Maynooth University
National University of Ireland Maynooth

Ollscoil Mhá Nuad

Maynooth University

QUALITY IMPROVEMENT AND ASSURANCE

PEER REVIEW GROUP REPORT

MATHEMATICS AND STATISTICS DEPARTMENT

ACADEMIC YEAR 2018/19

20th May 2019

Contents

1. Introduction

A review of the Department of Mathematics and Statistics took place on February 20th and 21st 2019.

2. Peer Review Group Members

Name	Affiliation	Role
Professor Cathal Walsh	University of Limerick	External Reviewer
Dr Rachel Quinlan	NUI Galway	External Reviewer
Professor Michael Dunne	Maynooth University	Internal Reviewer
Dr Tuvana Pastine	Maynooth University	Internal Reviewer

3. Timetable of the Site Visit

The site visit took place during the 20th and 21st Feb 2019. Details of the visit and the meetings that were held are outlined in the attached appendix 1. Modifications to the schedule were made in order to meet additional students from the new programme in Data Science.

The timetable allowed for group and individual meetings, as well as a visit to the departmental facilities and the Mathematics Support Centre in the main library building.

4. Peer Review Methodology

4.1 Site Visit

The peer review group had an opportunity to informally meet in person on the evening of 19th Feb. The formal meeting of the group was on the morning of the 20th Feb and the review proceeded as detailed in the timetable.

4.2 Preparation of the Peer Review Group Report

The initial findings of the review group were presented to the department and members of the university administration at the end of the site visit on 21st Feb 2019. The initial draft was prepared by the review group and submitted to the Quality Improvement and Assurance Office in May 2019.

5. Overall Assessment

5.1 Summary Assessment of the Department

The Department of Mathematics and Statistics at Maynooth is similar in size to other such departments in the country with 19 permanent lecturing staff and 3 support staff. It is noted that some members of staff are partly or wholly seconded to the Hamilton Institute. The 2018-19 student FTE for the department is 425, consisting of 379 undergraduate, 9 HDip, 16 taught Masters, 1 research Masters, 11 PhD, and 9 other students. The student-to-staff ratio (SSR), measured by FTE, is high at 25. The core department's teaching staff also includes 15 tutors and demonstrators hired on an occasional basis (for 2018-19).

There are quite a number of strengths and positive aspects to bring out from the review. The department has a very good collegiate atmosphere, with support for each other as academic staff and strong teamwork between the administrative staff, academics and tutorial staff. The students feel a close affinity to the department and feel that they can approach administrative and academic staff with queries as necessary. A strong sense of identity and community was evident in all our interactions. The contribution of the department more broadly to society was noted through its alignment with the Mathematics Support Centre, the Olympiad training and other initiatives in public and community engagement. There is a vibrant, productive and ambitious research culture, with the majority of faculty maintaining active research profiles, and with a sustained pattern of high quality publications in the international research literature. Details of research outputs were provided in the self-assessment report.

The department has opportunities for growth in the Data Science and Analytics space, together with partnerships with the Hamilton Institute and successful funded programmes (such as the SFI funded Centre for Research Training).

The key challenges that are barriers to the development of the department are identified as the high student-staff ratio and the age of the computing facilities.

Threats include the difficulty of expanding PhD student numbers in the current funding environment (especially in the theoretically-focussed disciplines), limitations on opportunities for existing staff to progress (e.g. through promotion or sabbatical), the physical constraints of space and infrastructure, and finally the competition for good students in the expanding discipline of Data Science.

5.2 Self-Assessment Report

The department provided a self-assessment report, profiling the department, providing context for the review and highlighting accomplishments and challenges in the areas of teaching and research. The report allows for reflection on existing structures within the department, as well as a SWOT analysis for the Department.

The context of the review, including a review of the previous quality review and actions arising therefrom was provided. This was placed within the framework of the overall University Strategic Plan, and the changing economic and scientific environment in the intervening years was also noted.

The review group is grateful to the department for the excellent quality of the self-assessment report as a comprehensive reference for key information and context.

6. Findings of the Peer Review Group: Commendations and Recommendations

6.1 Overview

The review group were impressed with the department and noted the strong collegiality amongst members of the department. This extended to academic and administrative staff as well as to students.

The review group noted a number of key issues as detailed below.

6.2 Commendations

Overall, the review group was extremely impressed by the quality of the work being carried out by the department, in its central mission in education and research, and in its engagement within the university, in the higher education sector and more widely in the community. We note the following particular points of commendation.

- The Mathematics Support Centre is an outstanding resource for students and an excellent example of good practice in undergraduate education in the mathematical sciences. We commend the staff and students in the department for establishing and developing this service and for using it to great effect. We also commend the university management for investing in it and for locating it visibly and prominently.
- A passionate commitment to quality in teaching and learning, and to students was evident in all of our interactions with academic and support staff as well as tutors. This was clear also from our discussions with students, who were warmly appreciative of the positive learning experience in the department.
- We commend the department on its high quality research activities across a broad range of subject areas, which have been developed and steadily expanded in an atmosphere of sustained challenge.
- We commend the department on its timely and insightful developments of new programmes at undergraduate and postgraduate level, particularly (at present) in the field of Statistics and Data Science.
- We commend the support staff of the department on their excellent and versatile work on a huge range of administrative, technical, academic and strategic matters.

The integration of the efforts of academic and support staff across the full breadth of activities is an admirable feature of the department.

- We commend the department on its collegial and warm environment and supportive and cooperative attitude towards students, visitors and colleagues. We noted that the department is held in high regard in the university and that colleagues in other units enjoy and appreciate their constructive interactions with Mathematics and Statistics.
- We recognize and commend the dedicated, sustained and responsible leadership of the Head of Department.

6.3 Recommendations for Improvement

The tables below categorise recommendations as being institutional/strategic or department level, in line with the guidance notes accompanying this template.

Institutional/Strategic Recommendations

Number	Recommendation	Additional PRG Comments
S.1	Additional staffing in statistics will be required to meet the needs of expanding programmes in Data Science.	The department is engaged in an expansion to their Data Science programme which will require additional staffing to successfully deliver on the plans.
S.2	Consultation with departments regarding audio-visual requirements for teaching spaces is vital.	The requirements for mathematics teaching are often different to those of other faculties. For example, the PRG noted that the provision of good quality blackboards with good lighting was a modest requirement and was something both staff and students identified as a need. Some rooms in particular do not allow for the use of both a projector and a blackboard at the same time. Minor modifications to teaching spaces would be needed to accommodate these.
S.3	Opportunities for promotion of staff are overdue.	The PRG noted that the schedule for promotions had been delayed in recent years. As a consequence, some staff are losing out on opportunities which colleagues in other universities are benefitting from. For example, only certain grades of staff can apply for national and international training opportunities and some staff cannot apply for these because of the lack of a promotions process. This has an impact on the visibility of the discipline and the university nationally and internationally.

S.4	Additional space requirements for staff, expanding student numbers	In common with the first recommendation above, it is noted that additional teaching and laboratory space will be required for the expanding programmes.
S.5	Clarification on the institutional strategy for the maintenance and expansion of departmental computing facilities	The computing facilities within the department are due for replacement and upgrade. Previously, funding had been available through central funds for investment in this area, but this has changed in recent years. The institution should clarify how such investment is managed in the future, noting that computing facilities are a particular need of this department.
S.6	Website and communications could be improved	The centralisation of website and communications (moving away from local webpages) means that the department finds itself unable to participate as it once had in communicating with external stakeholders.
S.7	Address systems risks	The computer systems used for the collation of student results require a lot of manual effort on the part of staff to enter marks. When transcribing results between systems there are always risks of errors as well as a waste of resource in carrying out the process. These processes should be reviewed to ensure maximum efficiency and to minimise risks.

Recommendations to the Department

Number	Recommendation	Additional PRG Comments
U.1	Consider broader sharing of leadership responsibilities	During the review process the PRG noted that a large amount of work in the day to day running of the department either fell directly on or required the direct input of the head of department and departmental administrator. For example, the majority of the work of preparing the initial draft of the self-evaluation report fell to the head of department, despite there being a group established for this purpose.
U.2	Formally institute a role of 'Head of Statistics'	The department has expanded in recent years, especially in the statistics discipline. Large increases in student numbers studying statistics also means there will be increased demand for planning and coordination in coming years. The formal establishment of the role of 'Head of Statistics' would allow a designated individual to be directly involved with the HoD in the day to day running of the department.
U.3	Engage explicitly with the Equality Diversity and Athena Swan	The PRG noted that whereas there was engagement with the institutional strategy in connection to Athena Swan, there was no explicit department involvement with this initiative. More generally there are important issues where an awareness of family commitments should be considered in day to day matters. For example, there should be an awareness that the timing of meetings or seminars and indeed teaching may impact on the ability of staff members to fully participate in activities. It was

		noted that informal discussions have taken place around for example the timing of seminars.
U.4	Consider the format of examinations and tutorials	Both students and staff noted that short examinations (90 minutes) do not give sufficient time to exam some courses in enough depth as they would like. To this end, it was suggested that consideration be given to extending the duration or considering alternative formats of examination. Likewise, some tutorials consist mainly of providing model solutions to work which had already been corrected. It was felt by tutorial assistants and students alike that alternative formats of tutorial (e.g. questions on material for future assignments or students working through solutions) may be beneficial.
U.5	Consider the curriculum of jointly shared programmes	It was noted that in a minor number of cases there seemed to be duplication of content, or repetition of topics with other departments. This could be easily resolved by coordinating on how these topics are delivered or emphasised by each department.
U.6	Develop a sabbatical culture	The sabbatical system presents academic staff with an opportunity for growth. This then ultimately strengthens and provides a broader research perspective to the department. Few have taken up the opportunity, which could be due to a lack of flexibility in the implementation of the existing schemes, or barriers for some to travel (e.g. due to family constraints). By considering alternative models of sabbatical it may be possible for more to take advantage of this.

APPENDIX 1

MATHEMATICS & STATISTICS DEPARTMENT: PEER REVIEW GROUP SITE VISIT TIMETABLE

Tuesday 19th February 2019

Time	Description	Venue
19:00	Convening of the Peer Review Group. Briefing by: Aidan Mulkeen, Vice President Academic and Registrar and Professor Ronan Farrell, Faculty Dean PRG agrees a Chair, and discuss the visit. Identification of any aspects requiring clarification or additional information. Dinner for members of the Peer Review Group, Vice President Academic and Registrar and Faculty Dean	Carton House Aidan Mulkeen Ronan Farrell Rachel Quinlan Cathal Walsh Michael Dunne Tuvana Pastine

Wednesday 20th February 2019		
Time	**Description**	**Venue**
9.00-9.30	Convening of Peer Review Group	Council Room
9.30-10.15	Professor Stephen Buckley, Head of Department	Council Room
10.15-11.00	Group meeting with all Department staff (Head of Department recused)	Council Room
11.00-11.30	Refreshments	Council Room
11:30 -12.00	**Staff Group 1** Dr Rafael de Andrade Moral/Lecturer Ms Janice Love/Senior Technical Officer Ms Gráinne O'Rourke/Administrative Officer	Council Room
12:00-12.30	**Staff Group 2** Dr Katarina Domijan/Lecturer Dr Ollie Mason/ Senior Lecturer Mr Tony Waldron/Technical Officer	Council Room
12.30-13.00	**Staff Group 3** Dr Detta Dickinson/Senior Lecturer Dr Catherine Hurley/Senior Lecturer Dr Ciarán Mac an Bhaird/Lecturer Dr John Murray/Senior Lecturer	Council Room
13.00 -14:00	Working Lunch	Pugin Hall
14:00 -14:30 14.30.-15.00 15.00-15.30	**Meet with Students:** Undergraduate Students (10) PhD students (2) Postgraduate Students (2)	Council Room
15.30-16.00	**Heads of Academic Departments** Professor Paul Moynagh, HOD Biology Dr Fabrice Rousseau, HOD Economics, Finance and Accounting	Council Room
16.00-16:30	Break	Council Room
16.30-17.00	**Department Tutors** Mr Conor Brennan Mr Ciaran O'Rourke	Council Room

17.00.-17.30 17.15-17.30	**External Stakeholder/Phonecalls** Ms Emma Quinn (SIG)/Employer of Graduates	Council Room
17:30-18.00	PRG meeting – identification of any areas for clarification and finalisation of tasks for following day	Council Room
19.00	PRG private working dinner	Carton House Hotel

Thursday 21st February 2019		
Time	**Description**	**Venue**
9.00-9.30	Convening of Peer Review Group	Council Room
9.30-10.00	Professor Ronan Farrell, Faculty Dean	Council Room
10.00-10.30	**Heads of Academic Departments** Dr Jon-Ivar Skullerud, HOD Theoretical Physics Dr Joseph Timoney, HOD Computer Science	Council Room
10.30-11.00	Tour of facilities of Department, escorted by HOD	Department
11.00-11.30	Refreshments	Council Room
11.30-12.00	**Staff Group 4** Dr Niamh Cahill/Lecturer Dr David Malone/Senior Lecturer Dr Anthony Small/Senior Lecturer Dr Mark Walsh/Lecturer	Council Room
12.00-12.30	**Staff Group 5** Dr Stefan Bechtluft-Sachs/Lecturer Dr Caroline Brophy/Lecturer Dr Fiacre Ó Cairbre/Senior Lecturer Dr Ann O'Shea/Senior Lecturer Professor David Wraith	Council Room
12.30-13.00	**Staff Group 6/2nd Level Drop-in Tutors** Mr Stephen Begley Mr Maciej Majnusz Ms Christina Wall	Council Room
13.00-13.15	MSc Student in Data Science	Council Room
13:15-14:00	Working Lunch	Pugin Hall
14:00-16:30	Preparation of Exit Presentation	Council Room
16:30-17:00	Exit presentation to all departmental staff, made by the Chair of the PRG, summarising the principal commendations and recommendations of the Peer Review Group	Council Room
17:00	Refreshments and Exit of the PRG	Council Room