ENGINEERING COUNCIL OF SOUTH AFRICA

Overview of professional recognition in Clinical Engineering

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WHAT IS A PROFESSION

- *" A profession is a learned calling which requires advanced knowledge, understanding and abilities gained from intensive and specialized education, training and practical experience."*
- "Members of a profession limit their activities to their areas of knowledge and experience, doing so out of a commitment to serve and protect the public."
- "Professional practitioners ensure that their own competence is maintained throughout their careers."

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From: Gov.Gazette no.37123: Code of Conduct, 13 December,2013

Objectives

1. The objectives of this Schedule are to ensure that Registered Persons, in the execution of their engineering work -

   (1) apply their knowledge and skill in the interests of the public and the environment;

   (2) execute their work with integrity and in accordance with generally accepted norms of professional conduct;

   (3) respect the interests of the public and honour the standing of the profession;

   (4) strive to improve their professional skills and those of their subordinates;

   (5) encourage excellence within the engineering profession; and

   (6) do not prejudice public health and safety.

> Are Clinical Engineering Practitioners ready to do this?
>>Observe the next video!

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www.youtube.com/watch?v=tw3FWdDvrxk

Overview of professional recognition in Clinical Engineering

- Observations from the video insert:

> The Job description for CE is different in USA!
> They provide professional services and are controlled by their own code of conduct! (AAMI)

- But can we learn something?

1. Recognition of skills

2. Focus on Professionalism of the individual which leads to:
   Recognition of CE-skills by all medical professionals and hospitals!

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WHAT IS ECSA?

- Statutory body in terms of the Engineering Professions Act, 46 of 2000 which regulates the engineering profession in S.A.
- Principle Focus: Public Safety, Health & Interest through registration
- Sets and audits Academic & Professional Development Standards for engineering practitioners
- Sets & enforces Standards of Professional conduct
- Builds relationship bridges internationally to achieve international recognition for registered persons

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WHAT ENGINEERING HAS IN PLACE

1. Well established voluntary engineering associations (VA's) – more than 100 years of engineering knowledge.
2. ECSA as the regulator of the engineering profession in South Africa since 1969.
3. Strong engineering industry regarded as the engineering power house in Africa.
4. High standards of engineering education.
5. International acceptance of SA engineering qualifications accredited in terms of Washington, Sydney and Dublin Accords.
6. High standard of assessment of training and experience, which have been recognized internationally in terms of four mutual exemption agreements.

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WHY REGISTER?

- Engineering Risk (similar to the health-profession risk)
- Engineering activity has potential adverse consequences and therefore must be carried out:
- *>Responsibly and ethically*
- *>Economically*
- *>Using available resources efficiently*
- *>Safeguarding health and safety*
- *>In an environment sound and sustainable way, and*
- *>Managing risks throughout the entire lifecycle of a system.*
- Engineering is therefore a regulated profession

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WHY REGISTER? Continued…

- Peer recognition of Qualification and Experience
- Practicing under a code of conduct and ethics for CE, based on international criteria for the profession!
- Public confidence in professional competence
- Membership of professional societies,eg. CEASA
- International recognition, eg. Sidney Accord
- Marketability in employment market
- Exclusive use of reserved names like Pr Eng,
- **Pr. Techni Eng, Pr. Tech Eng**
- Statutory Empowerment
- ***Compulsory registration through work reservation in certain categories***

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Sections 18(2) and 18(3) of the Engineering Profession Act:

* Prohibits a person who is not registered in a category from practicing in that category of registration; and

* Permits a person registered in a category to consult

•Section 26(3) of the Act prohibits a person who is not registered in terms of the Act from performing any kind of work identified for any category of registered persons.

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The Act in Section 26(4) allows one exception to this prohibition.

* The unregistered person may work under the supervision and control of a registered person who must take the responsibility for the work.

* Registered persons taking responsibility for the work of unregistered persons must do so from a fully informed position.

* Must exert active supervision and control, and must approve all critical decisions

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Latest relating to professional registration 2014

1. Identification of Engineering work in SA (2012)
   >Feedback from the industry completed late 2013

2. ECSA council accepted and passed the proposed Bill to:
   >CBE (Council for the Built Environment) Jan, 2014
   >CBE accepted proposal from ECSA March,2014

3. Public comment to close at end: April,2014

4. Forward to Competitions Board: June, 2014

5. Publication of Bill by: November,2014 (Estimate)

- Outcome: All persons doing engineering may practice provided they are registered

6. Implication for Clinical Engineering Practitioners:

- Need to register earlier or later!

1. DoH will change their regulations relating to the maintenance and caretaking of all medical equipment!

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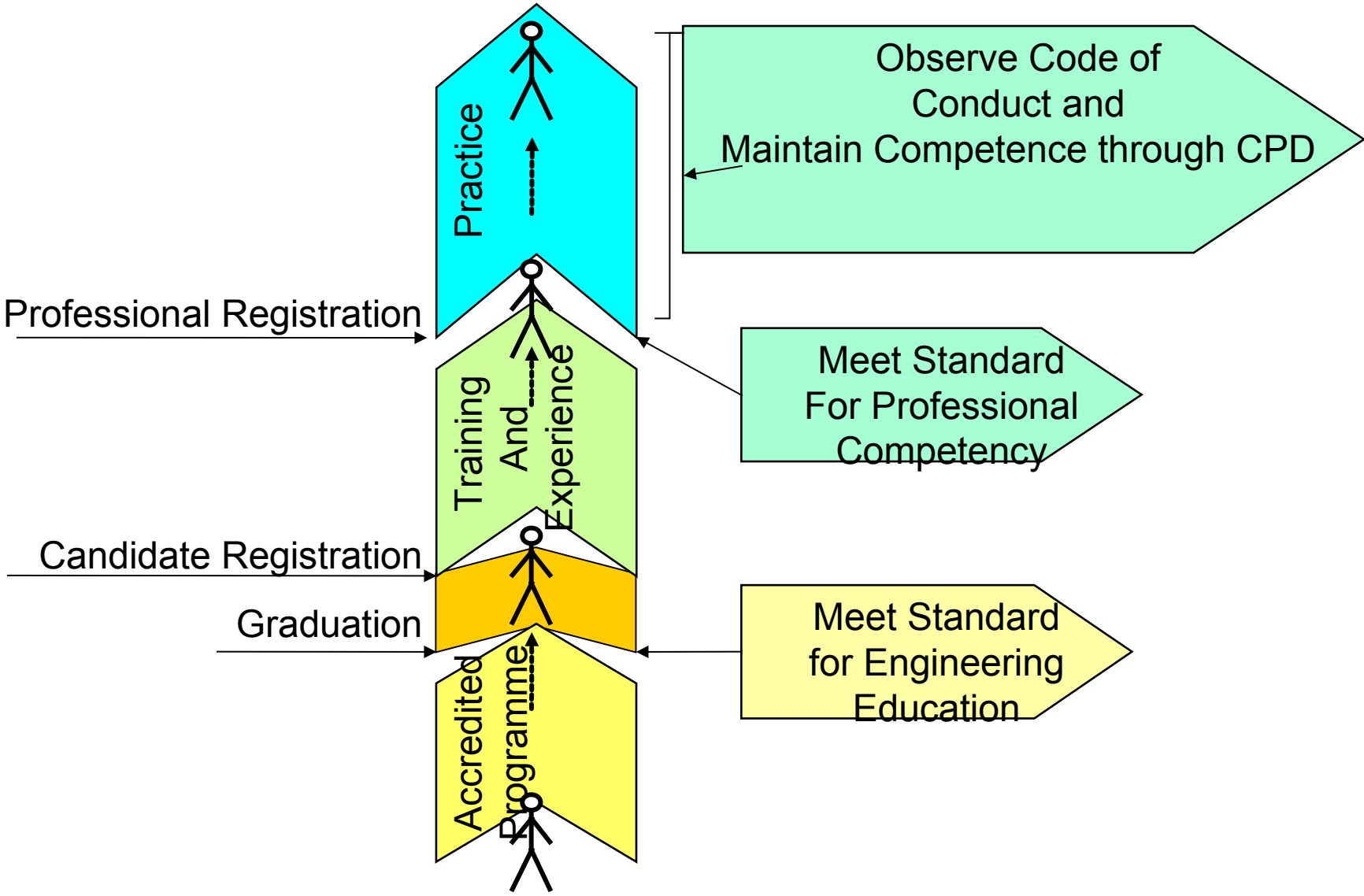
Professional Development Model



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AFTER YOU GRADUATED…

Step 1: Register as a "Candidate" with ECSA

- Ask prospective employers whether they have structured training programs in terms of a Commitment and Undertaking (C&U) with ECSA
- Training under mentorship is included in a C&U

Candidate Prof. Engineer	BSc(Eng)/BEng
Candidate Prof. Eng Technologist	BTech
Candidate Prof.Cert Eng	Cert of Competency
Candidate Prof. Eng Technician	NDip

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PROFESSIONAL REGISTRATION

Worldwide - Based on two legs :

>Academic entry level qualification – basic engineering qualification: BSc(Eng)/BEng for the Engineer.; B Tech for the Technologist and National Diploma in Engineering for Technicians

>Three years of practical / technical post qualification training of sufficient variety and at the appropriate Engineering level for the category of registration concerned.

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TRAINING PERIOD

(Professional Clinical Engineering Technician)

- ✓ Usually not less than 3 years after N Dip in Eng
- ✓ The required level of competencies developed to be assessed by ECSA over 3 years.
- ✓ Imperative that training programs are well developed, managed and implemented.

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Persons Registered with ECSA

2014

Professionals				
Professional Engineers	14,694	15,168	15,597	16,205
Professional Engineering Technologists	3,702	4,066	4,479	4,848
Professional Certificated Engineers	1,036	1,066	1,058	1,071
Professional Engineering Technicians	2,246	2,595	2,887	3,253

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DEVELOPING PROFESSIONAL COMPETENCE

- Post graduate/diploma period of training and experience, candidate is in employment and works with and under supervision of qualified Engineering supervisors and mentors.
- Training process may involve structured activities, including induction and training courses on specific skills or technologies.

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NATURE OF PRACTICAL TRAINING

- Problem investigation, solution, execution/implementation, responsibility.
- Work must essentially be pre-eminently intellectual, of sufficient variety and not of a routine nature,
- Care should be taken that a task is executed timeously and correctly, against the background of acquired knowledge and standard procedures/techniques.
- Continuously consider the impact of decisions on social, safety and environmental aspects.

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PLANNING PRINCIPLES: TRAINING PROGRAMS

Two principles must be followed by supervisors and mentors when planning training programs for candidates:

1. A variety of work activities is necessary for the proper development of a candidate.

- Variety may be obtained at the various stages in the lifecycle of an engineering activity: conception, planning, design, commissioning/construction, implementation, operation and closure.

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PLANNING PRINCIPLES: CONTINUED

- Increasing responsibility and accountability within the organisation must be imposed on and accepted by the candidate until he/she is capable of accepting professional responsibility in making and executing engineering decisions at the full professional level.

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Additional Categories in Clinical Engineering

- MEM (Medical Equipment Maintainer)
- >Level 5 (SAQA qualification)
- Not registered as professional but listed with code of conduct/practice

Focus:

- All artisans working in this field
- Development path towards Professional Categories

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Brief overview of Biomedical Equipment Technicians in the USA

(Note: The "MEM" category in SA is pitched slightly lower than the USA- BMET)

http://www.youtube.com

/watch?v=iyFcUJvVKMg

/watch?v=uhoewoIWjVQ

/watch?v=ZG81JoEZDVc&list=PLRc6SDH0mFyJNT8bDTpGLO8imBzgzSHZb

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Continue: Additional ECSA category in field of Clinical Engineering:

ECSA cat.: MEM (Medical Equipment Maintainer)
>Level 5 qualification
(in USA: scaled down Biomedical Equipment Technician)

Who may apply to register for MEM-cat with ECSA?

- Persons without any formal qualifications or artisans with at least 6 years of medical equipment repair experience
  or
- Persons having a level 5 (SAQA) qualification in mechanics, electronics or electrical and at least 4years of medical equipment repair experience .

or

- Persons that have followed the SAQA registered structured level 5 training program offered soon in SA.

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Latest on professional registration!

- Identification of Engineering Bill (Council for the Built Environment) 2014
- Serving with the monopolies board. >Outcome very soon!
- Will become bill after being accepted!
- Minister of Public Works has requested public comment on the combination of all engineering into one department with ECSA (CBE and other departments amalgamated into one)
- Outcome before the end of the year
- Implication: all engineering practitioners (the categories mentioned in the Identification of Engineering work will have to be registered to be able to practice!)
- How: time scale>through a phasing-in period!
- Cost of registration?: will decrease over time through increase in numbers of registered persons!

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IN CONCLUSION

1. ECSA is the custodian of the values and ethos of the profession;
2. Registered professional…..operates in a global environment.
3. Whilst it is necessary to regulate the profession, it cannot happen in isolation to the rest of the world.
4. One of ECSA's main objectives…….uphold the integrity and dignity of the profession.
5. We wish you well in your Engineering Career!

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Request for comment : Article from the Council for the Built Environment (CBE)

Request for comment from the CBE

Read More...

Draft Identification of Engineering Work Regulations

The draft Identification of Engineering Work Regulations were approved by the Council for the Built Environment (CBE) at their Council meeting held on 17 March 2014.

Read More...

UNECSO Announces a call for Submission of Proposals

UNESCO has issued a call for proposals for its Participation Programme for 2014-17.

Read More...

Register	Maintain Your Registration	Education & Accreditation	Engineering in South Africa
Why Register?	Renew Registration	About Accreditation	What is Engineering?
Registration Categories	Update CPD Record	Policies and Standards	History
Registration Process	CPD Enquiry	Accredited Programmes	Engineering in action
Apply for Registration	Annual Fees	International Recognition	Public Safety
Registration Enquiry	Re-Registration	Evaluation of Qualifications	Case Studies
Registration Documents	Update Details	Education and Accreditation	IDoEW

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• THANK YOU!

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