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OPINION

Want more from technicians? Then GIVE our students a CHANCE!

THE CONTINUING DEBATE on what the ratio of engineers to technicians should be, strongly suggests that our industry needs technicians. Yet, when students search for experiential training opportunities, it would seem that the ratio should be 1:0! Not a day goes by without me receiving a desperate e-mail or call from one or more National Diploma students looking for that one year in industry that is required to complete their qualification. Just today I received an e-mail saying, *“My niece and her friends are doing matric this year and they wanted to do Civil Engineering, but now they don't want it at all because they believe there are not enough jobs”*.

So, do we need technicians, or don't we?

Yes, indeed! The engineering team needs engineers, technologists and technicians aplenty. The Engineering Council of South Africa (ECSA) defines the work carried out by engineers as being complex, including pioneering of new engineering services and methods, while the work of technologists is broadly defined as applying current engineering technology to develop and manage modern engineering solutions and processes. According to ECSA's definitions, it is the technicians that are relied upon to

carry out well-defined tasks, i.e. the application of established procedures, practices, standards and codes in support of engineering activities, and the management and operation of routine engineering operations and processes.

Given the amount of routine work critical in support of research, planning, design, construction, operations and maintenance, technicians are essential to all phases of the project cycle. At the research and planning stage their duties may include gathering field data, such as carrying out surveys, investigating site conditions, measuring flows, taking samples or investigating failures of roads, pipes and equipment. During the design phase technicians play an important part in the production of drawings, reinforced concrete and structural detailing, routine design, bills of quantities, etc.

The construction industry is totally dependent on civil engineering technicians whose career paths range from junior site agents on small civil engineering contracts to contract managers running multi-million rand projects. Additionally, civil engineering technicians are largely responsible for the running of concrete batching plants, as well as for the production of major

Table 1 Contact details for the Co-operative Education Departments

University of Technology	Contact	Direct line	E-mail address
Cape Peninsula	Nofemela Fundiswa	021 959 6273	nofumelaf@cput.ac.za
Central	Benny Mokoma	051 507 3351 / 079 899 9999	bmokoma@cut.ac.za
Durban Co-op Manager	Shakeel Ori	031 373 2228	oris@dut.ac.za
Durban Singakwenza Ndawonye: Manager	Nicky Erasmus	033 845 9000	nicky@dut.ac.za
Durban - Steve Biko	Zama Hlubi	031 373 2879	zamah@dut.ac.za
Johannesburg	Susanne Taylor	011 559 6542/2637	staylor@uj.ac.za
Mangosuthu	Lindiwe Myende	031 907 7115	lmyende@mut.ac.za
Nelson Mandela	Johan Steyn	041 504 3506/40	johan.steyn@nmmu.ac.za
Tshwane	Thea Stopforth	012 382 5010	stopfortht@tut.ac.za
Vaal	Edwin Mabelane	016 950 9496	wil@vut.ac.za
Walter Sisulu	Nontsikelelo Mandela	043 702 9250	nmoyikwa@wsu.ac.za

When considering operations and maintenance, it is widely evident by the state of much of our infrastructure, that South Africa requires many more well trained technicians to manage operations and maintenance teams. Skills are required to manage the operations of water and sanitation treatment works, transport systems and teams addressing road, stormwater, rail, harbour, water, sanitation and structural maintenance

materials, such as crushed stone products and hot pre-mixed asphalt. In fact, technicians form the backbone of the civil engineering contracting fraternity.

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Given the shortage of civil engineers, it is critical that we have adequately trained technicians to support the engineering team who addresses all these processes to keep our industry and the infrastructure going.

The academic structure of the National Diploma is composed of six semesters – four theoretical and two in practice. The Universities of Technology (UoTs) provide guidelines on what activities students should be involved in during their year of practical training, as well as a logbook for recording activities and progress. Support is provided by the UoTs' engineering departments by way of advice and visits from lecturers, and from the Co-operative Education Departments, who are involved in the placement of students. These students can learn a tremendous amount if linked with first-year graduates in the workplace, or with experienced artisans, foremen, etc, so need not be a huge load on busy, senior staff. Without opportunities from industry, our students can simply never graduate and take their place in the engineering workforce.

The one year of experiential training is considered as an internship by most SETAs. With adequate planning, such placements can be listed in your Workplace Skills Plans, and stipends can be claimed through discretionary grants devoted to internships.

Our industry – including your business – is built on skilled, committed and experienced engineering staff. Only by developing and nurturing these scarce and valuable youngsters can our businesses be profitable and our economy sustainable.

If you are able to support one or more students in 2012, why not give one of the Co-operative Education Departments a call today (see Table 1). ■



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