p>
<p><b>Description:</b></p>	<p>Individuals are encouraged to undertake continuing professional development with biennial renewal of currency based on a “Points-Earned” system. Applicants must undertake professional development activities (Endorsed and/or Non-Endorsed) that have a total value of at least 24 Currency Units (CUs) per two calendar-year period, with at least 8 CUs being approved as specifically pertinent to the Skill Group against which an individual has been certified. (refer to the SIAA website for additional information regarding Continuing Education Units: <a href="http://www.siaa.asn.au/certification/">http://www.siaa.asn.au/certification/</a>).</p>
<p><b>Related Training:</b></p>	<p>This currency element recognises a commitment to ongoing development of an individual’s own expertise and contribution to the field of simulation in Australia. Ongoing development of an individual involves endorsed activities, such as:</p> <ul style="list-style-type: none"> <li>• Participation in endorsed training and development activities such as SimTecT Workshops and Papers.</li> <li>• Presentation of papers at SimTecT.</li> <li>• Development/mentoring of other simulation professionals.</li> <li>• Contribution to the field through active participation in SIAA activities (eg Committee Membership).</li> </ul> <p>CUs may also be earned through other activities and workplace experience.</p>
<p><b>Certification:</b></p>	<p>Completion of the Currency Stage of Simulation Professional Skills development satisfies requirements for the Simulation Currency Certificate.</p>





## Current Total Listing of Courses and Points of Contact

The information in the following tables (Table 4 and 5) has been provided by respective training providers. The SIAA has not reviewed the accuracy of this information and individuals interested in undertaking courses should consult with the respective points-of-contact. Table 4 provides information regarding General Simulation-Related Courses, while Table 5 provides information about courses related to specific simulation products and tools.

**Table 4: General Simulation-Related Courses**

Course	Description and Contact Information
<b>Academy of Interactive Entertainment (AIE)</b>	
Courses on offer for 2008 include:	<p> <a href="#">Certificate II in Basic 3D Electronic Animation</a>  <a href="#">Certificate III in Screen 3D Animation – on-line study</a>  <a href="#">Certificate IV in 3D Animation for Games and Film</a> – available in conjunction with CIT  <a href="#">Certificate IV in Information Technology (Programming)</a>  <a href="#">Diploma of Computer Game Development (Art and Design)</a>  <a href="#">Diploma of Computer Game Development (Programming)</a>  <a href="#">Diploma of Screen (Digital FX and animation for screen)</a> – available in conjunction with CIT  <a href="#">Diploma of Screen (Digital FX and animation for film)</a>            See <a href="http://www.aie.edu.au/courses/intro.php">http://www.aie.edu.au/courses/intro.php</a>  <b>For more information contact:</b>            David Giles (Head of School, Melbourne)            Phone: (02) 6162 5131(Canberra)            (03) 9820 8201 (Melbourne)            Email: <a href="mailto:davidg@aie.vic.edu.au">davidg@aie.vic.edu.au</a> </p>
<b>Australian Defence Force Academy (ADFA) see University of New South Wales (ADFA)</b>	



Course	Description and Contact Information
<b>Central Queensland University</b>	
COIT12120 System Simulation	<p>This course aims to introduce students to modelling systems using discrete system simulation methodologies. At the end of the course students should be able to analyse simple systems, determine if simulation is an appropriate methodology, build a computer model, validate the model and draw practical implications from the model.</p> <p><a href="http://infocom.cqu.edu.au/Courses/2004/T3/COIT12120/">http://infocom.cqu.edu.au/Courses/2004/T3/COIT12120/</a></p> <p><b>For More Information Contact:</b></p> <p>Stephen Smith  Telephone: (07) 4930 9878  Email: <a href="mailto:s.smith@cqu.edu.au">s.smith@cqu.edu.au</a></p>
<p>Master of Learning Management (Simulation Technology and Learning)</p> <p>Graduate Diploma of Learning Management (Simulation Technology and Learning)</p> <p>First enrolments 2009</p>	<p>A program in the design and application of simulation technology to the learning process. Requires the completion of six courses; Learning Needs Analysis and Simulation, Cognition, Psychology and Simulation, a professional project that requires a six weeks internship and completion of the three courses in the Graduate Diploma.</p> <p>A program for the practitioner who is using simulation in the learning process. Requires the completion of three courses; History and Contemporary Uses of Simulation, Using Simulation to Facilitate Learning and a Professional Project.</p> <p>Courses are completed by flexible delivery.</p> <p><b>For more information contact:</b></p> <p>Allan Briggs  Phone: (07) 4935 4645  Email: <a href="mailto:abriggs@irock.com.au">abriggs@irock.com.au</a></p>



Course	Description and Contact Information
<b>Charles Sturt University (CSU)</b>	
Various Charles Sturt University programs/courses contain simulation-related content	<p><b>ITC330 LIFE, CHAOS AND VIRTUAL WORLDS</b> Why do stock markets crash? Why do rainforests have so many species? This introduction to complex systems attempts to answer such questions by looking at the ways in which order and chaos arise within systems of interacting objects. Computation, both natural and artificial, provides a unifying theme. Major topics include connectivity, control, criticality, fractals, evolutionary processes and self-organisation. Practical topics include simulation and applications of these ideas to biology, environment and commerce.</p> <p><b>MOR313 SIMULATION</b> Introduction to mathematical simulation methods of solving problems for which analytical techniques are not appropriate; use of various computer packages such as TUTSIM and SPIDA.</p> <p><b>EMT201 EDUCATIONAL TECHNOLOGY</b> Explores both the nature of educational technology and the use of technology for the delivery of instruction and the support of learning.</p> <p><b>EEL404 INFORMATION PROCESSING &amp; TEACHING</b> This subject introduces current ideas about human information processing. It is designed to improve your capacity to assist learners to become more effective problem-solvers, to handle ideas more efficiently, and to monitor your own thinking and memory processes.</p>
Various Charles Sturt University programs/courses (CONTINUED)	<p>Consider also: Information Technology courses such as ITC 129, ITC 102, ITC 161, ITC 114, ITC 204, ITC 364, ITC 366, ITC 217, ITC 554, ITC 363, ITC 367, ITC 215 and ITC 237.</p> <p>See <a href="http://www.csu.edu.au/">http://www.csu.edu.au/</a></p> <p><b>For more information contact:</b></p> <p>Dr Barney Dalgarno (Senior Lecturer in Information Technology) Phone: (02) 6933 2305 Email: <a href="mailto:bdalgarno@csu.edu.au">bdalgarno@csu.edu.au</a></p> <p>Associate Professor Doug Hill (Course Coordinator, School of Education) Telephone: (069) 33 2442 Email: <a href="mailto:dhill@csu.edu.au">dhill@csu.edu.au</a></p>



Course	Description and Contact Information
<b>Curtin University of Technology</b>	
Introduction to Simulation Foundations (2 days)	<p>This course focuses on the history and legacy of simulation as embraced within the defence community and presents the basic science issues surrounding real world representation within a synthetic environment. The defence application areas of training, analysis and acquisition are also presented and discussed.</p> <p><b>For more information contact:</b></p> <p>Dr Michael Darby (Lecturer)  Phone: (08) 9266 2576  Email: <a href="mailto:m.darby@ece.curtin.edu.au">m.darby@ece.curtin.edu.au</a></p>
Advanced simulation practicum (3 days)	<p>Provides professionals currently developing, using, or procuring simulation systems, an in-depth understanding of the simulation principles, methodologies, and architectures which underpin the appropriate use of a given modeling approach and simulation technique for a specified purpose. This course focuses more on the science and engineering aspects of modeling and simulation and is conducted in the workshop environment allowing for discussion, practicals and group exercises.</p> <p><b>For more information contact:</b></p> <p>Dr Michael Darby (Lecturer)  Phone: (08) 9266 2576  Email: <a href="mailto:m.darby@ece.curtin.edu.au">m.darby@ece.curtin.edu.au</a></p>
304631 Introduction to Simulation 304	<p>Introduction to modelling techniques and simulation processes that enable representation of real world systems and/or phenomena for applications in distributed and non-distributed architectures. Current applications of real-time and non-real-time simulation environments for analysis, training and gaming such as distributed interactive simulation (DIS) and the high level architecture (HLA). Presentation through modelling and simulation development fundamentals and techniques, model engineering, experimental design, system analysis and reduction, simulation design and analysis and application areas. See <a href="http://handbook.curtin.edu.au/units/30/304631.html">http://handbook.curtin.edu.au/units/30/304631.html</a></p> <p><b>For more information contact:</b></p> <p>Dr Michael Darby (Lecturer)  Phone: (08) 9266 2576  Email: <a href="mailto:m.darby@ece.curtin.edu.au">m.darby@ece.curtin.edu.au</a></p>



Course	Description and Contact Information
12858 Computer Technology 403	<p>Fundamental issues in intelligent systems - History of artificial intelligence, Fundamental definitions, modelling the world, the role of heuristics. Search and constraint satisfaction - Problem spaces, search techniques, constraint satisfaction. Knowledge representation and reasoning - review of proposition and predicate logic, resolution and theorem proving, probabilistic reasoning, Bayes theorem. Advanced search - genetic algorithms, simulated annealing, local search. Machine learning and neural networks - definition and examples of machine learning, supervised learning, learning decision trees, learning neural networks, learning theory, the problem of overfitting, unsupervised learning. Robotics - overview, state of the art, planning versus reactive control, uncertainty in control, sensing, world models, configuration space, planning, sensing, robot programming, navigation and control. Data mining - the usefulness of data mining, associative and sequential patterns, data clustering, market basket analysis, data cleaning, data visualisation.</p> <p>See <a href="http://handbook.curtin.edu.au/units/12/12858.html">http://handbook.curtin.edu.au/units/12/12858.html</a></p> <p><b>For more information contact:</b></p> <p>Dr Michael Darby (Lecturer)  Phone: (08) 9266 2576  Email: <a href="mailto:m.darby@ece.curtin.edu.au">m.darby@ece.curtin.edu.au</a></p>
306 331 Simulation 604	<p>Investigation of the discipline of modelling and simulation for replicating real world systems or phenomena using modelling approaches and simulation environments for analysis, training and gaming applications. Selected topics include-modelling and simulation principles, model engineering, experimental design, system analysis and reduction, and simulation study design and analysis. See <a href="http://handbook.curtin.edu.au/units/30/306331.html">http://handbook.curtin.edu.au/units/30/306331.html</a></p> <p><b>For more information contact:</b></p> <p>Dr Michael Darby (Lecturer)  Phone: (08) 9266 2576  Email: <a href="mailto:m.darby@ece.curtin.edu.au">m.darby@ece.curtin.edu.au</a></p>



Course	Description and Contact Information
<b>Deakin University</b>	
SEM711 CAE & Automotive Product Development	<p>The aim of this Masters level unit is to provide a basic introduction to CAE and its role in modern automotive product development. Topics to be addressed in this unit include: The role of CAE in product development: Target setting, optimisation, performance analysis and manufacturing analysis. Computer Aided Design (CAD): Solid modelling, data management and transfer and CAD modelling for CAE. Finite Element Analysis (FEA): Basic principals and applications, building models, boundary conditions, solvers and interpreting results. Multi-body dynamics (MBD): Basic principals and applications, building models, boundary conditions, solvers and interpreting results. Computational Fluid Dynamics (CFD): Basic principals and applications, building models, boundary conditions, solvers and interpreting results.</p> <p>See <a href="http://www.deakin.edu.au/scitech/et/courses/Info/meprof.pdf">http://www.deakin.edu.au/scitech/et/courses/Info/meprof.pdf</a></p> <p><b>For more information contact:</b></p> <p>Professor Saeid Nahavandi (Chair in Engineering, School of Engineering and Technology)  Phone: (03) 5227 1231  Email: <a href="mailto:nahavand@deakin.edu.au">nahavand@deakin.edu.au</a></p>
<b>Monash University</b>	
Master of Education (Information and Communication Technology in Education)	<p>This course is designed to meet the needs of teachers, lecturers, trainers, educational administrators, educational technologists, policymakers and parents who are interested in learning technologies and who wish to become fully informed educators wishing to use this pathway as a basis for detailed research in information technology, multimedia or computers in education.</p> <p>See <a href="http://www.monash.edu.au/pubs/handbooks/postgrad/pg0418.htm">http://www.monash.edu.au/pubs/handbooks/postgrad/pg0418.htm</a></p> <p><b>For More Information Contact:</b></p> <p>Mr Bernard Holkner (Senior Lecturer, Faculty of Education)  Fax: (03) 9905 2819  Email: <a href="mailto:bernard.holkner@education.monash.edu.au">bernard.holkner@education.monash.edu.au</a></p>



Course	Description and Contact Information
Master of Education (Information and Communication Technology in Education)	<p>This course is designed to meet the needs of teachers, lecturers, trainers, educational administrators, educational technologists, policymakers and parents who are interested in learning technologies and who wish to become fully informed educators wishing to use this pathway as a basis for detailed research in information technology, multimedia or computers in education.</p> <p>See <a href="http://www.monash.edu.au/pubs/handbooks/postgrad/pg0418.htm">http://www.monash.edu.au/pubs/handbooks/postgrad/pg0418.htm</a></p> <p><b>For More Information Contact:</b></p> <p>Mr Bernard Holkner (Senior Lecturer, Faculty of Education)            Fax: (03) 9905 2819            Email: <a href="mailto:bernard.holkner@education.monash.edu.au">bernard.holkner@education.monash.edu.au</a></p>
<b>Permian P/L</b>	
The High Level Architecture (HLA) - An Introduction	<p>The seminar on The High Level Architecture (HLA) is aimed at scientists, engineers and managers working in the modeling and simulation field. This seminar is not just about the coding aspects of the HLA. It describes the terminology and emphasizes the potential that this US-mandated IEEE Standard 1516 has on the simulation community today. This session will provide an introduction to the architecture, including the terminology used within the simulation industry. Design and implementation issues to be considered when using the HLA will be discussed, along with the limitations of HLA. Also covered will be an introduction to the programming techniques and development aids that are available to the software engineer.</p> <p>See <a href="http://www.permian.com.au/Pages/PermianContactUs.asp">http://www.permian.com.au/Pages/PermianContactUs.asp</a></p> <p><b>For more information contact:</b></p> <p>Julian Rodert            Phone: (03) 9881 9881 (Melbourne)            (08) 8343 8422 (Adelaide)            Email: <a href="mailto:jrodert@permian.com.au">jrodert@permian.com.au</a></p>



Course	Description and Contact Information
<b>Queensland University of Technology</b>	
ITB016 Fundamentals of Games Design	<p>Modern games production is a complex process involving teams in the order of a hundred people or more, working with budgets in the tens of millions. One of the roles within a game production team is that of the game designer. It is crucial that a game designer understands how to create a game world, the rules that govern game play and other high level design tasks, as the result of these activities can determine whether the player finds the game enjoyable or not. This subject provides an introduction to game design, by starting with high level conceptual design tasks before moving to more concrete tasks.</p> <p>See <a href="http://www.courses.qut.edu.au/">http://www.courses.qut.edu.au/</a></p> <p><b>For more information contact:</b></p> <p>Dr Ross Brown  Phone: (07) 3138 9481  Email: <a href="mailto:r.brown@qut.edu.au">r.brown@qut.edu.au</a></p>
ITB017 Advanced Games Design	<p>Modern games production is a complex process involving teams in the order of a hundred people or more, working with budgets in the tens of millions. One of the roles within a game production team is that of the game designer. It is crucial that a game designer understands how to create levels and tasks within a game, to ensure that the player is able to move forward and is rewarded for doing well. These tasks are important as the result can determine whether the player finds the game enjoyable or not. This subject provides an advanced exploration of game design, by examining the tasks that designers need to carry out within the framework of a game world.</p> <p>See <a href="http://www.courses.qut.edu.au/">http://www.courses.qut.edu.au/</a></p> <p><b>For more information contact:</b></p> <p>Dr Ross Brown  Phone: (07) 3138 9481  Email: <a href="mailto:r.brown@qut.edu.au">r.brown@qut.edu.au</a></p>



Course	Description and Contact Information
ITB746 Modelling and Animation Techniques	<p>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.</p> <p>See <a href="http://www.courses.qut.edu.au/">http://www.courses.qut.edu.au/</a></p> <p><b>For more information contact:</b></p> <p>Aspro Ruth Christie  Phone: (07) 3138 2736  Email: <a href="mailto:r.christie@qut.edu.au">r.christie@qut.edu.au</a></p>
ITB747 Real Time Rendering Techniques	<p>This subject will provide you with knowledge and skills in basic to advanced techniques in real-time rendering, using shading languages. You will be able to implement a high quality real-time rendering system in an industry standard API.</p> <p>See <a href="http://www.courses.qut.edu.au/">http://www.courses.qut.edu.au/</a></p> <p><b>For more information contact:</b></p> <p>Dr Ross Brown  Phone: (07) 3138 9481  Email: <a href="mailto:r.brown@qut.edu.au">r.brown@qut.edu.au</a></p>
ITB254 Interaction Design	<p>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.</p> <p>See <a href="http://www.courses.qut.edu.au/">http://www.courses.qut.edu.au/</a></p> <p><b>For more information contact:</b></p> <p>Dr Ross Brown  Phone: (07) 3138 9481  Email: <a href="mailto:r.brown@qut.edu.au">r.brown@qut.edu.au</a></p>



Course	Description and Contact Information
<b>SIAA – SimTecT Workshops</b>	
Half and one-day Workshops conducted at the annual SimTecT Conference	See <a href="http://www.siaa.asn.au/simtect/2008/workshops.htm">http://www.siaa.asn.au/simtect/2008/workshops.htm</a> Also Consult the SIAA website for training information: <a href="http://www.siaa.asn.au/activities_training.html">http://www.siaa.asn.au/activities_training.html</a>



Course	Description and Contact Information
<b>Simulinc</b>	
Simulator Training Courses	<p>Simulinc currently offer three established courses:</p> <ol style="list-style-type: none"> <li>1. Introduction to Flight Simulators is a two-day course intended for persons with limited or no previous exposure to modern flight simulators.</li> <li>2. Flight Simulators for Instructors is a two-day course for persons assigned to instruct in a flight simulator.</li> <li>3. Flight Simulator Evaluation is an eight-day course meeting the requirements of the Australian CASA for persons who require formal qualification in simulator testing and evaluation.</li> </ol> <p>See <a href="http://www.simulinc.com.au/training.html">http://www.simulinc.com.au/training.html</a></p> <p><b>For More Information Contact:</b></p> <p>Bryan Wellington  Phone (02) 6296 3153  Email: <a href="mailto:bryanw@simulinc.com.au">bryanw@simulinc.com.au</a></p>
<b>University of Adelaide</b>	
Modelling and Simulation of Defence Systems (Introductory Course)  Modelling and Simulation of Defence Systems (Advanced Course)	<p>These courses provide an in-depth understanding of the nature of systems modelling and simulation in defence projects. It aims to equip developers, managers and users in modelling and simulation projects with practical insights into successfully accomplishing their respective tasks.</p> <p>The course materials have been jointly developed and delivered by experts with defence industry experience from the Centre for Defence Communications and Information Networking (CDCIN) at the University of Adelaide and the Defence College of Management and Technology (DCMT) at the University of Cranfield, UK. Course materials include case studies, group activities and hands-on exercises.</p> <p>The course timetable and further details are available at the CDCIN website (refer below). Course contents and venue can be tailored to meet customer requirements.</p> <p>Visit <a href="http://www.cdcin.adelaide.edu.au/training">http://www.cdcin.adelaide.edu.au/training</a></p> <p><b>For more information contact:</b></p> <p>Dr Dushy Tissainayagam</p>



Course	Description and Contact Information
	Phone: (08) 8303 3238 Email: <a href="mailto:dushy.tissainayagam@adelaide.edu.au">dushy.tissainayagam@adelaide.edu.au</a>



Course	Description and Contact Information
<b>University of Ballarat</b>	
HLA for non-programmers	<p>A one week course that describes all aspects of the HLA but does not involve programming. This overview is aimed at those who oversee simulation development activity as well as developers that will be engaged in such activity. The emphasis is on understanding the breadth of the HLA standard and the process through which a particular domain simulation can be represented through HLA.</p> <p><a href="http://dsl.ballarat.edu.au/index.php?page=education">http://dsl.ballarat.edu.au/index.php?page=education</a></p> <p><b>For More Information Contact:</b></p> <p>Dr David Stratton  Phone: (03) 5327 9279  Email: <a href="mailto:d.stratton@ballarat.edu.au">d.stratton@ballarat.edu.au</a></p>
Programming HLA Federates	<p>A one week course in which students develop an HLA Federation using Java and/or C++ for individual component federates. Students will work in small groups using the language of their choice to develop one of a number of federates in an Air Traffic Control scenario. They initially test their work against a "correct" implementation of the rest of the federation and latterly against the other groups.</p> <p><a href="http://dsl.ballarat.edu.au/index.php?page=education">http://dsl.ballarat.edu.au/index.php?page=education</a></p> <p>Dr David Stratton  Phone: (03) 5327 9279  Email: <a href="mailto:d.stratton@ballarat.edu.au">d.stratton@ballarat.edu.au</a></p>



Course	Description and Contact Information
<b>University of Melbourne</b>	
620-131 Scientific Programming and Simulation	<p>This subject is recommended for students who plan to do major studies in mathematics, statistics, actuarial studies or are interested in the life sciences or commerce and who have completed VCE Specialist Mathematics with a score of 33 or more.</p> <p>This subject introduces students to the important tool of stochastic simulation used to model real phenomena in many areas of science, commerce and engineering. It is a suitable elective for students with a quantitative interest in any of these areas and is a recommended subject for actuarial students.</p> <p>In this subject, students implement their simulation models in a general purpose programming language, Perl, a freely available language commonly used in Web programming and bioinformatics. It exposes students who would not otherwise undertake computer science/software engineering studies to important programming concepts using a modern scripting language.</p> <p>See <a href="http://www.ms.unimelb.edu.au/~fylc/s131.html">http://www.ms.unimelb.edu.au/~fylc/s131.html</a></p> <p><b>For more information contact:</b></p> <p>Karen Baker (Director of First Year Learning Centre)  Phone: (03) 8344 8054  Email: <a href="mailto:K.Baker@ms.unimelb.edu.au">K.Baker@ms.unimelb.edu.au</a></p>
<b>University of Newcastle</b>	
<i>Distance education postgraduate coursework offered by the University of Newcastle: See <a href="http://www.gradschool.com.au">www.gradschool.com.au</a></i>	
DESN6430 Virtual Reality and Computer Games	<p>This course will focus on the area of Computer Games, their development, identify necessary skills and examine the areas of pre to post production, offering many sources of further information, industry contacts and links along the way. This course offers a solid grounding in this rapidly expanding entertainment industry.</p>
INFO6080 Distributed Computing Technologies	<p>This course introduces the theories and practices of designing a user interface that will be used to maintain a database in a small business. The course introduces the concepts and practices of system design by evolutionary prototyping and the prototyping system development life cycle. End-user input into the prototyping system development life cycle is emphasised. This course also introduces the three-tier database access model and Microsoft s ActiveX Data Objects (ADO) that are one of the core technologies used to implement this model using Microsoft products.</p>



Course	Description and Contact Information
SENG6110 Introduction to Software Engineering	This course introduces the fundamentals of analyzing a problem and then implementing a solution as a computer software system. Emphasis is placed on programming and testing. Requirements analysis and software design are introduced. The course provides a basic introduction to data abstraction and object-oriented analysis and design. An overview is also given of the basic hardware and software components of a computer system, including operating systems, compilers, interpreters, memory and control logic.
<i>Postgraduate coursework offered by Masters of Engineering Management at Newcastle University (Program Convenor: Ed Szczerbicki on (02) 4921 6209 )</i>	
MECH6890 Computer Simulation & Modelling	<p>Course content: decision making process, simulation process, models and systems, uncertainty in decision making, Discrete and continuous systems, applications of system simulation and modeling, unified modeling framework, network modeling, queuing systems, control systems, resource allocation, inventory systems, traffic systems, PERT network analysis. The course addresses concepts of systems engineering and management concerned with the design, improvement, and installation of integrated systems of people, materials, equipment, and energy. Develops engineering management problem solving skills through systems approach, problem solving process, model building, introduction to graphical modeling framework, and network modeling. Emphasis is placed on strengthening modeling, decision making, and problem solving skills by providing problem examples facing industry, commerce, government and society that illustrate procedures for modeling systems with limited resources (both human and technical), breakdowns, uncertainties, and complex logic and decision structures.</p> <p><b>For more information contact:</b></p> <p>Phone: (02) 4921 6209  Email: <a href="mailto:admissions@newcastle.edu.au">admissions@newcastle.edu.au</a> or via Engineering Faculty: <a href="mailto:eng-builtenviro@newcastle.edu.au">eng-builtenviro@newcastle.edu.au</a></p>
<i>Postgraduate Coursework offered on-site at Newcastle University</i>	
COMP 6380 Machine Intelligence	Provides an overview of the various areas of artificial intelligence; the main issues and their significance; the power and limitations of classical logic as a representation language for non-mathematical tasks; game tree search; formal classic predicate logic; syntax, semantics; problem-solving; automated reasoning for agents; knowing and reasoning; acting logically; artificial life; neural networks; adaptive robotics; brain theory; learning; machine learning.



Course	Description and Contact Information
<i>Postgraduate Programs at Newcastle University</i>	
	<p>The University of Newcastle postgraduate by coursework homepage is:  <a href="http://www.newcastle.edu.au/study/courseinfo/postgrad/index.html">http://www.newcastle.edu.au/study/courseinfo/postgrad/index.html</a></p> <p>This homepage provides links to the following postgraduate programs:</p> <p><a href="#">Graduate Certificate in Multimedia (Online)</a>  <a href="#">Graduate Certificate in Information Technology (Online) - Handbook</a>  <a href="#">Graduate Certificate in Information Technology - Handbook</a>  <a href="#">Graduate Diploma in Information Technology (Online) - Handbook</a>  <a href="#">Graduate Diploma in Information Technology - Handbook</a>  <a href="#">Master of Business Administration/Master of Information Technology</a>  <a href="#">Master of Information Technology (Honours)</a>  <a href="#">Master of Multimedia (Online)</a>  <a href="#">Master of Engineering Management - Handbook</a>  <a href="#">Master of Information Technology (Online) - Handbook</a>  <a href="#">Master of Information Technology - Handbook</a>  <a href="#">Master of Advanced Information Technology - Handbook</a></p> <p>Students are able to move sequentially from Graduate Certificate to enrolment in Graduate Diploma and Masters, or enrol directly, the former approach enabling the progressive outcomes to be recognised as a qualification.</p> <p>The University of Newcastle Masters of Advanced IT was recently developed in partnership with the Australian Computer Society.</p>



Course	Description and Contact Information
<b>University of New South Wales (ADFA)</b>	
<p><b>NOTE: A number of ADFA Courses are available via Distance Education</b></p> <p>This website lists postgraduate courses at UNSW@ADFA which are offered by distance education mode <a href="http://www.unsw.adfa.edu.au/student/distance/">http://www.unsw.adfa.edu.au/student/distance/</a></p>	
Introduction to Simulation Foundations	<p>This course focuses on the history and legacy of simulation as embraced within the defence community and presents the basic science issues surrounding real world representation within a synthetic environment. The defence application areas of training, analysis and acquisition are also presented and discussed.</p> <p>Contact: Carrie Wright (Office Manager, Business Services Unit)            Email: <a href="mailto:business.office@adfa.edu.au">business.office@adfa.edu.au</a></p>
Advanced Simulation Practicum	<p>Provides professionals currently developing, using, or procuring simulation systems, an in-depth understanding of the simulation principles, methodologies, and architectures which underpin the appropriate use of a given modeling approach and simulation technique for a specified purpose. This course focuses more on the science and engineering aspects of modeling and simulation and is conducted in the workshop environment allowing for discussion, practicals and group exercises.</p> <p>Contact: Carrie Wright (Office Manager, Business Services Unit)            Email: <a href="mailto:business.office@adfa.edu.au">business.office@adfa.edu.au</a></p> <p>NOTE: Registrations of interest in the <b>Defence &amp; Related Industries Simulation Courses</b> hosted by <a href="http://www.unsw.adfa.edu.au">UNSW@ADFA</a> can be made via <a href="http://www.unsw.adfa.edu.au/units/busservices/short_courses/Simulation/Simulation.html">http://www.unsw.adfa.edu.au/units/busservices/short_courses/Simulation/Simulation.html</a> or by contacting the Business Services office email: <a href="mailto:business.office@adfa.edu.au">business.office@adfa.edu.au</a></p>
ZITE3404 – Simulation (also referred to as ACSC3006 Simulation)	<p><b>NOTE: This course is only open to military officers in uniform</b></p> <p>This course introduces students to the skills of writing simulation models. Topics will include concepts of modelling, continuous and discrete systems, random number generation and tests for randomness, timestepped and event-stepped simulation, object oriented simulation techniques, statistical analysis of output, verification and validation approaches of simulation models.</p> <p>See <a href="http://www.itee.adfa.edu.au/courses/ZITE3404/">http://www.itee.adfa.edu.au/courses/ZITE3404/</a></p> <p><b>For more information contact:</b></p> <p>Dr Mark Pickering (Postgraduate Coordinator)            Phone: (02) 6268 8238</p>



Course	Description and Contact Information
	Email: <a href="mailto:m.pickering@adfa.edu.au">m.pickering@adfa.edu.au</a>
ZITE7402 Introduction to Simulation	<p>The aim of this course is to introduce students to the principles of simulation. These cover: concepts of modeling, continuous and discrete systems, time stepped and event stepped simulation of queue systems and inventory systems, exposure to simulation languages.</p> <p>See <a href="http://www.itee.adfa.edu.au/courses/ZITE7402/">http://www.itee.adfa.edu.au/courses/ZITE7402/</a></p> <p><b>For more information contact:</b></p> <p>Dr Mark Pickering (Postgraduate Coordinator)  Phone: (02) 6268 8238  Email: <a href="mailto:m.pickering@adfa.edu.au">m.pickering@adfa.edu.au</a></p>
ZITE8412 - Simulation	<p>The aim of this course is to present the principles of simulation. These cover: concepts of modelling, continuous and discrete systems, time stepped and event stepped simulation of queue systems and inventory systems, exposure to simulation languages. The course is similar to ZITE7402 but is assessed differently.</p> <p><a href="http://www.itee.adfa.edu.au/courses/ZITE8412/">http://www.itee.adfa.edu.au/courses/ZITE8412/</a></p> <p><b>For more information contact:</b></p> <p>Dr Mark Pickering (Postgraduate Coordinator)  Phone: (02) 6268 8238  Email: <a href="mailto:m.pickering@adfa.edu.au">m.pickering@adfa.edu.au</a></p>
ZITE8413 - Advanced Simulation	<p><b>Not available in 2008</b></p> <p>This course addresses topics such as simulation architectures (HLA, DIS), engagement models, representation of human factors, human in the loop simulation, simulation for training, distributed simulation, grid simulation, Defence and security applications.</p> <p><a href="http://www.itee.adfa.edu.au/courses/ZITE8413/">http://www.itee.adfa.edu.au/courses/ZITE8413/</a></p> <p><b>For more information contact:</b></p> <p>Dr Mark Pickering (Postgraduate Coordinator)  Phone: (02) 6268 8238  Email: <a href="mailto:m.pickering@adfa.edu.au">m.pickering@adfa.edu.au</a></p>



Course	Description and Contact Information
Graduate Certificate in Science (GradCertSc)	<p>The Graduate Certificate in Science enables students to specialise in the following plans of Defence Operations Research, Information Technology, Information Technology – Enterprise Architecture, and Operations Research and Statistics.</p> <p><b>For more information contact:</b></p> <p>Dr Mark Pickering (Postgraduate Coordinator)            Phone: (02) 6268 8238            Email: <a href="mailto:m.pickering@adfa.edu.au">m.pickering@adfa.edu.au</a></p>
Specialisations [with Simulation content] available in the Graduate Certificate in Science Program	<p><b>GradCertSc in Defence Operations Research</b></p> <p>The GradCertScience in Defence Operations Research is only available to participants in DSTO’s Continuing Education Initiative. This plan is designed for students with an undergraduate degree or established profession in another field who wish to gain an understanding of decision making, analysis and operations research techniques relevant to researchers in the Defence sector.</p> <p>The GradCertScience in Defence Operations Research forms the first step in a sequence of study to Graduate Diploma and Masters qualifications in the discipline.</p> <p><b>GradCertSc in Operations Research and Statistics</b></p> <p>The GradCertScience in Operations Research and Statistics is designed for students with an undergraduate degree or established profession in another field who wish to gain an understanding of the principles and practice of operations research and statistical analysis and to develop skills in analysis, problem solving and decision making. The certificate assists professionals to understand and be able to employ operations research and statistical analysis skills in their own environment.</p> <p>The GradCertScience in Operations Research and Statistics forms the first step in a sequence of study to Graduate Diploma and Masters qualifications in the discipline. The certificate also allows students with the relevant academic or professional background to acquire a qualification for advanced study in a more specialised aspect of the program without the need to complete all the requirements of a Graduate Diploma or Masters degree.</p> <p><b>For more information contact:</b></p> <p>Dr Mark Pickering (Postgraduate Coordinator)            Phone: (02) 6268 8238            Email: <a href="mailto:m.pickering@adfa.edu.au">m.pickering@adfa.edu.au</a></p>
Specialisations [with simulation content] available in the Graduate	<p><b>Graduate Diploma in Science (GradDipSc)</b></p> <p>The Graduate Diploma of Science enables students to specialise in the following plans of C4ISREW, Defence Operations Research, ICT Management, Information Technology. Information Technology – Enterprise Architecture (IT – Enterprise Architecture), Operations Research and Statistics,</p>



Course	Description and Contact Information
Diploma of Science Program	<p>Software Development, Systems Network Administration, Web Technologies</p> <p><b>GradDipSc in Defence Operations Research</b></p> <p>The GradDipSc in Defence Operations Research is only available to participants in DSTO's Continuing Education Initiative. It is designed for postgraduate scholars with undergraduate qualifications in a relevant science discipline and/or extensive professional experience, to provide a comprehensive understanding of decision making, analysis and operations research techniques relevant to researchers in the Defence sector.</p> <p><b>GradDipSc in Operations Research and Statistics</b></p> <p>The GradDipSc in Operations Research and Statistics is designed for postgraduate scholars with undergraduate qualifications in a relevant discipline and/or appropriate professional experience who wish to develop an enhanced understanding of the principles and practice of operations research and statistical analysis and to develop their skills in analysis, problem solving and decision making. The diploma provides an advanced qualification for professional analysts, modellers and statisticians and the foundations for students wishing to proceed to higher levels of study in the discipline.</p> <p><b>GradDipSc in Simulation and Experimentation</b></p> <p>Students undertaking the Graduate Diploma of Science in Simulation and Experimentation are required to take 6 coursework courses (36UOC) from the courses set out below. Students must complete three compulsory courses and two elective courses. Not all elective courses will be available in a particular year.</p> <p><b>For more information contact:</b></p> <p>Dr Mark Pickering (Postgraduate Coordinator)  Phone: (02) 6268 8238  Email: <a href="mailto:m.pickering@adfa.edu.au">m.pickering@adfa.edu.au</a></p>
Specialisations [with Simulation content] available in the Master in Science Program	<p><b>MSc in Defence Operations Research</b></p> <p>The MSc in Defence Operations Research is only available to participants in DSTO's Continuing Education Initiative. It is designed for postgraduate scholars with undergraduate qualifications in a relevant science discipline and/or extensive professional experience, to provide a comprehensive understanding of decision making, analysis and operations research techniques relevant to researchers in the Defence sector.</p> <p><b>MSc in Operations Research and Statistics</b></p> <p>The MSc in Operations Research and Statistics is designed for postgraduate scholars with appropriate undergraduate qualifications in a relevant science discipline and/or extensive professional experience who wish to develop a high level understanding of the principles and practice of operations research and statistical analysis and to strengthen their skills in analysis, problem solving and decision making. Its consideration of a wide range of analytical and quantitative techniques makes it suitable to both the professional analyst and to the student wishing to develop or employ those skills in higher level research.</p>



Course	Description and Contact Information
	<p><b>MSc in Simulation and Experimentation</b></p> <p>Students undertaking the Master of Science in Simulation and Experimentation are required to take 8 coursework courses. Students must complete three core courses and five elective courses. Not all elective courses will be available in a particular year.</p> <p><b>For more information contact:</b></p> <p>Dr Mark Pickering (Postgraduate Coordinator)  Phone: (02) 6268 8238  Email: <a href="mailto:m.pickering@adfa.edu.au">m.pickering@adfa.edu.au</a></p>
<b>University of New South Wales (UNSW)</b>	
<p>Health Systems Simulation - PHCM9901</p>	<p>A Practical Hands-On Simulation Course in applying systems theory to health problems, taught by experienced health systems simulation practitioners, which uses the new AnyLogic multi-method simulation software (agent based/system dynamics/discrete event).</p> <p>The learning approach takes the form of structured walkthroughs of a portfolio of classical and real case studies, including epidemic models and diffusion of technology, patient flows through care systems, funding and workforce problems, population ageing, chronic disease management, medicines use and system performance improvement. The course is targeted to a broad range of student participants, including health services managers and planners, clinical management and practice improvement specialists, process and systems improvement facilitators and IT and technical experts interested in health simulation.</p> <p>See <a href="http://www.handbook.unsw.edu.au/postgraduate/courses/2005/PHCM9901.html">http://www.handbook.unsw.edu.au/postgraduate/courses/2005/PHCM9901.html</a></p> <p>See also <a href="http://sphcm.med.unsw.edu.au/sphcm.nsf/c2fab74f3f54c22ca256afc00097c53/2b290b8229bebfd7ca256bd700146567/\$FILE/phcm9901_Overview.pdf">http://sphcm.med.unsw.edu.au/sphcm.nsf/c2fab74f3f54c22ca256afc00097c53/2b290b8229bebfd7ca256bd700146567/\$FILE/phcm9901_Overview.pdf</a></p> <p><b>For More Information Contact:</b></p> <p>Dr Geoff McDonnell (Director Adaptive Care Systems, Research Fellow Centre for Health Informatics UNSW)  Telephone: (02) 9386 0993  E-mail: <a href="mailto:geoff.mcdonnell@unsw.edu.au">geoff.mcdonnell@unsw.edu.au</a></p>
<b>University of Queensland (UQ)</b>	
<p>An Introduction to Virtual Reality</p>	<p>Virtual Reality (VR), also called Immersive Environments, incorporates a host of technologies, which bring to life design concepts and the most abstract</p>



Course	Description and Contact Information
	<p>of ideas. It helps interdisciplinary teams communicate through a common medium, removing ambiguity and confusion that can be prevalent in many other forms of presentation.</p> <p>For more than 10 years VR has assisted commercial organisations around the world, from fields as diverse as heavy engineering to medicine, realise substantial savings in both time and money. VR has been successfully demonstrated as a valuable tool and is now frequently used in planning, design review, consultation and training.</p> <p>'An Introduction to Virtual Reality' is a short course designed specifically for commercial and government organisations that stand to benefit from this powerful and versatile technology. The course presents an overview of the technologies and uses case studies of Queensland projects and prominent organisations that have now adopted VR into their work processes. This course represents a unique opportunity to learn about VR and its proven applications in industry and commercial organisations.</p> <p>The course includes 'hands on' workshops in order to gain an understanding, of how VR softwares can be used to create fully interactive 3D environments.</p> <p>The course is delivered by a professional team which has extensive expertise and many years of experience in developing commercial VR applications throughout the world.</p> <p><a href="http://www.maths.uq.edu.au/online?pageid=33">http://www.maths.uq.edu.au/online?pageid=33</a></p> <p><b>For More Information Contact:</b></p> <p>Dr Pamela Burrage (Advanced Computational Modelling Centre)  Phone: (07) 3365 1349  Email: <a href="mailto:pmb@maths.uq.edu.au">pmb@maths.uq.edu.au</a></p>
<b>University of South Australia (UniSA)</b>	
Modelling and Simulation for Systems Engineering	<p>Fundamental concepts of modelling and simulation. Conceptual, declarative, functional, constraint and spatial models. Model execution. Computer-based modelling and simulation. Modelling and simulation software tools. High Level Architecture and distributed simulation standards. Universal Modelling Language and Object-Oriented simulation code. Modelling and simulation in support of T&amp;E and systems engineering. Case studies and applications in T&amp;E and systems engineering. Simulation, Test and Evaluation Process (STEP). Simulation-based acquisition.</p> <p><a href="http://www.unisanet.unisa.edu.au/Courses/course.asp?Course=013094">http://www.unisanet.unisa.edu.au/Courses/course.asp?Course=013094</a></p> <p><b>For more information contact:</b></p> <p>Dr William Scott (Research Fellow)  Phone: (08) 8302 3581  Email: <a href="mailto:William.Scott@unisa.edu.au">William.Scott@unisa.edu.au</a></p>



Course	Description and Contact Information
UniSA: Defence and Systems Institute (DASI)	<p>The University of South Australia has announced the creation of a new Defence and Systems Institute (DASI) at Mawson Lakes campus, set to operate as world leader in research and education in complex systems.</p> <p>Established in 2007, DASI has evolved from its predecessor, the Systems Engineering and Evaluation Centre (SEEC) and federates much of the delivery capacity of the Centre of Excellence in Defence &amp; Industry Systems Capability (CEDISC) along with the centre of Expertise in Systems Integration (CoESI) and the Systems for Safeguarding Australia Research Centre (SSARC) into a flagship Institute for Defence in Australia.</p> <p>DASI offers:</p> <ul style="list-style-type: none"> <li>▪ Systems Engineering (SE) and Test and Evaluation (T&amp;E) coursework and research degree programs ranging from Graduate Certificate to Doctor of Philosophy (PhD).</li> <li>▪ Military Systems Integration (MSI) coursework at Graduate Certificate, Graduate Diploma and Masters levels.</li> <li>▪ Associate Degree in Engineering (Defence Systems) coursework designed to up-skill experienced trades people for employment as Senior Technical Officers in the Defence Industry (commencing in 2008).</li> <li>▪ Professional Training Programs, to allow participation of our courses without enrolling in a University of South Australia Program.</li> </ul> <p>See <a href="http://www.unisa.edu.au/dasi/">http://www.unisa.edu.au/dasi/</a> and <a href="http://www.unisa.edu.au/dasi/courses/default.asp">http://www.unisa.edu.au/dasi/courses/default.asp</a></p>
<b>University of Technology, Sydney (UTS)</b>	
015096 Simulations and Games: Theory and Design	<p>There are thousands of structured activities called either simulations or games. Each one has been developed to meet particular needs and draws on a range of theoretical frameworks to shape its final form. This subject introduces a number of current theoretical frameworks and assists students to develop skills in the selection, design and construction of activities suitable to their particular needs.</p> <p><a href="http://www.handbook.uts.edu.au/subjects/015096.html">http://www.handbook.uts.edu.au/subjects/015096.html</a></p> <p><b>For more information contact:</b></p> <p>Elysabeth Leigh (Subject coordinator)            Phone: (02) 9514 3850            Email: <a href="mailto:Elysabeth.Leigh@uts.edu.au">Elysabeth.Leigh@uts.edu.au</a></p>





Course	Description and Contact Information
013140 Simulation and Games	<p>This subject examines the scope of the simulations and games field, and introduces theoretical frameworks for their application to particular learning contexts. It uses a practice-based approach to design and usage problems. Relevant theories of human behaviour, social interaction and skill development are considered in relation to the way these inform the design, choices, and use of simulations and games for learning. Concepts examined include 'micro-worlds', online role-play, business management games, social planning games and mechanical simulators.</p> <p><a href="http://www.handbook.uts.edu.au/subjects/013140.html">http://www.handbook.uts.edu.au/subjects/013140.html</a></p> <p><b>For more information contact:</b></p> <p>Elyssebeth Leigh (Subject coordinator)  Phone: (02) 9514 3850  Email: <a href="mailto:Elyssebeth.Leigh@uts.edu.au">Elyssebeth.Leigh@uts.edu.au</a></p>
C06068 Graduate Diploma in Vocational and Workplace Learning  (See also C11163 Graduate Certificate in Vocational and Workplace Learning)	<p>The Graduate Diploma in Vocational and Workplace Learning is designed for practising trainers and adult educators who already have a degree (or equivalent) but who want to develop theoretical frameworks that can further challenge and enhance their present practice. The course is relevant for practitioners working in vocational education, adult education, health education, community education and human resource development.</p> <p>This course uses an enquiry-based approach to learning. The subjects are informed by nine key questions that address the participant's role as educators and learners. These provide a unifying framework for learning throughout the course with the emphasis on integrating and interrogating the subject matter presented. The course is also designed to capitalise on a student's existing knowledge as a platform for further professional development. Every student will have a workplace mentor and a visit from a UTS lecturer to their workplace. This encourages the application of theory and practice to the student's individual context and helps them to link learning at UTS with the workplace.</p> <p>See <a href="http://www.handbook.uts.edu.au/edu/pg/c06068.html">http://www.handbook.uts.edu.au/edu/pg/c06068.html</a></p> <p><b>For more information contact:</b></p> <p>Kate Collier (Course Coordinator)  Phone: (02) 9514 3461  Email: <a href="mailto:kate.collier@uts.edu.au">kate.collier@uts.edu.au</a></p>



Course	Description and Contact Information
31262 Introduction to Computer Game Design	<p>Designing and building computer games is a challenging task. This subject focuses on the software technologies (such as graphics, networks, software design and artificial intelligence) used in computer games and covers basic interactive design, interface design, game design documentation and play mechanics through hands-on projects.</p> <p><a href="http://www.handbook.uts.edu.au/subjects/31262.html">http://www.handbook.uts.edu.au/subjects/31262.html</a></p>
31262 Introduction to Computer Game Programming	<p>This subject covers game-specific programming techniques, algorithms, game testing, game logic, multimedia programming, networking and server design and optimisation of real-time 3D rendering. Students gain sufficient knowledge to extend existing computer game engines or build a basic game engine from scratch.</p> <p><a href="http://www.handbook.uts.edu.au/subjects/31263.html">http://www.handbook.uts.edu.au/subjects/31263.html</a></p>
32003 Computer Game Design	<p>Designing and building computer games is a challenging task. This subject focuses on the software technologies (such as graphics, networks, software design and artificial intelligence) used in computer games and covers basic interactive design, interface design, game design documentation and play mechanics through hands-on projects.</p> <p><a href="http://www.handbook.uts.edu.au/subjects/32003.html">http://www.handbook.uts.edu.au/subjects/32003.html</a></p>
32004 Game Programming	<p>This subject covers game-specific programming techniques, algorithms, game testing, game logic, multimedia programming, networking and server design and optimisation of real-time 3D rendering. Students gain sufficient knowledge to extend existing computer game engines or build a basic game engine from scratch.</p> <p><a href="http://www.handbook.uts.edu.au/subjects/32004.html">http://www.handbook.uts.edu.au/subjects/32004.html</a></p>
31241 3D Computer Animation	<p>This subject covers the major areas of 3D computer animation. It provides students with the opportunity to learn a major commercial 3D modelling, animation, and rendering package.</p> <p>The subject also covers the principles and practice of pre-production planning, production management and post-production of an animation project. The subject is project-based, and each student develops an animation of their choice.</p> <p><a href="http://www.handbook.uts.edu.au/subjects/31241.html">http://www.handbook.uts.edu.au/subjects/31241.html</a></p>



Course	Description and Contact Information
32543 Advanced 3D Computer Animation	<p>This subject covers the major areas of 3D computer animation. It provides students with the opportunity to learn a major commercial 3D modelling, animation and rendering package. It also covers the principles and practice of pre-production planning, production management, and post-production of an animation project. The subject is project-based, and each student develops an animation of their choice.</p> <p><a href="http://www.handbook.uts.edu.au/subjects/32543.html">http://www.handbook.uts.edu.au/subjects/32543.html</a></p>



Course	Description and Contact Information
<b>HUNTER INSTITUTE OF TAFE</b>	
Shiphandling (TAFE Module 1218C)	<p>Using an approved bridge simulator and given various role play situations, safely manoeuvre a vessel in and out of port, completing all maritime documentation and communications according to port and vessel procedures. Simulated tasks include ship characteristics and environmental effects, speed and direction control, tug work, anchoring, communications, advanced manoeuvring procedures, and emergency strategies.</p> <p><b>For more information contact:</b></p> <p>Capt Ian Gray (Head of Maritime Studies)  Phone: (02)4923 7860  Email: <a href="mailto:Ian.Gray@tafe.nsw.edu.au">Ian.Gray@tafe.nsw.edu.au</a></p>
Command Navigation	<p>Provides skills and knowledge to plan a voyage using advanced navigational techniques and equipment, and to undertake search and rescue procedures. An approved bridge simulator is used to provide role play situations. Course content: Practical Passage Planning, Advanced Navigation Techniques, Advanced Collision Avoidance, Procedures, Search and Rescue Procedures, Electronic Navigation Instrumentation, Collision Avoidance Regulations and International Buoyage System.</p> <p><b>For more information contact:</b></p> <p>Capt Ian Gray (Head of Maritime Studies)  Phone: (02)4923 7860  Email: <a href="mailto:Ian.Gray@tafe.nsw.edu.au">Ian.Gray@tafe.nsw.edu.au</a></p>
<b>TAFE (e.g. NSW TAFE Illawarra Institute, Nowra Campus)</b>	
Restricted Electrical Work - Disconnect/Reconnect	<p>This course meets the NSW Office of Fair Trading formal training requirements for issue of a “Qualified Supervisor’s Certificate – Restricted Electrical”. This permits the holder to undertake the straight forward disconnection/reconnection of fixed wired electrical equipment connected to mains supply up to 1000 volts AC or 1500 volts DC and where the electrical work to be undertaken by the individual is either incidental or a primary and regular work related function in the workplace. This excludes the disconnection, reconnection or installation of wiring at a switchboard or switches, socket outlets, light fittings, circuit protective devices or other general electrical accessories.</p>



**Table 5: Courses Related to Simulation Products and Tools**

Course	Description and Contact Information
<b>Agent Oriented Software Limited</b>	
A01: Introduction to Agent Oriented Systems and Intelligent Agents	<p><b>Duration:</b> 0.5 - 1 day  <b>Pre-requisites:</b> None  <b>Level:</b> General, Developer  <b>Target audience:</b>                      These lectures are appropriate for developers planning to build agent-enabled applications based upon the JACK framework and for managers of tasks involving agents and JACK. They are also appropriate for anyone requiring an overview of the domain.</p>
A02: Management Overview of Intelligent Agents	<p><b>Duration:</b> 0.5 day  <b>Pre-requisites:</b> None  <b>Level:</b> General, Management  <b>Target audience:</b>                      These lectures are appropriate for managers of tasks involving agents and JACK. They are also appropriate for anyone requiring an overview of the domain.</p>
A03: Design and Development of Agent Oriented Systems	<p><b>Duration:</b> 2 days  <b>Pre-requisites:</b> A01  <b>Level:</b> general, technical  <b>Target audience:</b>                      These lectures are appropriate for developers planning to build agent-enabled applications based upon the JACK framework and for managers of tasks involving agents and JACK.</p>
A04: Agent Based Simulation Design and Development	<p><b>Duration:</b> 2 days  <b>Pre-requisites:</b> J01 or J02  <b>Level:</b> Technical, Specialist  <b>Target audience:</b>                      These lectures are appropriate for developers planning to build agent-based simulations.</p>
J01: Introduction to JACK Programming	<p><b>Duration:</b> 3 days  <b>Pre-requisites:</b> A01 and Java programming  <b>Level:</b> Technical  <b>Target audience:</b>                      This course involves hands on programming using the JACK development environment and the JACK programming language. These lectures and practicals are appropriate for developers planning to build agent-enabled applications based upon the JACK framework.</p>



Course	Description and Contact Information
J02: Advanced JACK Programming	<p><b>Duration:</b> 2 days  <b>Pre-requisites:</b> J01  <b>Level:</b> Technical, Specialist  <b>Target audience:</b>  This course is appropriate for developers who have already had some experience building agent-enabled applications based upon the JACK framework.</p>
T01: Introduction to JACK Teams Programming	<p><b>Duration:</b> 1 day  <b>Pre-requisites:</b> J01  <b>Level:</b> technical, specialist  <b>Target audience:</b>  This course involves hands on programming using JACK Teams. These lectures and practicals are appropriate for developers planning to build applications using JACK Teams.</p>
<b>Agent Oriented Software Limited – Contact Details:</b>	<p>Company: <a href="http://www.agent-software.com/shared/home/index.html">http://www.agent-software.com/shared/home/index.html</a>  Training in agent-oriented design &amp; implementation: <a href="http://www.agent-software.com/shared/profile/training.html">http://www.agent-software.com/shared/profile/training.html</a></p>
<b>Evans &amp; Peck</b>	
AnyLogic Simulation Software	<p>AnyLogic is a flexible simulation modelling tool allowing the user to create models using agent based, discrete event, system dynamics and dynamic system approaches as well as hybrid combinations of these approaches. As such, participants at the training will not only learn how to use AnyLogic, but will also gain a greater appreciation of different simulation modelling techniques.</p> <p><a href="http://www.decisionmodelling.com/training_AnyLogic.htm">http://www.decisionmodelling.com/training_AnyLogic.htm</a></p> <p><b>For more information about AnyLogic Simulation Software training and other Evans &amp; Peck courses contact:</b></p> <p>Mark Heffernan  Mobile: 0407 946 111 or (03) 9417 8850  Email: <a href="mailto:MHeffernan@evanspeck.com">MHeffernan@evanspeck.com</a></p>



Course	Description and Contact Information
<b>Kahler Communications Oceania Ltd</b>	
<p>Communication, Self and Stress Management</p>	<p>Experience of training individuals in simulators, followed by observation of actual behaviour under pressure, indicates that many fail to comply with performance requirements as set out in briefings. Research on incidents in various High Risk Environments, shows that a leading cause of accidents can be traced to dysfunctional behaviour in stress contexts when even experienced professionals can fail to communicate. Training sometimes seems insufficient to ensure that actual behaviour will be in accord with prior preparation.</p> <p>The 2-day introductory seminar presents Process Communication Model®, a method that enables decoding of behaviour, and supports identification of early warning signals indicating communication is moving from constructive to erroneous, and behaviour moving from cooperative to destructive. The method - introduced to NASA in 1978 by Dr Terry McGuire - enables highly effective connections among trainees, instructors, staff, managers, clients and customers. It introduces methods for swift constructive intervention in stressful moments leading to functional and constructive work modes. Its application in simulated stress contexts can help highlight potential for human error and train individuals to be alert to their own and others' (potentially lethal however unintentional) dysfunctional behaviour.</p> <p>With PCM you will learn to:</p> <ul style="list-style-type: none"> <li>▪ Better understand situations you and your staff are in, and employ an effective communication tool</li> <li>▪ Decode, understand and predict other people's behaviour</li> <li>▪ Remove stress from team situations to improve productivity and training outcomes</li> <li>▪ Identify the onset of behavioural failure patterns</li> <li>▪ Intervene constructively in moments where miscommunication in management or training threatens to derail progress</li> <li>▪ Set people on the way to initiating a U-turn away from mismanagement under stress back into constructive co-operation</li> <li>▪ Improve the effectiveness of your simulation training initiatives.</li> </ul> <p>PCM is supported by a strong scientific background and has been used in most parts of the world for over 30 years.</p> <p>See <a href="http://www.processcom.com.au/">http://www.processcom.com.au/</a></p> <p><b>For more information contact:</b>          Andrea Naef (Director Kahler Communications Oceania KCO Ltd)          Telephone: +64 (0)4 905 0084          Email: <a href="mailto:contact@kahlercom.com.au">contact@kahlercom.com.au</a></p>



Course	Description and Contact Information
<p>Communication, Self and Stress Management, Advanced Course</p>	<p>Building on the skills learned during the introductory course to PCM, the advanced course allows you to practice the skills you have acquired earlier: understanding your own reactions under stress, recognising stress in others, understanding your own behaviour and making communication happen.</p> <p>Using PCM in your every day environment as a manager, developer, researcher, trainer or in customer contact is a function of being able to listen not only to what has been said but at the same time to how it has been said. Too often we are preoccupied with concentrating on what is said, formulating our own reply and focusing solely on the contents of the conversation.</p> <p>To make communication happening, your focus has to be also on the communication channels others are using and to recognise when they are under stress.</p> <p>The advanced course focuses more strongly on what is behind the failure mechanisms when we or others get stressed, making it easier to apply PCM in a variety of situations.</p> <p>Specifically you will learn about:</p> <ul style="list-style-type: none"> <li>▪ The phase issues a particular personality type faces, the concern that drives many of our behaviours when we are under stress</li> <li>▪ Transference and the role it plays in our behaviour and how it creates miscommunication</li> <li>▪ How personality types, their psychological needs, communication channels, their perceptions and stress patterns all hang together and are highly predictable</li> <li>▪ How those stress patterns are linked to particular “scripts”, i.e. ways how people write and talk. You will be able to analyse speech, letters and emails and understand the personality type of the author and whether they are under stress</li> <li>▪ When and how failed communication drives us into stress and when and how missing motivation drives us into stress</li> <li>▪ How language, tones, gestures and other indicators help us to assess a situation and what we can do to motivate others and communicate effectively.</li> </ul> <p>See: <a href="http://www.processcom.com.au/">http://www.processcom.com.au/</a></p> <p><b>For more information contact:</b>          Andrea Naef (Director Kahler Communications Oceania KCO Ltd)          Telephone: +64 (0)4 905 0084          Email: <a href="mailto:contact@kahlercom.com.au">contact@kahlercom.com.au</a></p>



Course	Description and Contact Information
<b>Learning Systems Analysis P/L</b>	
<p>Introduction to Simulation (General)</p> <p>Introduction to Simulation for Trainers</p> <p>Training Needs Analysis for Simulation</p>	<p>These short courses provide fundamental knowledge and skills for people entering the field of simulation from their own field of expertise, as specified by the SIAA Professional Certification Program. The courses are conducted by active members of the SIAA with established standing and expertise in the field. The course schedule and further details are available at the Learning Systems Analysis website (refer below) and ad hoc courses are available to meet special requirements.</p> <p>See <a href="http://www.lsanalysis.com.au">http://www.lsanalysis.com.au</a></p> <p><b>For more information contact:</b></p> <p>Phil Wallace  Phone: (03) 9533 1722  Email: <a href="mailto:courses@lsanalysis.com.au">courses@lsanalysis.com.au</a></p>
<b>Moog</b>	
Introduction to Motion Systems	<p>See <a href="http://www.moog.com/home/">http://www.moog.com/home/</a></p> <p><b>For more information contact:</b></p> <p>Roy Park  Phone: (03) 9561 6044  Email: <a href="mailto:rpark@moog.com">rpark@moog.com</a></p>
<b>MSC Software Australia Pty Ltd</b>	
ADM701: Introduction to Adams	<p>Adams is a motion simulation solution for analysing the complex behaviour of mechanical assemblies, and allows the user to test virtual prototypes and optimise designs for performance, safety and comfort, without having to build and test numerous physical prototypes.</p> <p><b>Target audience:</b>  Designers, engineering analysts, test engineers and university staff</p> <p><b>Pre-requisites:</b> None</p> <p><b>Duration:</b> 4 days (40% lecture, 60% workshop)</p>



Course	Description and Contact Information
ADM703:Advanced Adams	<p>ADM703 is intended for experienced Adams users who want to gain a deeper knowledge on how to tune Adams/Solver to gain optimal ratio between simulation speed and results accuracy.</p> <p><b>Target Audience:</b> Engineering analysts, test engineers and university staff</p> <p><b>Pre-requisites:</b> Adams Full Simulation Package Users</p> <p><b>Duration:</b> 4 days (50% lecture, 50% workshop)</p>
DYT101: Introduction to Dytran	<p>Dytran is used for high rate non-linear transient simulations including fluid structure interactions-such as air/land/sea vehicle crashworthiness, blast simulation and protection of civil/transportation structures, impact forming and tank sloshing.</p> <p><b>Target Audience:</b> Engineering analysts and university staff</p> <p><b>Pre-requisites:</b> Experience with a general-purpose finite element analysis application</p> <p><b>Duration:</b> 3 days (50% lecture, 50% workshop)</p>
EAS101: Introduction to Easy 5	<p>Easy 5 is a schematic-based simulation software that allows the user to model and simulate a variety of dynamic systems containing hydraulic, pneumatic, mechanical, thermal, electrical and digital subsystems.</p> <p>This course gives the engineer a basic understanding of the Easy 5 modelling, simulation, and analysis environment.</p> <p><b>Target Audience:</b> Engineering analysts and university staff</p> <p><b>Pre-requisites:</b> An engineering background, and some basic understanding of differential equations.</p> <p><b>Duration:</b> 2 days (50% lecture, 50% workshop)</p>
MAR101: Introduction to Marc & Mentat	<p>Marc is a powerful, general-purpose, implicit nonlinear finite element analysis (FEA) software program that quickly and accurately simulates static and dynamic structural and coupled physics problems for a wide range of design and manufacturing applications.</p> <p><b>Target Audience:</b> Engineering analysts and university staff</p> <p><b>Pre-requisites:</b> A basic knowledge of statics and strength of materials and previous finite element analysis experience</p> <p><b>Duration:</b> 3 days (50% lecture, 50% workshop)</p>
MAR102: Advanced Marc & Mentat	<p><b>Target Audience:</b> Engineering analysts and university staff</p> <p><b>Pre-requisites:</b> basic knowledge of statics and strength of materials, previous finite element analysis experience and completion of Marc &amp; Mentat Introductory Course</p> <p><b>Duration:</b> 2 days (50% lecture, 50% workshop)</p>



Course	Description and Contact Information
MAR120: Introduction to AFEA	<p>MAR120 covers the use of AFEA (interlocked combination of Patran and Marc) for the solution of complex nonlinear engineering problems.</p> <p><b>Target Audience:</b> Engineering analysts, test engineers and university staff</p> <p><b>Pre-requisites:</b> Basic understanding of finite element method and some experience with Patran.</p> <p><b>Duration:</b> 4 days (50% lecture, 50% workshop)</p>
NAS120: Introduction to Nastran	<p>Nastran is the world standard in finite element analysis solutions. Its capabilities include linear and nonlinear static analysis, dynamic analysis, thermal analysis, buckling, acoustics, aeroelasticity and optimisation.</p> <p><b>Target Audience:</b> Engineering analysts and university staff</p> <p><b>Pre-requisites:</b> A basic knowledge of statics and strength of materials</p> <p><b>Duration:</b> 3 days (50% lecture, 50% workshop)</p>
NAS102: Nastran Dynamic Analysis	<p>NAS102 is a comprehensive presentation of the dynamic capabilities available in Nastran. It covers both fundamental and advanced topics with an emphasis on practical applications and example problems.</p> <p><b>Target Audience:</b> Engineering analysts and university staff</p> <p><b>Pre-requisites:</b> A basic knowledge of statics and strength of materials and Introduction to Nastran or equivalent</p> <p><b>Duration:</b> 3 days (50% lecture, 50% workshop)</p>
NAS103: Nastran Nonlinear Analysis	<p>NAS103 provides a working knowledge of the nonlinear capabilities of Nastran for static and dynamic analysis.</p> <p><b>Target Audience:</b> Engineering analysts and university staff</p> <p><b>Pre-requisites:</b> A basic knowledge of statics and strength of materials and Introduction to Nastran or equivalent</p> <p><b>Duration:</b> 3 days (50% lecture, 50% workshop)</p>
NAS107: Nastran Design Sensitivity and Optimisation	<p>NAS107 covers the theoretical and practical aspects of Nastran design sensitivity and optimisation-emphasis is placed on using the program to solve practical engineering problems.</p> <p><b>Target Audience:</b> Engineering analysts and university staff</p> <p><b>Pre-requisites:</b> Introduction to Nastran or equivalent</p> <p><b>Duration:</b> 3 days (50% lecture, 50% workshop)</p>



Course	Description and Contact Information
NAS113: Analysis of Composite Materials with Nastran	<p>NAS113 describes how to use Nastran for practical analysis and design optimisation of composite materials. Examples are provided that illustrate typical uses for all major topics.</p> <p><b>Target Audience:</b> Engineering analysts and university staff</p> <p><b>Pre-requisites:</b> Introduction to Nastran or equivalent</p> <p><b>Duration:</b> 2 days (50% lecture, 50% workshop)</p>
NAS120: Introduction to FEA	<p>FEA combines the power and ease of use of two of MSC's most popular software programs, Nastran and Patran, into a cost-effective, fully integrated solution tailored for the needs of the mechanical engineer. FEA includes CAD interfaces, geometric modelling, finite element pre- and postprocessing, and comprehensive analysis capabilities.</p> <p><b>Target Audience:</b> Engineering analysts and university staff</p> <p><b>Pre-requisites:</b> A basic knowledge of statics and strength of materials</p> <p><b>Duration:</b> 4 days (50% lecture, 50% workshop)</p>
Nas123: Nastran Implicit Nonlinear Analysis (SOL600)	<p>NAS123 will demonstrate nonlinear analysis using SOL 600 including model setup, material properties, contact and resolving convergence issues, post-buckling behaviour and structural dynamics.</p> <p><b>Target Audience:</b> Engineering analysts and university staff</p> <p><b>Pre-requisites:</b> Basic knowledge of nonlinear analysis fundamentals and Introduction to Nastran or equivalent</p> <p><b>Duration:</b> 3 days (50% lecture, 50% workshop)</p>
PAT301: Introduction to Patran	<p>Patran is a general purpose pre- and post-processor for 3D modelling and visualisation of engineering analysis results. It has become the de-facto standard for linking design, analysis, and results evaluation in a single, seamless environment.</p> <p><b>Target Audience:</b> Engineering analysts and university staff</p> <p><b>Pre-requisites:</b> Basic knowledge of statics and strength of materials and previous finite element analysis experience</p> <p><b>Duration:</b> 4 days (50% lecture, 50% workshop)</p>
PAT302: Advanced Patran and Meshing	<p><b>Target Audience:</b> Engineering analysts and university staff</p> <p><b>Pre-requisites:</b> Introduction to Patran or equivalent</p> <p><b>Duration:</b> 3 days (50% lecture, 50% workshop)</p>



Course	Description and Contact Information
PAT304: Introduction to Patran Command Language	<p>PAT304 provides students with a comprehensive overview of the Patran Command Language (PCL) for site integration and user programming</p> <p><b>Target Audience:</b> Engineering analysts and university staff</p> <p><b>Pre-requisites:</b> Introduction to Patran or equivalent and familiarity with C, FORTRAN or Pascal</p> <p><b>Duration:</b> 4 days (50% lecture, 50% workshop)</p>
PAT318: Durability and Fatigue Life Estimation Using Fatigue	<p>PAT318 introduces methods for evaluation and estimation of fatigue life using Fatigue.</p> <p><b>Target Audience:</b> Engineering analysts and university staff</p> <p><b>Pre-requisites:</b> Knowledge of engineering fundamentals, strength of materials, and machine design.</p> <p><b>Duration:</b> 3 days (50% lecture, 50% workshop)</p>
CFD201: Introduction to Computational Fluid Dynamics Theory	<p><b>Target Audience:</b> Engineering analysts and university staff</p> <p><b>Pre-requisites:</b> An interest in CFD</p> <p><b>Duration:</b> 3 days (50% lecture, 50% workshop)</p>
FAT201: Fatigue Theory for Engineers	<p><b>Target Audience:</b> FAT201 is applicable for those contemplating fatigue analysis or those wishing to improve and accelerate their testing methods.</p> <p><b>Pre-requisites:</b> Knowledge of engineering fundamentals and strength of materials.</p> <p><b>Duration:</b> 2 days (90% lecture, 10% demonstration)</p>
FEA101: Introduction to Finite Element Analysis	<p><b>Target Audience:</b> Designers with little/no experience in FEA-based stress analysis. Engineers who studied FEA but lack the practical industry experience. Managers who are considering investing in FEA. Anyone using FEA who wants a theory and skills refresher ( the course is NOT code specific). University students studying FEA.</p> <p><b>Pre-requisites:</b> A basic knowledge of statics and strength of materials</p> <p><b>Duration:</b> 3 days (60% lecture, 40% demonstration)</p>



Course	Description and Contact Information
<b>MSC Software Australia Pty Ltd – Contact Details:</b>	Company: <a href="http://www.mscsoftware.com.au/">http://www.mscsoftware.com.au/</a> Training courses: <a href="http://www.mscsoftware.com.au/events/courses/index.htm">http://www.mscsoftware.com.au/events/courses/index.htm</a> <b>For More Information Contact:</b> Mareike Kapaun Telephone: (02) 9260 2222 Email: <a href="mailto:mareike.kapaun@mscsoftware.com">mareike.kapaun@mscsoftware.com</a>
<b>Simulation Modelling Services Pty Ltd</b>	
Introduction to Simulation with Arena	The object of the course is to equip the first-time modeller with the skills to tackle simulation projects in his/her own work environment. An appropriate amount of time will be devoted to hands-on experience with workshops using PCs. These workshops will reinforce material covered and allow participants to put skills learned into practice.  See <a href="http://www.simulationmodelling.com.au/">http://www.simulationmodelling.com.au/</a>  <b>For More Information Contact:</b> Garry R Baunach Telephone: (02) 4926 1500 Email: <a href="mailto:gbaunach@simulationmodelling.com.au">gbaunach@simulationmodelling.com.au</a>



# Other Resources

## Recommended Websites

### Associations, Societies and Alliances:

Organisation	Website
Simulation Industry Association of Australia Ltd (SIAA)	<a href="http://www.siaa.asn.au/">http://www.siaa.asn.au/</a>
Australian Society for Simulation in Healthcare (ASSH)	<a href="http://www.sdc.qld.edu.au/assh.htm">http://www.sdc.qld.edu.au/assh.htm</a>
Modeling and Simulation Office Coordination Office (M&S CO)	<a href="https://www.dmsso.mil/">https://www.dmsso.mil/</a>
International Training and Simulation Alliance (ITSA)	<a href="http://www.itsassociation.org/">http://www.itsassociation.org/</a>
Modelling and Simulation Society of Australia and New Zealand Inc	<a href="http://mssanz.org.au/">http://mssanz.org.au/</a>
Society for Modeling & Simulation International (SCS)	<a href="http://www.scs.org/">http://www.scs.org/</a>
International Simulation & Gaming Association (ISAGA)	<a href="http://www.isaga.info/">http://www.isaga.info/</a>
National Center for Simulation (NCS)	<a href="http://www.simulationinformation.com/index2.html">http://www.simulationinformation.com/index2.html</a>
Game Developers' Association of Australia (GDAA)	<a href="http://www.gdaa.asn.au/">http://www.gdaa.asn.au/</a>

## SIAA Special Interest Groups

### Mining and Construction Special Interest Group

- OBJECTIVE: To facilitate a coordinated approach to Mining and Construction simulation related activities in order to maximise opportunities for Australian industry and benefits to users.
- See [www.siaa.asn.au/activities\\_mining\\_construct\\_SIG.html](http://www.siaa.asn.au/activities_mining_construct_SIG.html)

### Emergency Management Special Interest Group

- OBJECTIVE: To facilitate a coordinated approach to Emergency Management and National Security simulation related activities in order to maximise benefits to users and opportunities for Australian industry.
- See [www.siaa.asn.au/activities\\_em\\_mgt\\_SIG.html](http://www.siaa.asn.au/activities_em_mgt_SIG.html)

Contact the SIAA Executive Officer (Peter Hill) for more information.



## References:

Organisation	Website
Simulation Interoperability Standards Organisation (SISO)	<a href="http://www.sisostds.org/">http://www.sisostds.org/</a>
Australian Defence Simulation Office (ADSO)	<a href="http://www.defence.gov.au/capability/ADSO/">http://www.defence.gov.au/capability/ADSO/</a>
Wikipedia Simulation Entry	<a href="http://en.wikipedia.org/wiki/Simulation">http://en.wikipedia.org/wiki/Simulation</a>
Simulation Education Homepage	<a href="http://www.sosresearch.org/simulationeducation/">http://www.sosresearch.org/simulationeducation/</a>
Model Benders - Introduction to Modeling and Simulation Course	<a href="http://www.modelbenders.com/mastersim.html">http://www.modelbenders.com/mastersim.html</a>
Online Role Plays, Simulations & Games	<a href="http://ed-dev.uts.edu.au/teachered/edtech/roleplays.html">http://ed-dev.uts.edu.au/teachered/edtech/roleplays.html</a>

## Conferences:

Title	Website
SimTecT (The Simulation Technology and Training Conference held by the SIAA)	<a href="http://www.simtect.com/">http://www.simtect.com/</a> See also Healthcare Simulation Conference: <a href="http://www.simtecthealth.com/">http://www.simtecthealth.com/</a>
I/ITSEC (The Interservice/Industry Training, Simulation and Education Conference)	<a href="http://www.iitsec.org/">http://www.iitsec.org/</a>
Serious Games Summit	<a href="http://www.gdconf.com/conference/seriousgamessummit.htm">http://www.gdconf.com/conference/seriousgamessummit.htm</a>

