Institiúid Teicneolaíochta Luimnigh
Limerick Institute of Technology

Dámh, Eolaíocht Fheidhmeach, Innealtóireacht agus Teicneolaíocht
Faculty, Applied Science, Engineering and Technology

Report of Peer Review Panel

Programmatic Review

of the

Department of Applied Science

19th & 20th October 2017

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1 INTRODUCTION

This report outlines, in summary form, the proceedings of the External Panel visit to LIT for the Programmatic Review of the Department of Applied Science, and the findings and conclusions of the External Panel. The Programmatic Review visit was undertaken in accordance with Section 3 of the LIT document 'Academic Council Regulations and Procedures for Taught Programmes (ACRP): Academic Year 2017/2018'. The ACRP is published on the LIT website. An External Panel makes an impartial judgement on the Critical Self Study and programme changes proposed within the Programmatic Review.

2 GENERAL INFORMATION

2.1 Higher Educat on Provider:

Institute:	Limerick Institute of Technology
Faculty/Schoo :	Applied Science, Engineering and Technology
Department:	Applied Science
Date of Visit:	19th & 20th October, 2017
Venues:	Institute Board Room, Moylish Park Campus HEA Boardroom, Moylish Park Campus

2.2 Programmes Evaluated:

Department of Applied Science:

Higher Certificate in Science in Applied Biology
Bachelor of Sc ence in Applied Biology
Bachelor of Sc ence (Hons) in Bioanalysis and Biotechnology (Add-on)
Bachelor of Sc ence (Hons) in Biotechnology with Biopharmaceuticals (Ab-initio)

Bachelor of Sc ence (Hons) in Environmental and Geographical Sciences
Bachelor of Sc ence in Environmental and Geographical Sciences
Higher Certificate in Science in Environmental and Geographical Sciences
Bachelor of Sc ence in Environmental Management with Agriculture
Higher Certificate in Science in Environmental and Agriculture

Higher Certificate in Science in Applied Chemistry
Bachelor of Sc ence (Hons) in Chemical Instrumentation and Analysis

Bachelor of Sc ence (Hons) in Forensic and Pharmaceutical Analysis
Bachelor of Sc ence in Forensic and Pharmaceutical Analysis
Higher Certificate in Science in Forensic and Pharmaceutical Science

Bachelor of Sc ence (Hons) in Medicinal Product Analysis
Bachelor of Sc ence in Medicinal Product Analysis
Higher Certificate in Science in Medicinal Product Analysis

Bachelor of Sc ence (Hons) in Environmental and Analytical Science
Bachelor of Sc ence in Environmental and Analytical Science
Higher Certificate in Science in Environmental and Analytical Science

2.3 Members of the External Programmatic Review Panel:

Mr. Damien Courtney, Chairperson,
Fellow Emeritus, Cork Institute of Technology (Chairperson)
Dr. Susan McDonnell,
University College Dublin;
Dr. Tom Russell,
Seros:p, Limerick;
Prof. Hugh McGlynn,
Cork Institute of Technology;
Mr. Aaron McKeown,
Marine Institute, Oranmore, Galway;
Dr. Ciaran McLaughlin,
Letterkenny Institute of Technology;
Mr. Paul O'Sullivan,
Reagecon, Limerick;
Dr. Catherine Dalton,
Mary Immaculate College, Limerick;
Dr. Ollie Moore,
Cultivate.ie, Dublin;
Ms. Hadil Alaydi,
Postgraduate Student and Graduate, LIT.

2.4 Institute Staff:

Prof. Vincent Cunnane, Institute President *(unavoidably absent)*
Mr. Terry Twomey, Vice President Academic Affairs and Registrar
Dr. Liam Brown, Vice President for Research, Enterprise and Development
Mr. Paschal Meehan, Head of Faculty of Applied Science, Engineering and Technology
Ms. Maria Kyne, Head of Faculty of Applied Science, Engineering and Technology
Ms. Michelle McKeon-Bennett, Head of Department of Applied Science

Department of Applied Science Programme Team:

Dr.Tanya Beletskaya	Ms. Aisling Lynch	Ms. Marie O'Callaghan
Dr. Brenda Cashin	Mr. Billy Madden	Dr. Micheal O'Keeffe
Ms. Catherine Dalton	Mr. Michael Maunsell	Dr. John O'Kelly
Dr. Peter Downey	Mr. Martin McCormack	Dr. Elaine Raggett
Ms. Brigid Doyle	Ms. Elisha McGrane	Ms. Pauline Ryan
Dr. William Fitzgerald	Dr. Siobhán Moane	Dr. Nancy Shanley
Dr. Michael Geary	Dr. Michael Monaghan	Dr. Josephine Treacy
Mr. Clifford Guest	Dr. Liz Moore	Dr. Leah Wallace
Mr. Martin Hayes	Dr. Mary Morrin	Dr. Daniel Walsh
Dr. Tracey Larkin	Dr. Ann Murphy	Ms. Marie Walsh

2.5 Selected Stakeholders:

Employers/Industry and Alumni Representatives:

Dr. Maura McNulty,
Executive Scientist, Clare County Council;
Mr. Fintan Collins
ABP Foods, Tipperary;

Ms. Martina Cripps,
ECOS Environmental Consultants, Limerick;
Mr. Mark Croke,
Thermo Scientific Ireland & UK;
Dr. Tim Yeomans,
Shannon ABC, LIT.

2.6 Current Students:

Ms. Nesreen Ramdan	B.Sc. in Pharmaceutical and Forensic Analysis, Year 3
Mr. Paul McCaul	B.Sc. (Hons) in Chemical Instrumentation and Analysis, Year 4
Ms. Niamh Timoney	B.Sc. in Environmental and Analytical Science, Year 4
Ms. Rebecca Mulcahy	B.Sc. (Hons) in Drug and Medicinal Product Analysis, Year 3
Mr. Andrew Doherty	B.Sc. (Hons) Bio Analysis and Bio Technology, Year 4
Mr. Sean Grace	B.Sc. in Environmental and Natural Resource Management, (Thurles), Year 4
Ms. Sarah O Farrell	B.Sc. in Pharmaceutical and Forensic Analysis, Year 4
Ms. Serena Sui	B.Sc. in Pharmaceutical and Forensic Analysis, Year 4
Ms. Kaya MacDonald	B.Sc. in Pharmaceutical and Forensic Analysis, Year 4
Ms. Jean McCarthy	B.Sc. in Applied Biology, Year 3
Ms. Sarah McMahon	PhD Candidate
Mr. Jack Hassett	M.Sc. Candidate

2.7 Documentation:

2.7.1 Critical Self-Study, Faculty of Applied Science, Engineering and Technology
2.7.2 Critical Self-Study, Department of Applied Science, Programmatic Review 2017 document
2.7.3 Comparative Programme Titles, Department of Applied Science

2.7.4 Higher Certificate in Science in Applied Biology
2.7.5 Bachelor of Science in Applied Biology
2.7.6 Bachelor of Science (Hons) in Bioanalysis and Biotechnology (Add-on)
2.7.7 Bachelor of Science (Hons) in Biotechnology with Biopharmaceuticals (Ab-initio)

2.7.8 Bachelor of Science (Hons) in Environmental and Geographical Sciences
2.7.9 Bachelor of Science in Environmental and Geographical Sciences
2.7.10 Higher Certificate in Science in Environmental and Geographical Sciences

2.7.11 Bachelor of Science in Environmental Management with Agriculture
2.7.12 Higher Certificate in Science in Environmental and Agriculture

2.7.13 Higher Certificate in Science in Applied Chemistry
2.7.14 Bachelor of Science (Hons) in Chemical Instrumentation and Analysis
2.7.15 Bachelor of Science (Hons) in Forensic and Pharmaceutical Analysis
2.7.16 Bachelor of Science in Forensic and Pharmaceutical Analysis
2.7.17 Higher Certificate in Science in Forensic and Pharmaceutical Science

2.7.18 Bachelor of Science (Hons) in Medicinal Product Analysis
2.7.19 Bachelor of Science in Medicinal Product Analysis
2.7.20 Higher Certificate in Science in Medicinal Product Analysis

2.7.21 Bachelor of Science (Hons) in Environmental and Analytical Science
2.7.22 Bachelor of Science in Environmental and Analytical Science
2.7.23 Higher Certificate in Science in Environmental and Analytical Science

2.7.24 Amendments to B.Sc. Applied Biology Documentation – 19/10/2017

9 FINDINGS AND RECOMMENDATIONS OF EXTERNAL PROGRAMMATIC REVIEW PANEL

The External Validation Panel of Assessors recommends the on-going approval and re-validation for a further five years of the submitted programmes and associated amendments, in the Department of Applied Science, Faculty of Applied Science, Engineering and Technology (ASET), subject to the following conditions and recommendations. The External Validation Panel of Assessors also recommends the approval of the B.Sc. (Hons) in Biotechnology with Biopharmaceuticals subject to the listed conditions and recommendations.

9.1 Conditions

9.1.1 The external validation Panel require that the special regulation of 40 % in the Practical Component and 35 % in the Final Exam must apply as a minimum module standard.

9.1.2 Put a dedicated departmental system in place to support work placement in excess of 5 credits, with a view to further developing a centralised Institution wide system, particularly with respect to sourcing placement and the administrative requirements around it. It is important that it is the Faculty that will manage the learning experience and its assessment.

9.1.3 A deficit of resources is identified particularly with respect to mammalian cell culture, bioreactors and bioprocessing and this needs to be addressed.

9.2 Recommendations

9.2.1 Typographical errors and inconsistencies in assessment breakdown need to be corrected throughout the documentation across the programmes.

9.2.2 Funding is necessary annually for the ongoing development of resources particularly with respect to upgrades, repairs, service, renewal and replacement of specialised equipment. This is regarded as having extremely high priority.

9.2.3 Establish panels that contain industry representatives for the student presentations of final year project.

9.2.4 Put in place an institutional and departmental level review process to look at the effects of semesterisation on KPI such as retention and progression.

9.2.5 Where a module consists of 100 % continuous assessment the sub component breakdown of that assessment should be specified in the module definition form.

9.2.6 There should be mapping of the commonalities between programmes in the cognate areas in a visual schematic.

9.2.7 There should be equalisation of credits awarded for the final year project across the courses in the department. All courses should consider a 5 credit preparatory module in the first term where it does not exist to include such elements as project management, literature review, presentation and oral communication skills and statistics and data analytics.

9.2.8 Build a greater contact and network with Alumni at departmental level to leverage mutual benefit.

9.2.9 Consider putting in place a process for Peer Tutoring.

9.2.10 Review, across all programmes, 10 credit modules that were split to ensure that the Learning Outcomes have been differentiated.

9.2.11 Consider the potential to facilitate electives particularly in the Stage 4 of the Honours degree programmes across the department.

9.2.12 Insert hours in the course schedule with respect to work placement modules that are adequate to reflect the 15 credit weighting.

9.2.13 The Thurles campus should explore the option of extending the work placement.

9.2.14 The equivalency between an industry placement and a project for students that are not placed needs to further considered with a view to equalisation of the student learning experience.

9.2.15 Consider putting a fitness to practice/fitness to study protocol in place as an embedded element in the placement syllabus.

9.2.16 Consider further the title of the proposed Ab-initio B.Sc. Biotechnology with Biopharmaceuticals that better reflects the programme content and target audience. Consider the word 'with' in particular.

9.2.17 The importance of the requirement to have a GPA of 50 % to progress to 4th year of the Add-On programmes in the ladder system was identified. The Panel recommends that the trends in final award levels be monitored with a view to reviewing the progression criteria.

9.2.18 Differentiate between the Level 6 and Level 7 programme learning outcomes in the B.Sc. in Environmental Management with Agriculture.

9.2.19 Review and upgrade the Stage 4 module learning outcomes for the B.Sc. in Environmental and Geographical Sciences to reflect Blooms Taxonomy.

9.2.20 Review and update as necessary all reading lists as necessary with respect to all programmes.

9.2.21 Adopt a more consistent approach to formatting the modules to address inconsistencies in numbers of learning outcome, syllabus content, and reading lists.

9.2.22 The importance and relevance of demography should be reflected in the B.Sc. (Honours) in Environmental and Geographical Sciences programme and indicative syllabi of identified modules.

9.2.23 Consider the possibility of asynchronous delivery across similar course in different campuses.

9.2.24 Add the Project Elective to the programme schedule for Stage 3 of the BSc. (Honours) in Drug and Medicinal Product Analysis.

9.3 Commendations and Observations

Commendations

9.3.1 The Panel were impressed with completion rates and employment statistics with graduates employed across a broad range of sectors.

9.3.2 The Panel commended the core skills and practical abilities that are developed throughout the programmes.

9.3.3 The Panel noted that the documentation was excellent and very informative.

9.3.4 The Panel were impressed with the courses in general that they are very up to date with a range of topics covered. They are very well constructed programmes.

9.3.5 The Panel commended the engagement of the staff which was noted in the programmatic review event and in the discussions with students in the context of staff/student interaction and engagement.

Observations

9.3.6 Consider the potential for more information and variety in Stage 4 module titles to reflect broader content for the transcript titles which would be useful for employers

9.3.7 Consider steps to optimise synergies and the student experience between the Moylish and Thurles campuses.

9.3.8 The Panel felt it would have been beneficial to meet the technical and administrative staff.

9.3.9 The Panel would have benefited from more time given the volume of programmes reviewed.

Signature of Chairperson and Date

15th December 2017