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Science for Impact in Africa: Bridging the Gap between Academia and Societal Needs in Agri-Food Systems

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"Complex Practice in a Food Science & Technology Curriculum"

Prof Jessy van Wyk (PhD Food Science)
Head of Department, FOOD SCIENCE & TECHNOLOGY

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Iconic Pilot Plant

Virtual Tour: http://www.cput.ac.za/academic/faculties/appliedsciences/research/ats/tour

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Introduction

Training well-skilled practitioners require:

1) A well-structured **curriculum (framework)** focused on **complex practice** & Student-centred learning;
2) Learning outcomes (LOs) based on graduate attributes & alignment of the LOs to **teaching practice** (**mode of delivery, teaching tools**) & **assessment practice** (**constructive alignment** using revised Bloom's taxonomy);
3) **Implementation & continuous improvement of the above via quality assurance mechanisms incl. Quality Circles**

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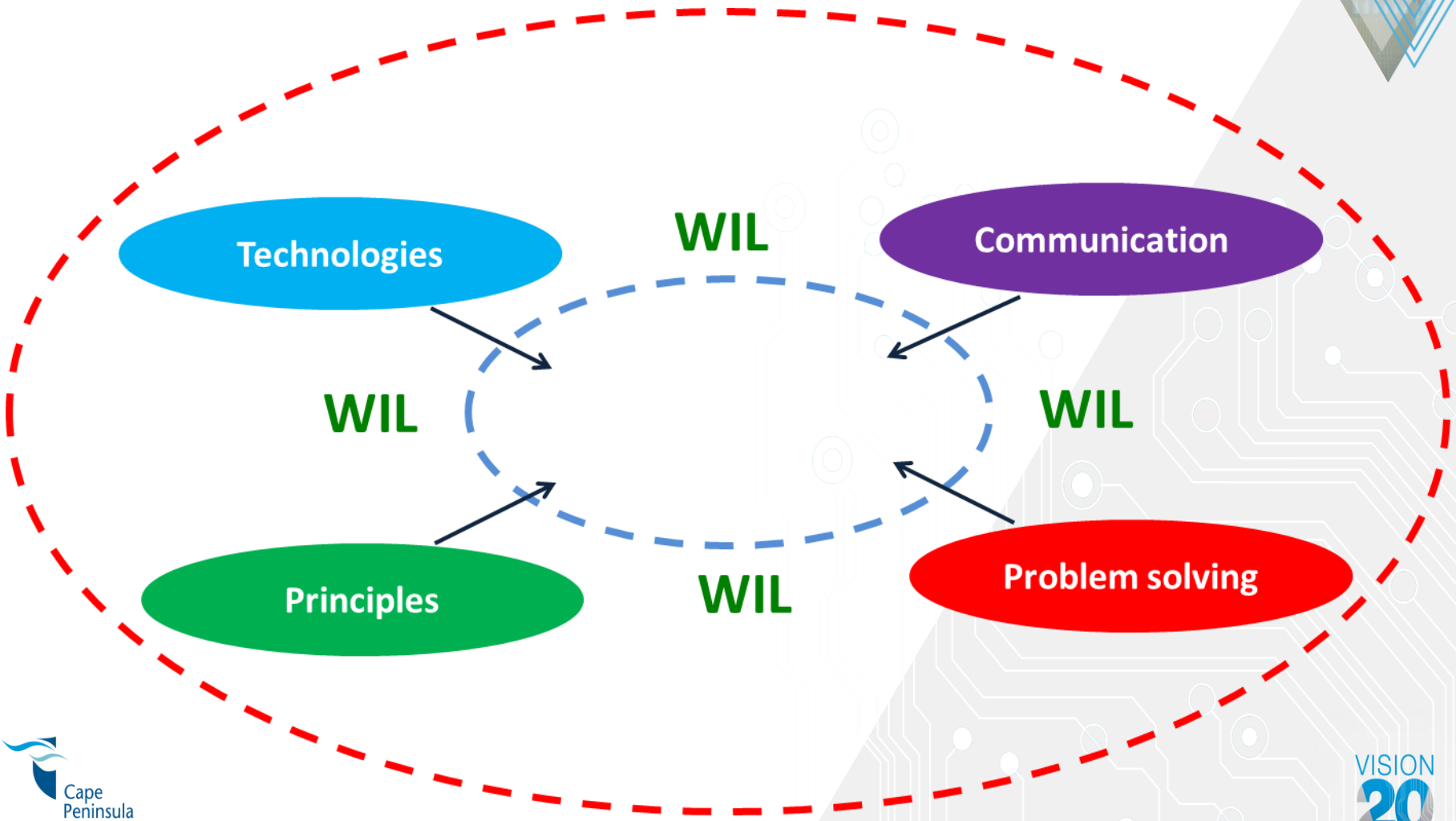
Curriculum Framework



Work-Integrated Learning (WIL) modalities

Work-directed Theoretical Learning (WDTL)	Problem-based Learning (PBL)	Project-based Learning (PjBL)	Workplace-based Learning (WPL)	Simulation-based Learning (SBL)
Career-focused curriculum Authentic examples (Industry & ATS)	Work-simulated problem/task – Group work Example: Production Practical) Case studies (Industry & ATS)	**Integrated trans- & inter-disciplinary project – Teamwork** **Example: New Product Development (NPD) project**	Learning contracts Log books Specific training Mentoring & monitoring Reflection (during monitoring & in class room)	Simulating Production in a Factory Statistical Models Etc.

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Complex Practice

FST graduates to be equipped with ***professional knowledge***, with ***disciplinary knowledge*** underpinning & directing complex ***situated knowledge***

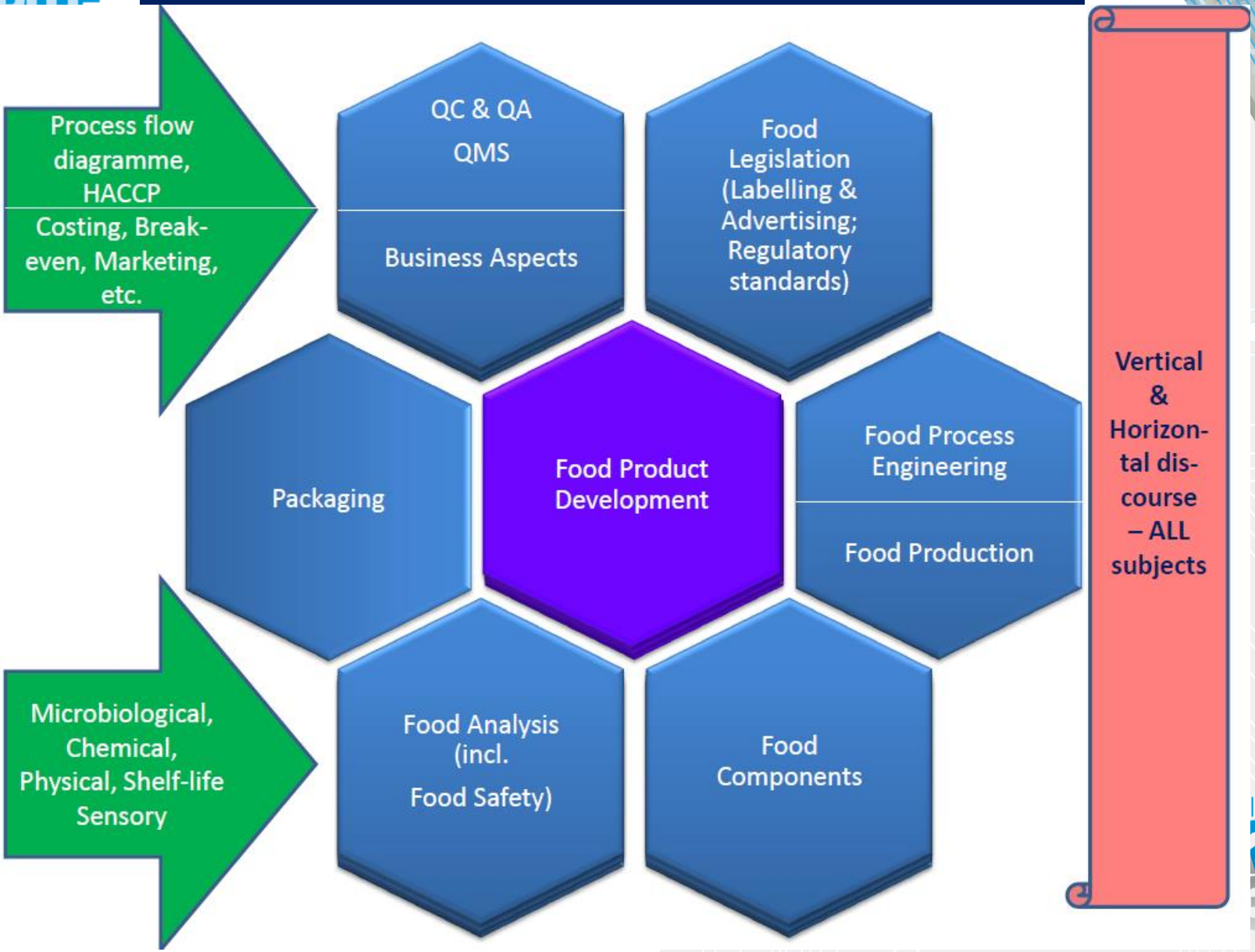
→ competent practitioners entering World of Work.

Achieved by deliberate selection and sequencing of disciplinary and situated knowledge

NPD project go a long way towards achieving this aim

In Food Science & Technology, the sum-total of directed disciplinary knowledge and complex situated knowledge = “Complex Practice” in the DFST

Complex Practice –



Complex Practice - Example

- Team work ("Grouphate!")
- Third year and Fourth year
- Top of scaffold - **Horizontal and vertical discourse/integration** (ALL subjects) - complexity & scope increase
  - Factual, Conceptual, Procedural & Metacognitive Knowledge dimensions
- Hone effective communication, critical thinking, problem-solving, product development & innovation skills
- Reflective practice on steroids

Acknowledgements

- All Staff & Students at the Department of Food Science & Technology (35 Years!)

Thank you!

Questions?

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