TUS
Technological University of the Shannon:
Midlands Midwest
Ollscoil Teicneolaíochta na Sionainne:
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Dámh an Ghnó agus Fáilteachais
Faculty of Science & Health
Department of Pharmaceutical Sciences
and Biotechnology

Report of External Validation Panel

External Validation Panel 6th June 2023

for the

Master of Science in Pharmaceutical and Chemical Analysis
and embedded award
Postgraduate Diploma in Science in Pharmaceutical
and Chemical Analysis

Contents

1.0 INTRODUCTION

This report outlines, in summary form, the proceedings and findings of the external validation visit for the proposed Master of Science in Pharmaceutical & Chemical Analysis, and associated embedded award held on 6th June 2023. The external validation visit was undertaken in accordance with TUS Academic Regulations for the development of taught programmes. An external validation panel makes an independent impartial judgement on a programme proposal.

2.1 GENERAL INFORMATION

2.2 Higher Education Provider

Provider	Technological University of the Shannon: Midlands Midwest
Faculty	Faculty of Science & Health
Department	Pharmaceutical Sciences and Biotechnology
Date of Visit	6th June 2023

2.3 Programme Evaluated

Programme Title	Master of Science in Pharmaceutical and Chemical Analysis
Award Title	Master of Science in Pharmaceutical and Chemical Analysis
Code	AL_SCHEM_9
NFQ Level	Level 9
ECTS Credits	90 ECTS
Award Class	Masters (Taught)
Delivery Mode	Full time
Duration	1 year
Proposed Starting Date	September 2023
Contact	Dr Carmel Kealey

Programme Title	Postgraduate Diploma in Science in Pharmaceutical and Chemical Analysis
Award Title	Postgraduate Diploma in Science in Pharmaceutical and Chemical Analysis (EXIT)
Code	AL_SCHEM_9X
NFQ Level	Level 9
ECTS Credits	60 ECTS
Award Class	Post Graduate Diploma
Delivery Mode	Full time
Duration	1
Proposed Starting Date	September 2023
Contact	Dr Carmel Kealey

2.4 External Validation Panel of Expert Assessors

Name	Affiliation
Dr Billy Bennett	Vice President for Academic Affairs and Registrar Atlantic Technological University (ATU)
Dr Aodhmar Cadogan	Assistant Registrar, Analytical Chemist ATU Sligo Campus
Dr. Bernadette Whelan	Lecturer in Pharmaceutical Science, South East Technological University Waterford
Willie McCormack	Director of Laboratory Services and QP, Jazz Pharmaceuticals
Dr Gabriela Leusink	Senior Lecturer Chemistry, LS&T Leeuwarden, NHL Stenden

Secretary to Panel: Dr. Michael F. Ryan, TUS.

2.5 TUS Staff

Name	Role
Prof. Vincent Cunnane	President
Dr Terry Twomey	Vice President Academic Affairs & Registrar
Dr Don Faller	Dean of Faculty of Science and Health
Dr Carmel Kealey	Head of Department of Pharmaceutical Sciences and Biotechnology
Programme Leaders and Department Teaching Staff	
Dr Brian Murphy,	

3.1 FINDINGS AND RECOMMENDATIONS OF EXTERNAL VALIDATION PANEL

3.2 Main Findings

The External Validation Panel of Assessors recommends approval of the following Programmes and associated embedded award.

Master of Science in Pharmaceutical and Chemical Analysis Level 9 and embedded award, Postgraduate Diploma in Science in Pharmaceutical and Chemical Analysis

3.3 Conditions

No conditions apply.

3.4 Recommendations

I. Review the number of small 5 credit modules and consider consolidation of some modules to more in-depth 10 credit modules (e.g. Bio-analytical techniques and toxicology modules; research methods professional development and industry workshops)
II. Review the overall approach to programme assessment and consider how the assessment load from 5 credit modules could be further reduced. Reconsider at programme and modular level the proposed assessment weighting for an 80% exam and 20% continuous assessment breakdown
III. Ensure that appropriate active verbs are used in both programme and module learning outcomes to reflect a level 9 programme (e.g. Programme Learning Outcomes 1 & 7)
IV. Review module titles with a view to improving their succinctness (e.g. ‘statistics’ and ‘bioanalytical’ module)
V. Remove special regulations as discussed during the programme discussion
VI. Review the indicative content and depth of coverage of themes such as: advanced chromatography techniques; handling pharmaceutical compounds (high potency compounds); data integrity; data informatics; and ICH stability
VII. Consider the opportunities for further cross-University collaboration e.g. for online programme delivery and thesis supervision

VIII. Consider the opportunity presented to develop a part time version and minor awards attached to the programme.

Module specific comments:

- Consider how the proposed programme might enhance graduate capacity in the following 'industry ready' domains: newer technologies, trouble-shooting, analytical development, stability, safety & handling control drugs (consider possibilities in: Industry orientation workshops, Advanced Analytical Techniques Characterisation of Pharmaceutical Materials (stability) Toxicology (safety & handling control drugs) and Statistics related modules)
- That Quality Risk Management Standards, LIMS and Specifications be made more visible in the 'Regulations in Pharmaceutical Laboratory' module (which is a very good module)
- That leadership skills be integrated into the Research Methods and Professional Dev Skills module
- That the learning outcomes in Method Development for Chromatography be fleshed out (to include ICHQ2 method validation and transfer USP124)
- That the module content in 'Pharmaceutical Polymer Analysis' be further enhanced to include additional content on formulation content and stability of polymers
- That module content on Applied Spectroscopic Analysis include phosphorous fluorine and other isotopes used in pharma industry
- That software applications included in the 'Applied Statistics and Data Analysis' module also include Shelflife and ICHQ1E for stability
- That the sequence and management of The Research Project Component be clearly outlined in the documentation (30 credit module) to also include a review of the language associated with the 'Supervisor Evaluation' component (change the focus to assessment of student learning)
- Design an assessment rubric for the dissertation module that reflects the key components to be assessed (Supervisor evaluation – what are they assessing?)
- Clarify in the programme documentation the failed element (p. 95) component of the Research module

3.3 Commendations and Observations

1. The detailed and well-presented documentation for the proposed programme.
2. The clearly outlined rationale and evidence supporting the demand for the programme
3. The engagement by faculty members with the review process
4. The clear engagement with industry regarding relevance of programme themes and module content to enhance potential employability of graduates
5. The ‘Industry Orientated Workshops’ Module and the flexibility to include a range of contemporary issues

Signature of Chairperson

Date: 30/06/2023