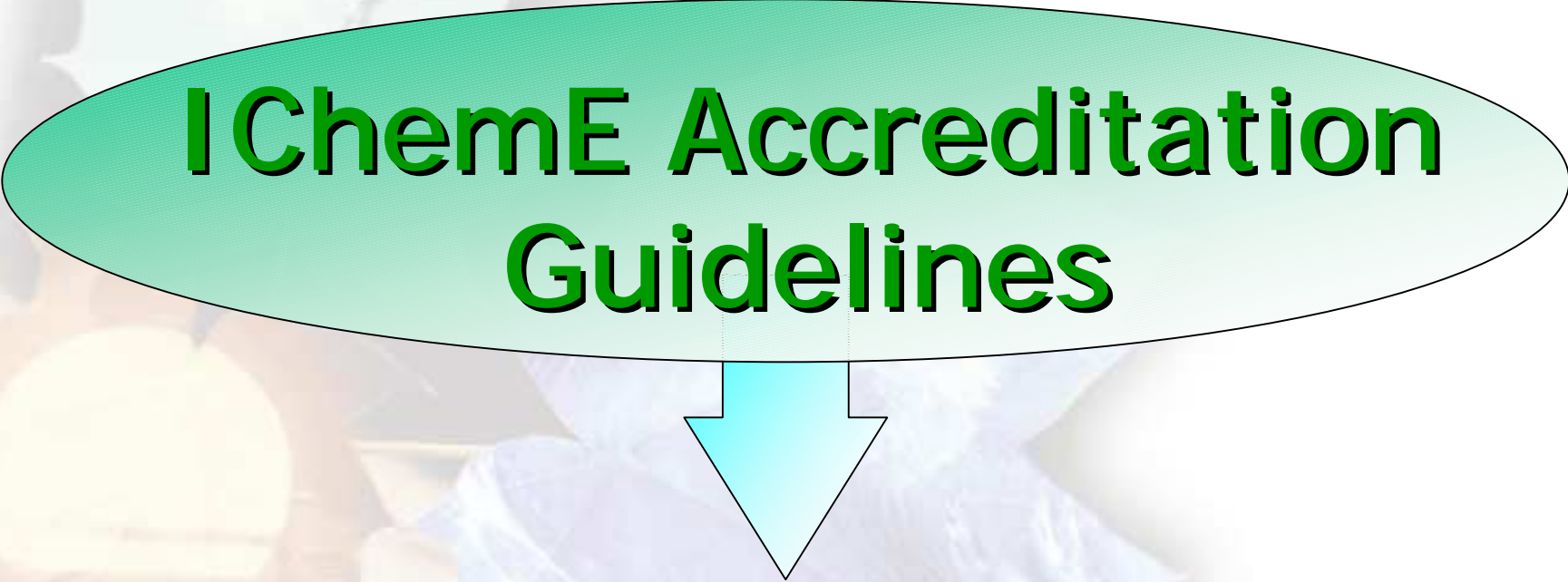


# **Sustainable Development: From Education to Industrial Application**

**Sustainability Competencies for  
Engineers: Good Practice Fayre  
Tuesday 17<sup>th</sup> February 2004**

# IChemE Accreditation Guidelines



Knowledge & Ability to handle  
economic, environment and safety issues

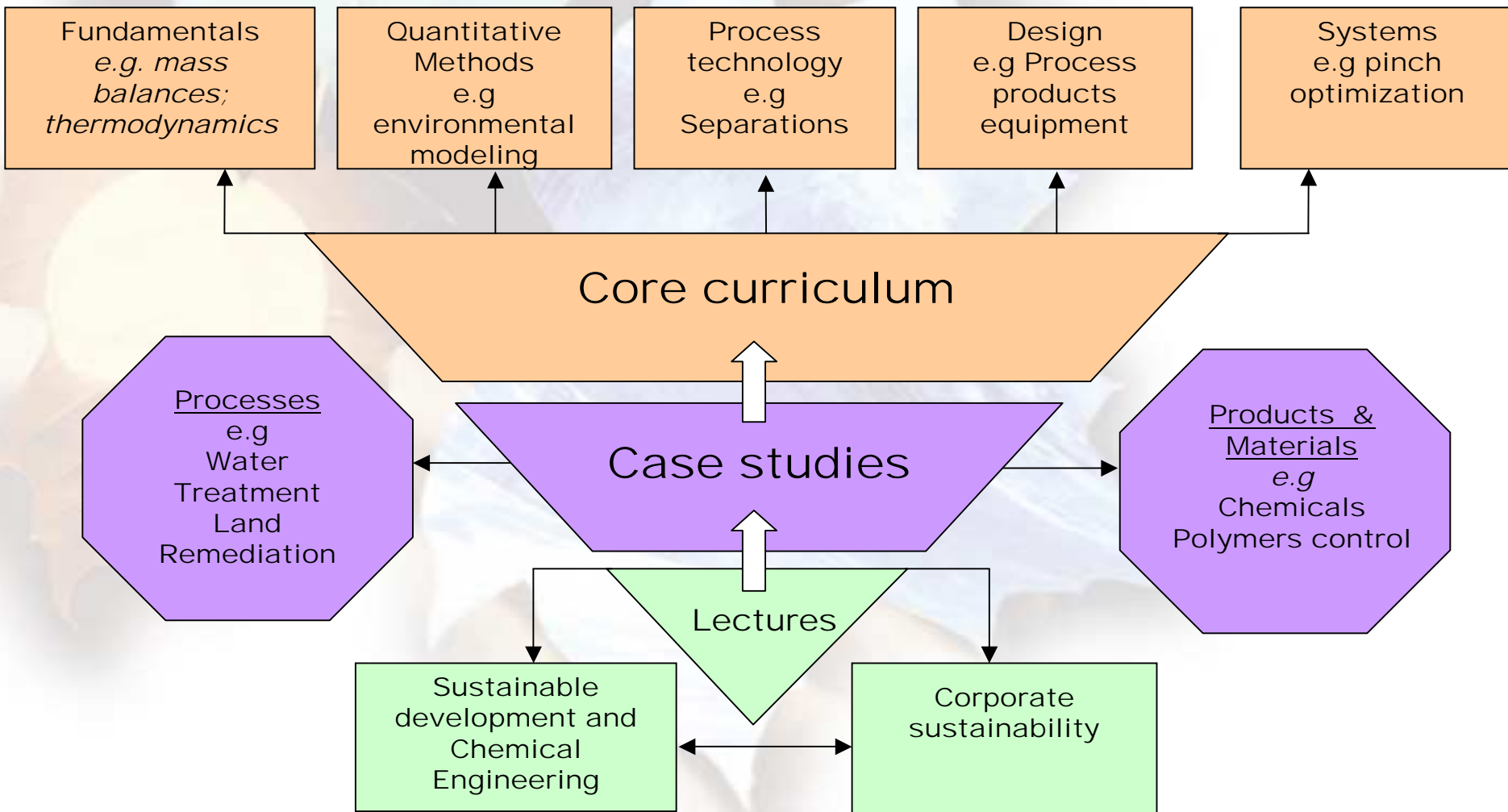
Awareness of typical legal requirements

Appreciation of high ethical & professional  
standards

# Acquiring SD competencies at Undergraduate level: The Surrey Experience

**“Sustainable Development is an integral part of the curriculum rather than an add-on”**

# Integrating Sustainability



# Industrial Practice: The Sustainability Metrics

## IChemE's Sustainability Metrics

### ENVIRONMENTAL

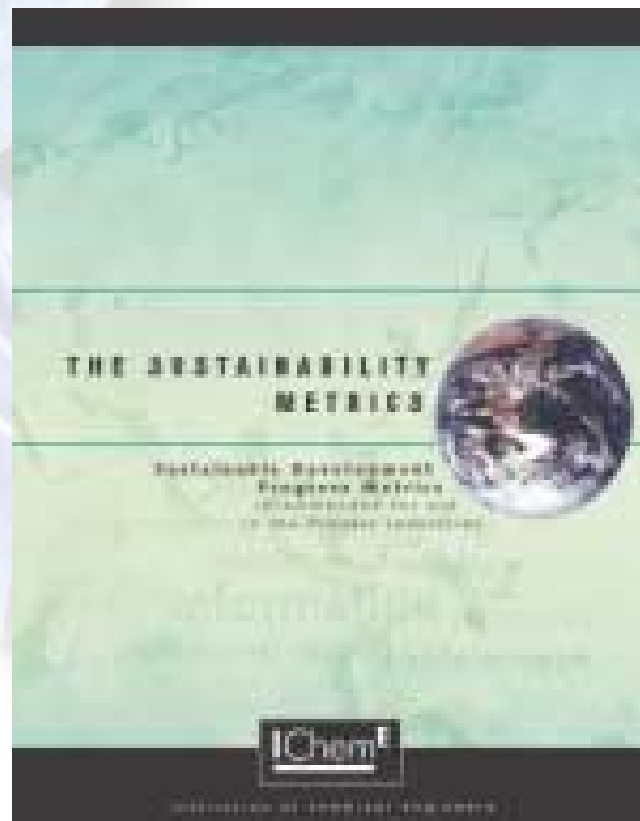
- Energy usage
- Materials
- Water
- Land
- Emissions, effluents & wastes
- Atmospheric impacts

### ECONOMIC

- Profit and tax
- Value added
- Wages
- Investment in training and education
- Direct and indirect jobs

### SOCIAL

- Employment creation
- Employee benefits
- Health and safety at work
- Stakeholder engagement
- Community benefits



# Delivering Sustainability

## Sustainability Subject Group launched...

- Improve academic underpinning of SD
- Promote better understanding of SD
- Promote sustainable engineering practice
- Raise awareness of chemical engineering role in achieving SD

