INTRODUCTION

The Curtin Careers Centre, working closely with employers and the university community, sources, develops and delivers career development programs and resources. The purpose of these professional and personal development learning opportunities is to facilitate successful career transitions; especially study to employment and further study and to enhance students’ ability to develop lifelong skills in managing their careers. The Careers Centre also provides accurate, current authoritative labour market and graduate recruitment information focusing on society’s needs and aspirations.

The Careers Centre team has written a series of occupation career booklets to enable tertiary students to consider their chosen field in more depth including information on the current labour market, associated professional associations, pertinent job seeking avenues and samples of relevant and related positions.

Whilst students are actively seeking information about a particular field they need also be aware of recruitment and selection methods and the need to develop strategies to be competitive in their field at graduate entry level.

Self-assessment is an essential component of job seeking i.e. a student needs to be fully aware of their interests, skills, attributes and capabilities to be able to convey this on paper and in person.

The purpose of this occupational booklet is twofold. It will assist students to develop knowledge of trends in employment and current opportunities and to identify existing skills and attributes required to successfully pursue a career in this field.

A student may not be aware that whilst using this resource that they are involved in Career Development Learning (CDL). CDL assists students to develop Self Awareness, to Identify Opportunities, to learn how to Make Decisions, to Manage Transition from university and incorporate Lifelong Learning.

This involves Curtin students working with the Curtin Careers Centre towards the attainment of required skills and knowledge at a tertiary level to successfully manage the changing contexts of life; incorporating:

- Personal Management
- Learning and Work Exploration
- Career Building

The Careers Centre hopes you find this a useful resource.

Contacting the Careers Centre...

Feel free to visit us at Building 303
Email us at careers@curtin.edu.au
Give us a call on (08) 9266 7802
Or check out our website at www.careers.curtin.edu.au

Stay connected to the Careers Centre with Jobs and Events Connect. Access new jobs posted daily, workshop information, special events and employer presentations.
A CHOSEN CAREER IN GEOGRAPHIC INFORMATION SYSTEMS

Geographic Information Systems careers exist in almost every industry. From the mining and resources sector, to the sciences and research to urban and regional planning, GIS opportunities are available everywhere.

GIS graduates improve the understanding of how the world works. GIS graduates analyse complex situations, visualise problems and create plans and solutions necessary to create a sustainable future and they do this through models. GIS professionals increase efficiency, reduce costs and help people to make faster and better decision that consider the factors necessary to create a sustainable future. (GIS.com, 2010).

Many employment sectors utilise the services of a GIS graduate, for further industry advice, you may like to read our occupational booklets on:

- Geology
- Surveying
- Geospatial Mapping (Cartography)
- Urban and Regional Planning

WHAT AM I QUALIFIED FOR?

As a Curtin University of Technology student you will have developed a number of employability skills and attributes that maybe you have not thought of or recognised in your self. In fact, all Curtin University courses are designed to ensure you are given ample opportunity to develop Curtin Graduate Attributes. These attributes are defined as qualities, skills and understandings that Curtin students develop during their time at the university.

They are designed to go beyond the disciplinary specific expertise or technical knowledge you gain at university. According to the Graduate Attributes, Curtin graduates show evidence that they can:

- Apply discipline knowledge, principles and concepts
- Think critically, creatively and reflectively
- Access, evaluate and synthesise information
- Communicate effectively
- Use technologies appropriately
- Utilise lifelong learning skills
- Recognise and apply international perspectives
- Demonstrate intercultural awareness and understanding
- Apply professional skills

Combine these attributes with existing skills gained from life and work experiences and you will start to form a solid picture of what you are capable of. If you are having difficulty with outlining your skills or recording your achievements logon to Resume Express from Jobs and Events Connect – Job Applications – Resumes - Module

Analyse Your Skills, attend a workshop at the Careers Centre or contact careers@curtin.edu.au to make an appointment to see a Careers Consultant.
OCCUPATIONAL ROLES

Almost every industry utilises the services of a GIS modelling system and because of this, determining specific careers options as a graduate in GIS, can be difficult and therefore, career titles in GIS can be unclear. GeoCommunity.com raises this point in an article about skills a GIS Analyst requires. Through research, the article highlights some career titles a GIS employee can go by (2010).

- GIS Analyst
- GIS Technician
- GIS Data Specialist
- GIS Specialist
- GIS Mapping Analyst
- Engineering Technician
- GIS Mapping Assistant
- GIS Application Specialist
- Remote Sensing Surveyor

Also, through further research on job search sites and professional association information some more job titles include:

- GIS Officer
- GIS Developer
- Database administrator
- Project manager
- System administrator
- Geospatial Analyst
- GIS Programmer
- GIS Cartographer
- GIS Consultant
- GIS Support Analyst
- GIS Asset Manager

As mentioned above, there are many industries that use GIS systems that utilise data to increase efficiency, to positively affect operations and assist in decision making and Esri.com (2010) has outlined some areas that can utilise the services of a graduate with a geographical information science background. In a convenient list, some areas are:

BUSINESS

Retailers, insurers, asset managers are seeking to understand markets and use GIS to optimise their operations. Business use GIS to dissect customer information, manage staff, vehicles, assets and facilities.

GOVERNMENT

Governments use GIS to analyse data to increase efficiency, reduce costs, and improve co-ordination and accountability. From census information, to making repairs to roads to enhancing services and health, careers in the government are diverse. Some options a graduate can choose from are:

- Federal, State, Local government
- Economic Development
- Elections
- Land Administration
- Public Works
- Surveying
- Urban and Regional Planning

DEFENSE AND INTELLIGENCE

Most national security decisions involve geography whether that is assessing terrorist targets, where to locate new buildings with minimal environmental impact or to organise defense operations. Some defense departments that use GIS are:

- Defense and Intelligence
- Defense and Force Health Protection
- Enterprise GIS
- Geospatial Intelligence
- Installations and Environment
- Military Operations
- Remote Sensing

The following industries use GIS systems:

- Banking and Financial Services
- Facilities Management
- Insurance
- Media and Press
- Real Estate
- Retail
HEALTH AND HUMAN SERVICES

GIS technology helps the health industry utilise limited resources to positively impact individuals, families and the society. Some areas which utilise GIS technologies are:

- Academic Programs and Research
- Hospitals and Health Systems
- Human Services
- Managed Care
- Public Health

MAPPING AND CHARTING

GIS is an essential tool for mapping and charting companies. GIS manages and produces specific data and maps to allow for effective work flow, data collection, management, production and delivery. Mapping and charting GIS systems can include:

- Aeronautical
- Cartographic Publishing
- Nautical
- Spatial Data Infrastructure

NATURAL RESOURCES

Biologists, botanists, ecologists, engineers, foresters and planners rely on the power of GIS to help in making critical decisions. GIS platforms helps gain a better understanding of problems faced in the environment and bring more accurate information and concerns to the conservation and restoration of our most important natural resource. Some areas that can use GIS graduates include:

- Agriculture
- Climate Change
- Conservation
- Environmental Management
- Forestry
- Marine and Coast
- Mining
- Petroleum
- Water Resources

OTHER AREAS

- Public Safety
- Computer-Aided Dispatch
- Emergency/Disaster Management
- Homeland Security
- Law Enforcement
- Transportation
- Aviation
- Logistics
- Railways
- Ports and Maritime
- Public Transit
- Utilities and Communications
- Electric
- Gas
- Telecommunications
- Water/Wastewater

If you would like more information, please visit: [http://www.esri.com](http://www.esri.com)
LABOUR MARKET INFORMATION

A report prepared to assess the value of spatial information and the impact of technologies (The Spatial Information Council 2008) highlighted the impact of modern spatial information technologies had on the Australian economy. The report, found that spatial information is increasingly being used in most sectors of the economy where it is having a direct impact on productivity and it was conservatively estimated that industry revenue in 2006-07 was $1.37 billion annually and industry gross value around $682 million.

The report also draws attention to the increasing role spatial information has in the bio-security security industry. An example of this was the role that spatial information played in managing the spread of equine influenza virus in Australia in 2007.

‘Spatial information industry is delivering significant environmental and social benefits in addition to the economic benefits. These benefits can be expected to increase significantly as spatial information systems are further integrated into the operation of water markets, carbon markets, natural resources management and environmental management and monitoring programmes more generally’. (ACIL Tasman Pty Ltd 2008, xi)

The results of the report found that the contribution of spatial information is likely to increase as it becomes a mainstream resource in government and business organizations.

SALARIES

Due to the variety of roles a graduate with a degree in geographical information science can go into, salary can be difficult to predict. Its important that before you start looking for employment, to research expected salaries for your chosen industry. Some general salary information from Graduate Careers is below (Graduate Salaries 2009).

<table>
<thead>
<tr>
<th>INDUSTRY</th>
<th>GOVERNMENT</th>
<th>PROFESSIONAL PRACTICE</th>
<th>INDUSTRY / COMMERCIAL</th>
</tr>
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<tr>
<td>Acct and Fin</td>
<td>47,300</td>
<td>43,000</td>
<td>44,000</td>
</tr>
<tr>
<td>Agriculture</td>
<td>45,000</td>
<td>40,000</td>
<td>42,000</td>
</tr>
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<td>Biological Sci</td>
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<tr>
<td>Computer Sci</td>
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<tr>
<td>Earth Sci</td>
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<td>50,000</td>
</tr>
<tr>
<td>Economics / Bus</td>
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<tr>
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<tr>
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<td>NO DATA</td>
<td>47,000</td>
</tr>
<tr>
<td>Physical Sci</td>
<td>50,000</td>
<td>52,500</td>
<td>45,000</td>
</tr>
</tbody>
</table>

Median starting salaries in $AUD of Bachelor Degree graduates in first full time employment and aged less than 25, by field of education and sector of employment, 2009.
GRADUATE PROGRAMS AND ASSOCIATIONS

GRADUATE AND VACATION WORK

Graduate programs are available to final year students and recent graduates. Applications can open as early as February/March of each year. Programs can be from one year to three years in duration, depending on the discipline. Graduate Programs generally offer training and development, job rotation through various departments of the organisation, challenging roles, mentoring, and social and networking opportunities.

Vacation programs are available to penultimate and final year students and can be offered in either Winter or Summer. Winter programs will be approximately four weeks in duration and summer programs can be up to twelve weeks. Vacation programs offer paid positions and training pertinent to your discipline, the application of theory to the workplace and may also lead to selection for a Graduate Program. Applications are generally open in Semester I for Winter Vacation Programs and this can tie in with the advertising of the Graduate Programs. Summer programs are often advertised mid-year, June to August.


Note: You may not wish to apply for a Graduate Program but the position descriptions will give a good indicator of what type of graduate and graduate skills/attributes employers are seeking from prospective candidates. If you believe that you meet this type of criteria, it is likely that you are already in the professional employability stakes. If not, then you know what you have to do leading up to your graduation - increase your employability stakes.

PROFESSIONAL DEVELOPMENT AND ASSOCIATIONS

It is very important that students know their professional associations and affiliations. There are often student membership options which provided you with valuable industry specific information and professional development opportunities and open you up to a vast network of professionals in your chosen area of expertise.

Due to the diversity of careers in GIS, consider which area of GIS you would like to work in and search for professional associations related to that area.

Some websites to assist you are:

Graduate Opportunities.com
header/professional_associations

Australian Professional Organisations, Associations and Societies
THE JOB SEARCH & GETTING STARTED

Set up a Desktop Folder and add a Favorite Internet Explorer folder.

Download jobs of interest for future reference. This allows you to keep a track of who is hiring in your field and the types of positions available.

NOTE: Don’t just save the link as the details will disappear once the position has been filled. Copy the advertisement or any additional files onto Word and keep in your desktop folder. *This is also a useful tip for when you begin working in your field, keep an eye on pertinent positions at all times.

Look at positions available around the country and not just in Perth. This will give an idea of who is recruiting and where and differing salary scales.

Register with websites for specific job alerts – Consider search terms e.g. GIS officer, IT software, geodesy, mapping, analysis, remote sensing, geomatics, surveying etc. This will ensure that email alerts of appropriate jobs are sent directly to you. If positions on the job search websites give the name of the recruiting company – go directly to their website and check for other employment opportunities. Apply directly from the company website if possible.

General Job Search Engines (all provide hits on the above search terms)

Review job advertisements and job requirements – pay attention to the job description form (JDF) or job requirements and to the selection criteria.

NOTE: Selection criteria may be included in a JDF as for government jobs or may be ‘hidden’ in the advertisement. If no set selection criteria are asked to be addressed, target your letter to the position. Don’t just limit yourself to reviewing entry level or graduate positions, look at the variety of positions in your field at various levels and view the requirements. This will let you discover what will be expected of you at higher levels and the type of experience that you will hope to gain at earlier stages in your career. Consider lifelong learning and developing your career.

SPECIFIC JOB SEARCH ENGINES

Check out appropriate organizations/companies in your field and look for Career or Employment pages. See the Careers Resource Officer for assistance if required.

Some specific job search site are;

GIS Careers
http://www.giscareers.com.au

Spatial Jobs Online
http://wwspatialjobs.com.au

GIS Jobs
http://wwwgisjobs.com

Attend the Curtin Careers Festival (held in semester one each year) and other career related events throughout the year to gain more information on the employers hiring graduates in your field. If you missed the Curtin Careers Festival you can pop into Building 599 to get a copy of the Careers Festival Booklets with information regarding all the exhibitors. This information is also available online at www.careers.curtin.edu.au. You should be investigating individual employers throughout your studies to be able to identify those which you may wish
FURTHER YOUR CAREER WITH POSTGRADUATE STUDY

Postgraduate study can enhance your career opportunities by allowing you to develop more specialised expertise in a particular area. If you are considering careers in academia, or industry-based research and development, you will almost certainly need to complete honours and undertake a postgraduate research degree (Masters or PhD).

Some management roles also require postgraduate coursework or research experience. It is also possible to complete shorter coursework degrees (graduate certificates and graduate diplomas) in a wide range of areas. These allow you to expand your career options by gaining knowledge of areas that may be specialized or unrelated to your undergraduate degree.

Competition for graduate employment is intensifying so postgraduate qualifications are increasingly important to prospective employers in some industries. In many cases, salary is also indicative of your level of study. Postgraduate study may be greatly enhanced by the knowledge you gain from being in the work force before, or during your study.

Many postgraduate courses are offered in a range of delivery modes to accommodate the needs of students who are working and studying at the same time. Look for courses that allow you to enrol part-time and/or as an external student.

Some postgraduate courses you could study at Curtin are:

- Postgraduate Courses (by Coursework)
- Postgraduate Diploma in Science (Chemistry)

RESEARCH AT CURTIN

Higher degree by research differs from other postgraduate degrees in that the main part of your work will be in the form of a thesis written under the guidance of a supervisor and associate supervisor(s).

The Department of Spatial Sciences is an acknowledged leader for research of international significance in the areas of geodesy, laser scanning and digital imaging, geographic information science (GIScience) and remote sensing and has a number of internationally experienced staff with a range of expertise in these and other areas. The research generally involves close collaborative links with universities, industry and government, both in Australia and overseas. The Department houses the Western Australian Centre for Geodesy and the GNSS Research Centre.

Research in the Department can be arranged within two broad themes:

Geodesy/photogrammetry and Geographic information science/remote sensing/cartography.

The research programs are funded by both industry and government, including the Australian Research Council (ARC) and other research bodies such as Cooperative Research Centres.

For more information please visit:
Research at Curtin:
http://spatial.curtin.edu.au/research/
FURTHER INFORMATION

WORK EXPERIENCE

Gaining work experience is essential to your career development. Here are some of the benefits:

- Insight on the working environment and relevant industries
- Development and acquisition of new skills
- Creates career networks and integration into the labour market
- An opportunity to demonstrate discipline knowledge, skills and abilities
- Highlights and informs career progression choices
- Enhances competitive edge
- Professional grooming and development

By viewing position descriptions you will get a clear idea of what will be required in a specific role for a specific industry or field and you can start to address any skill shortages prior to completion of your studies.

Employers look for students who are ‘all-rounders’. These are students who, whilst still performing well academically, can also demonstrate an interest in their chosen field beyond the textbooks.

The Curtin Careers Centre has many services to assist you in finding a work placement. These are:

- Download the “How To” Guide for Gaining Work Experience to give you all the tips and hints you need to find a placement [link]
- Attend a Work Experience Workshop conducted by the Careers Centre. Please see Jobs and Events Connect for a full schedule of upcoming workshops [link]

You can email us at careers@curtin.edu.au or phone (08) 9266 7802 to make an appointment.

No matter what type of work placement you are on, accident insurance is essential. Accident insurance covers you if you hurt yourself on a work site and if a work experience opportunity is not paid, the employer’s Personal Accident Insurance does not cover you. The Curtin Careers Centre provides current students with the appropriate accident cover, for free.

Some companies that have work experience programs are:

- Parsons Brinckerhoff [link]
- Australian Secret Intelligence Service [link]
- Australian Bureau of Statistics [link]
- GHD [link]
- GIWIS [link]

STILL CONFUSED?

If you are a current or recent Curtin graduate and you are still unclear about your career directions and the opportunities available for you please contact the Curtin Careers Centre for an individual career counselling session with a professional career development consultant. Just call reception on +61 8 9266 7802

If you are not a Curtin University Student or Alumni but would be interested in learning about the courses at Curtin please contact Future Students +61 8 9266 1000 (domestic students) or +61 8 9266 7331 (international students) or check out their website at [link]
GIS OFFICER

Contract

This role is ideal for a GIS officer who is quick to acquire skills and can communicate effectively.

Responsibilities:

- Capture, import, maintain and validate geospatial data
- Generate products
- Participate in team projects
- Liaise with staff and clients

Requirements for Role:

- Tertiary qualifications in geospatial/computer sciences or engineering (or equivalent experience)
- Knowledge of geospatial data, principles and systems
- Knowledge of CAD
- Experience in configuration management
- Excellent communication and interpersonal skills with problem solving ability

This is a fantastic opportunity for an experienced GIS officer. Apply today!
GRADUATE GIS CONSULTANT

PB is at the forefront of the transport, environmental, mining, power and water sectors. PB has more than 13,000 employees working from over 150 offices in six continents. In Australia Pacific alone, we employ over 2,500 specialists in areas including engineering, environmental science and project management to name a few.

We are currently looking for an experienced Graduate level Design Visualization Specialist who is seeking opportunities to grow their career within the structure of an expanding global consultancy. This individual would be required to form a collaborative working relationship with others in the visualization team based in the Brisbane office. There they will join the team producing highly accurate visualization products across all market areas such as transport, energy, mining, industry, sustainable communities, environmental and water.

Position requires an understanding of traditional or graphics arts skills and talent, an understanding of perspective, light theory, colour theory, photography and be detail-oriented and organized. The successful candidates will also possess good communication skills and be adept working in a team environment. Position requires multi-tasking on a daily basis. Individuals must be articulate, attentive listeners and driven to think outside the boundaries of traditional design.

At PB, you’ll be part of a supportive organisation that encourages continued development through ongoing training and wellbeing programs. You’ll have benefits such as flexible working hours and the option to purchase additional annual leave.
REFERENCES


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