A CHOSEN CAREER IN CIVIL ENGINEERING
CAREERS CENTRE
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 (job application documents) and in person (networking/interviewing/promotion).

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

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 CIVIL ENGINEERING

Civil engineering is a diverse industry with many employment opportunities. Graduates with a degree in Civil Engineering can go into many fields such as geotechnical, coastal, structural, materials, rehabilitation, transport and the environment and traditionally find employment in the building and construction industry and can work in a number of environments such as the private sector and the government. A relatively new career in civil engineering is environmental protection where engineers assess the impact of projects on the environment.

A career in civil engineering is one that will always be in need. As populations grow, our current systems deteriorate and natural disasters, there will always be a requirement for civil engineers, the challenge is, can you invent new ways of doing things to meet the demands for the future?

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.
LABOUR MARKET INFORMATION

The Department of Employment and Workplace Relations and Engineers Australia (2010) report that there is currently a major skills shortage in this profession. Civil engineers are therefore currently in strong demand across the country.

Civil engineers have one of the highest employment rates of all the engineering disciplines. According to Graduate Careers Australia, in 2005 civil engineering graduates had an employment rate of 95.7%.

According to the DEWR’s Australian Jobs (2010) there are good job prospects for civil engineers. Unemployment in this occupation is low, and future job growth is expected to be moderate.

SALARIES

According to the Association of Professional Engineers, Scientists and Managers, Australia’s (APESMA) 2007 Graduate engineer employment survey report, the average starting salary for a graduate civil engineer in 2007 was $49,081, which is below the overall average engineering graduate salary of $51,784. Experienced civil engineers can earn up to around $180,000.

The average annual salary for civil engineers increased by 5.9% in 2006

Further information gathered from DEEWR’s Job Outlook (2010) states that job employment for Civil Engineering Draftspersons and Technicians to 2012-13 is expected to decline. Employment in this small occupation (8900 in August 2008) rose strongly in the past five years, and remained relatively steady in the long-term (ten years), but with small occupations employment estimates can fluctuate.
OCCUPATIONAL ROLES

According to My Future, a website dedicated to career information from the Australian Government (2010), some civil engineering specialisations are:

**AIRPORT ENGINEER**
Specialists in preparing and designing airports, hangers and control towers.

**GEOTECHNICAL/SOIL ENGINEER**
Identify and try to solve problems involving soil, rock and groundwater and design structures in and below the ground.

**MINING AND GEOLOGICAL EVALUATION**
Plan and design mine layout, building of roads and systems to support mine exploration.

**HARBOUR ENGINEER**
Designs and supervises the construction of harbour facilities such as breakwaters, navigation, channels, jetties cargo sheds and handling plants for materials.

**HIGHWAY ENGINEER**
Analyze population growth and traffic patterns and volume to project future requirements.

**PIPELINE ENGINEER**
Preparing design for pipelines and pipeline equipment, facilities and structures in consultation with petroleum and mechanical engineers.

**STRUCTURAL ENGINEER**
Designs the framework of building, towers, bridges, water treatment structures, tunnels and other structures to ensure strength and quality.

**WATER SUPPLY DISTRIBUTION ENGINEER**
Design plant operations and includes pumping of water, supply and storage. Engineers also develop new purification methods and waste removal.

**QUANTITY SURVEYOR**
Prepare cost estimates and plans and projects construction costs and administer contracts for all levels of construction.

**QUALITY ASSURANCE ENGINEER**
Plan, administer and review the acquisition, development and maintenance of structures.

Graduates have also found employment in banking, consulting, management and car design.
GRADUATE AND VACATION PROGRAMS

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.

Both public and private sector employers target final year students from all disciplines. Have a look at what they have to offer.

Some companies that have Graduate Programs are:

Chevron
http://careers.chevron.com/

Ernst & Young (Australia)
http://www.ey.com/au

GRD Minproc
http://www.minproc.com/careers/

Hatch
http://www.hatch.ca/Careers/careersopportunities.htm


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 ASSOCIATIONS

PROFESSIONAL DEVELOPMENT AND ASSOCIATIONS

Join your Professional Association(s) This allows you to keep abreast of trends and developments in your field and to check any employment and networking opportunities.

Professional Associations often have career sections and online job boards. Some information may only be accessible to members and most associations allow for student membership at reduced fees. There may also be opportunities to get involved at branch level or to volunteer. This adds to your skills plus eligibility/or membership also looks good on your resume and demonstrates an interest in your chosen field.

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.

While approaching employers directly might seem a little daunting, it is easier to make contacts with professionals in your field by joining a professional association. Professional associations often organise events, seminars and social functions to assist their members to keep abreast of current issues and practices. For people attempting to enter a field or profession, they can be a good source of contacts and information about an industry!

The Institute of Public Works Engineering Australia

Engineers Australia

http://www.engineersaustralia.org.au

Association of Consulting Engineers Australia
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. civil, construction, surveyor GIS 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)

http://www.seek.com.au
http://www.careerone.com.au

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.

Attend the Curtin Careers Festival (held semester one each year) and other career related events throughout the year to gain more information on the employers hiring graduates in your field. 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 to work for when you graduate.

Engineering Jobs Australia
http://www.engineeringjobs.net.au/

People for the Future
http://www.peopleforthefuture.com.au

Civil Jobs
http://www.civiljobs.com.au

Civil and Construction
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:

- Masters of Engineering Management
- Graduate Diploma in Building Surveying
- Graduate Certificate in Building Planning

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).

Research and consultant activity within the Department of Civil Engineering is directed towards topics where substantial staff expertise is available and strong industrial links have been developed. Some of these are:

- Pavement Research Group
- Concrete Technology and Concrete Structures
- Geotechnical Engineering
- Structural Strengthening and Assessment of Bridges
- Construction management, Construction Economics
- IT Application in Construction
- Water, Wastewater and Dam Engineering

For more information, please visit:

Research at Curtin
http://civil.eng.curtin.edu.au/research/

Engineering
http://scieng.curtin.edu.au/research/eng.cfm

Humanities
http://www.research.humanities.curtin.edu.au
**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 choices
- 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 textbooks.

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


- 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. If a work experience opportunity is not paid the employer’s Personal Accident Insurance does not cover you. The Curtin Careers Centre provides students free appropriate accident cover.

**ADDITIONAL RESOURCES**

- Careers Centre, Engineers Australia [http://www.engineersaustralia.org.au](http://www.engineersaustralia.org.au)

**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 to make an appointment.

If you are not a Curtin University Student or Alumni but would be interested in learning more about the courses at Curtin University please contact Future Students +61 8 9266 1000 (domestic students) or +61 8 9266 7331 (international students) or check out their website at [http://www.futurestudents.curtin.edu.au](http://www.futurestudents.curtin.edu.au)
CIVIL/STRUCTURAL ENGINEERS - TRANSMISSION LINES TOWERS

Leading Engineering Services Group
Power Transmission Towers Focus
Excellent $$$ Negotiable

Due to continued growth this leading engineering group has a vacancy for a civil / structural engineer to join their expanding design team to work on transmission line tower and substation structure design projects.

You will be responsible for;

- Detailed Design of Transmission Lines Towers
- Project Management Coordination
- Liaison with various stakeholders
- Planning & Concept Design of concrete & steel structures for diversified power related projects.

To be successful in this role you will ideally have:

- Tertiary qualifications in civil / structural engineering
- Demonstrated experience in the design and analysis of steel structures and gantries
- Experience in the design of electricity transmission lines towers
- Excellent communication skills

This is a fantastic opportunity to join an industry leader focussed on project excellence and staff development
**EXAMPLE POSITIONS**

**CIVIL/STRUCTURAL ENGINEER - INDUSTRIAL**

Secure position - Ongoing large projects

Paid overtime!!

Flexible environment within experienced team

With over 20 years of history behind them, this Australian owned and operated engineering design and construct company can offer;

- $$ that are truly in line with your experience.
- Paid Overtime!!
- The security of ongoing large projects
- The support of a highly experienced and respected team

You will be involved in a diverse range of interesting projects that come from both the public and private sector. They will mostly centre around the Heavy Industrial sector, but you will also have the chance to work on public infrastructure and building projects. You will work on these projects from design through to construction.

In order to be successful in this role you will be expected to bring;

- Experience in the Heavy industrial/Mining sector
- Experience with both design and site based roles
- Excellent communication skills across all levels
REFERENCES


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