

# Quality Systems Education within University Science

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# INDUSTRY NEEDS



- Graduate capabilities to minimise training.
- Graduates with a basic understanding of quality systems to:
  - Integrate with existing systems
  - Adapt to industry-specific systems
  - Benefit from additional training
  - Effectively navigate regulation and certification
  - Provide quality system staff continuity
  - Move into, or manage, quality systems

# ACADEMIC UNIVERSITY SCIENCES

## *Life Sciences*

- Medical sciences, pharmacy, microbiology, molecular/cellular biology, chemistry, physics, public health, biochemistry, biotechnology, laboratory science, etc.

## *Natural Resource Sciences*

- Ecology, environmental-science, -health, -chemistry, geology, hydrology, agriculture, botany, biology, etc.

## *Mathematical Sciences*

- Statistics, modelling, theoretical, pure, etc.

## *Engineering.....?*

# CONTEMPORARY QUALITY SYSTEMS EDUCATION

## *Real world*

- Quality training coursework (requirement)
- On-the-job training
- Effective, often industry-specific



## *University*

- Formalised where required (food safety, pharmacy, med. Lab. Sci., etc.)
- Some science quality courses coming on-line, but the exception (Macquarie/NMI/NATA-post grad.)
- *General* quality systems education rare.

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**“IS QUALITY ASSURANCE  
LIKE.....ACCOUNTING?”**

**.....i.e.**

**BORING!!!**



# ALPHABET SOUP



- Blizzard of terms, acronyms and abbreviations
- Many discipline-specific
- Most learned on-the-job
- Familiarisation with key ones as part of general and discipline-specific coursework simplifies putting new ones in context.

# STUDENT DIVERSITY

## COURSEWORK

- Undergraduate
- B.Sc. (3 yr)
- May be > 1 discipline
- General and discipline-specific scientific theory and practice.
- ca. 20% pursue science career
- Optimal point for quality system components?

## RESEARCH

- Honours (1 yr)
- Postgraduate
  - M.Sc. (1-1.5 yr)
  - Ph.D. (3 yr)
- Generally one discipline
- Lab-, or literature-based
- Quality assurance?



# Effective quality systems education at university

- *Experienced* academic staff limited, but critical
- Employ experienced industry guest lecturers (AOQ)
- Raise discipline-specific quality systems awareness

## COURSEWORK

- Undergraduates
  - General quality assurance
  - Discipline-specific module(s)/lectures in 3<sup>rd</sup> year.

## RESEARCH

- Honours and postgrads
  - Laboratory and experimental QA
  - Quality-associated statistics
  - Short courses, workshops.

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