Ollscoil
Teicneolaíochta
an Atlantaigh

Atlantic
Technological
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Report of External Peer Review Group for the Programmatic Review of:

Programme	Code	Level	ECTS	Duration	Award Type	Embedded Awards
Bachelor of Science (Honours) in Applied Freshwater and Marine Biology	GA_SAFMG_H08	8	240	4	Major	Embedded Awards: Bachelor of Science in Applied Freshwater and Marine Biology and Higher Certificate in Science in Applied Freshwater and Marine Biology
Bachelor of Science in Applied Freshwater and Marine Biology	GA_SAFMG_B07	7	180	3	Major	Embedded Award: Higher Certificate in Science in Applied Freshwater and Marine Biology
Higher Certificate in Science Applied Freshwater and Marine Biology (Exit)	GA_SAFMG_C06	6	120	2	Exit	Parent Award: Bachelor of Science in Applied Freshwater and Marine Biology
Master of Science in Conservation Behaviour	GA_SCONG_V09	9	90	1	Major	N/A
Master of Science in Applied Marine Conservation	GA_SAMCG_V09	9	90	1	Major	N/A
Master of Science in Applied Marine Research	GA_SAMRG_V09	9	90	2	Major	N/A

Date of Panel:

May 16th, 2022

External Peer Review Group:

Panel	
Chairperson	Professor Martin Solan, Professor in Marine Ecology, University of Southampton.
Institute of Technology/University Representative	Dr Alba Ardura Dept of Functional Biology, University of Oviedo, Spain
Institute of Technology/University Representative	Dr. Jean O'Dwyer, Lecturer in Environmental Science, UCC
Industry Representative	Dr Caroline Roche, Offshore Environment & Consents Manager, Energia Group Ltd
Graduate Representative	Mr. Rory McAvinney, National Aquarium of Ireland
Secretary	Carmel Brennan, Assistant Registrar (Quality) (Secretary)

1   Introduction to Programmatic Review

Programmatic review involves a periodic, formal, systematic, comprehensive and reflective review and evaluation of each programme and award offered by the Institute for purposes of programme development, quality enhancement and revalidation. It is an important means of ensuring and assuring, *inter alia*:
- that required academic standards are being attained;
- that programmes and awards remain relevant and viable;
- that student needs, including academic and labour-market needs, are addressed;
- that the quality of programmes and awards is enhanced and improved;
- public confidence in the quality of GMIT's programmes and awards.

GMIT last conducted Programmatic Review in 2014 and was due to undertake it again in 2019/20. The process was delayed until this year due to the COVID-19 pandemic.

The objective of a programmatic review is to review the development of the programme over the previous five to seven years, with particular emphasis on the achievement and improvement of educational quality. The focus is principally on the evaluation of quality and the flexibility of the programmes' responses to changing needs in light of the validation criteria and relevant awards standards. In particular, a programmatic review seeks to confirm that the promise evidenced at the original validation (or since the last programmatic review) in terms of academic quality, relevance and viability has been realised, and that the programme is adapting appropriately to evolving circumstances.

The specific objectives of a programmatic review are, *inter alia,* to:
- analyse and evaluate the effectiveness and efficiency of the programme, including details of student numbers, retention rates and success rates;
- review the development of the programme in the context of the requirements of employers, industry, professional bodies, the Irish economy and international developments;
- evaluate the response of the programme to regional and societal requirements and to educational developments;
- evaluate the feedback mechanisms for students and the processes for acting on this feedback;

- review the feedback from students relating to the student experience of the programme
- evaluate stakeholder engagement including links and collaboration with industry, business and the wider community;
- review feedback from employers and graduates;
- evaluate the physical facilities and resources provided for the provision of the programme;
- review any research activities in the field of learning in the disciplinary areas and their impact on teaching and learning;
- consider likely future developments in the disciplinary areas;
- make proposals in relation to updating programmes and modules, and to discontinuing programmes or parts of programmes.

Academic Council identified three themes to be specifically addressed during the 2021/22 Programmatic Review namely:
- Assessment – ensure the assessment strategy and methodology are appropriate and aligned with learning outcomes and that students are not over-assessed.
- Employability – ensure that students develop career skills necessary to prepare them for employment. Embed professional practice (e.g., work placement, work-based projects in the programme, ensuring that there is an appropriate plan for their management)
- Sustainability – review modules and learning outcomes to ensure that the sustainability agenda is addressed, debated, and applied within student learning and assessment, as appropriate.

2   Methodology

The programmatic review process involves a self-evaluation by each programme board followed by an external peer review. The Programme board engaged in a process of the collection and review of data related to the programme and feedback from stakeholders including students, graduates and industry. The overall programme and each individual module have been reviewed and recommendation(s) for updates made as required.

The External Peer Review Group (EPRG) received a copy of the Self Evaluation Review documentation and the programme documentation including any proposed changes. The EPRG then met the Programme Board (Appendix A) to discuss the programme and the documentation provided, as well as meeting a representative sample of students (Appendix B). The schedule for the review visit is contained in Appendix C.

3   Background to Programme(s) Being Reviewed

Bachelor of Science (Honours) in Applied Freshwater and Marine Biology
Bachelor of Science in Applied Freshwater and Marine Biology
Higher Certificate in Science Applied Freshwater and Marine Biology (Exit)

The programmes date from 1973 and have their origins in the NCEA Higher Certificates in Biology and Aquaculture and in the Diploma in Applied Aquatic Sciences. Students who complete this programme will have an interdisciplinary education covering a broad range of life-science and technical areas, have excellent laboratory skills, have completed a work placement, and have a sufficient knowledge and understanding of freshwater biology, marine biology, environmental science, resource management, botany, zoology and ecology to enable him/her to participate effectively in areas such as conservation, resource management, applied ecology, environmental management, freshwater biology and marine biology research. This Programme is available as a Level 7 and Level 8 award with an exit option at Level 6. The programme is applied in nature, with a large proportion of the learner's time dedicated to laboratory work. The performance of the programme, about student interest, student numbers, CAO cut-off points, the quality of students and the career profile of the graduates, has been very good.

Master of Science in Conservation Behaviour

The MSc in Applied Marine Conservation is intended to prepare students for the management of the rapidly evolving demands of the blue bioeconomy (all economic activities that depend on the sea) and research on the sustainable use of marine resources. Graduates will also have progression opportunities for PhD should they wish to continue in research but will also have skills that will enable them to become their own employer. No changes to the programme are proposed during this Programmatic Review Cycle. This decision was made because the programme has only had 2 intakes to completion. This MSc programme provides learners with an opportunity to undertake their 60-credit research thesis in a setting other than within GMIT. Learners can, and have, partnered with NGOs and other stakeholders while conducting their research. This provides them with an opportunity to develop transferable skills within a professional researcher context. Learners acquire skills such as project management, communications, problem solving, self-reliance, and leadership. This degree is highly internationalized in terms of its design, content, and delivery. The MSc shares 3 modules with the joint International MSc in Marine Biological Resources also delivered and awarded by GMIT. Many of the learners undertake this MSc whilst at the same time working in a related role and utilise their professional activities as part of their research thesis.

Master of Science in Applied Marine Conservation

The MSc in Applied Marine Conservation is intended to prepare students for the management of the rapidly evolving demands of the blue bioeconomy (all economic activities that depend on the sea) and research on the sustainable use of marine resources. Graduates will also have progression opportunities for PhD should they wish to continue in research but will also have skills that will enable them to become their own employer. This MSc programme provides learners with an opportunity to undertake their 60-credit research thesis in a setting other than within GMIT. Learners can, and have, partnered with NGOs and other stakeholders while conducting their research. This provides them with an opportunity to develop transferable skills within a professional researcher context. Learners acquire skills such as project management, communications, problem solving, self-reliance, and leadership. Many of the learners undertake this MSc whilst at the same time working in a related role and utilise their professional activities as part of their research thesis. This degree is highly internationalized in terms of its design, content, and delivery. The MSc shares 3 modules with the joint International MSc in Marine Biological Resources also delivered and awarded by GMIT.

Master of Science in Applied Marine Research

The main aim of this programme is to provide graduates with the experience, knowledge and expertise in Marine Sciences that will enable them to be employed in a variety of organisations, such as private consultancies, government agencies, conservation organisations and research institutes, or to progress to further study at PhD level. This programme is designed in conjunction with the Marine Institute. Applicants accepted onto the course will be provided with a stipend, have their fees paid and will spend a significant portion of Year 1 working in the Marine Institute. Year two comprises taught modules and an international placement for a research dissertation. GMIT and the Marine Institute developed an International MSc Fellowship Programme which aims to transform the scientific stream of Marine Institute's Stagiaire programme into a novel, accredited MSc fellowship programme. The MSc Applied Marine Research was devised and developed in response to the needs of, and in conjunction with, the primary stakeholder in the marine sector in Ireland, the Marine Institute. The MSc share common modules with the other MSc programmes and learners on all four programmes will benefit from the collegiality and critical mass of (national and international) Level 9 students engaged in postgraduate taught programmes in GMIT.

4   General Findings of the External Peer Review Group

Having considered the documentation provided and discussed it with the Programme Board, the External Peer Review Group recommends the following:

Accredited until the next programmatic review	
Accredited until the next programmatic review subject to conditions and/or recommendations[1]	X
Re-design and re-submit to the same External Peer Review Group after additional developmental work	
Not Accredited	

5   Programme-Level Findings Bachelor of Science (Honours) in Applied Freshwater and Marine Biology and Embedded Awards

Consideration for the panel	Overall finding: Yes/No/Partially
Is there an ongoing need for the programme and has evidence been provided to support it?	Yes
Is the level and type of the award appropriate?	Yes
Are the entry requirements for the proposed programme clear and appropriate?	Yes
Is there a relationship between this programme and further education?	Yes
Are the access, transfer and progression procedures appropriate?	Yes
Does the programme comply with the Institute norms for retention, both in first year and subsequent years? Where not, does the Programme Board proactively take appropriate measures to optimise student engagement and retention?	Yes
Does the programme meet the required standards for programmes at its NFQ level (i.e., conform to GMIT Award Standards[2])? For Parent Award? For Embedded Award(s) (if applicable)? For Exit Award (if applicable)? For Minor Award (if applicable)?	Yes
Is the programme structure logical, well designed, and can the stated programme intended learning outcomes, in terms of employment skills and career opportunities, be met by this programme?	Yes
Have appropriate learning and teaching strategies been provided for the programme that supports Student Centered Learning (SCL)?	Yes
Have appropriate programme assessment strategies been provided for the programme taking account of the student workload?	Partially

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[1] **Note:**

Approval is conditional on the submission of a revised programme document that takes account of the conditions and recommendations outlined in the report and a response document describing the actions to address the conditions and recommendations made by the External Peer Review Group (EPRG). In this report, the term 'condition' is used to indicate an action or amendment which in the view of the EPRG must be undertaken prior to the commencement of the next delivery of the programme. Conditions are mandatory if the programme is to be approved. The term 'recommendation' indicates an item to which the Programme Board should give serious consideration for implementation at an early stage and which should be the subject of on-going monitoring.

[2] GMIT has adopted QQI's award standards which are available HERE.

Is there evidence that learning and teaching is informed by research?	Yes
Have appropriate quality management procedures been implemented in line with GMIT's Quality Assurance Framework? (e.g., Induction, Programme Handbook, Programme Board, Student Feedback, External Examiners)	Yes
Does the proposed programme demonstrate an international dimension? (e.g., content, mobility, collaboration)	Yes
Does the programme encompass sustainable development principles and ethos?	Yes
Does the programme embed employability through the inclusion of work placements, employment preparatory module(s) and/or work-based projects?	Yes
Is there evidence of strategies to promote diversity and inclusion?	Partially
Is entrepreneurship, creativity and innovation embedded in the programme?	Partially
Has the efficiency of the programme's design been considered? For example, does the programme meet the Institute norms on staff:student ratios for programmes of this type?	Yes
Is the programme externally facing? (e.g., Stakeholder engagement, guest speakers, fieldtrips, applied projects)	Yes

This programme is a broad field-based programme focussing mainly on organisms and upwards. The proposed changes arise mainly from student feedback and relate mainly to assessments, and the splitting and restructuring modules to manage student workload.

It was clarified that work placement is displayed as yearlong on the Approved Programme Schedule as the preparation element of the module occurs in semester 5, but that students undertake their work experience in semester 6. Students are empowered to find their own hosts through the preparation for placement, and new propositions are evaluated to ensure that they are related to the students' learning. Students undertake modules in college in a block of 4/5 weeks prior to commencing the placement, which does cause some student concern in relation to accommodation. There is a widespread distribution of placement sites nationally and internationally with approximately 30% of students being placed internationally. Of these, 90% are paid placements in that the student pays to get relevant training with reputable conservation organisations worldwide. Generally, there are no issues with placement, and there is contact with students whilst on placement by email but the amount of this is variable.

A discussion took place on whether there were processes in place to create equitable experiences for all students including minorities in relation to the placement. There was no feedback from students to suggest that this was an issue, although one student did comment that they could not afford to be based elsewhere. It was suggested that students who could afford to pay for their placements, or were more confident, could end up with a better opportunities and experiences. The latter has potential to lead to gender related differences in performance.

The Programme Board was asked how they planned to deal with growing student numbers and the availability of placement sites. It is necessary to build up good rapport with potential employers, and the issue has been dealt with to date by some hosts increasing the number of students they took and the sourcing of new placement sites. The number of consultancy companies in Ireland have tripled which has aided the situation, and there is evidence of labour shortages in ecological consultancy. It was clarified, that there is also the capacity to offer placements in the research centre (MFRC) in circumstances where required and for those students with a specific interest in a career in research. The panel took the view that it was important to ensure that experiences across the diversity of hosts were checked part way through to ensure training and opportunities had scientific merit and were more than minor supporting roles.

It was suggested that the three programmes, Levels 6, 7 and 8, have a lot of learning outcomes varying from general to specific and that there is overlap in some instances. The panel was of the view that this is not necessarily a problem, but that the difference in attainment between Levels 6 through 8 should be made more explicit.

The issue of assessment was discussed with a particular focus on whether over-assessment was occurring. The Programme Board did not agree that there was over-assessment and stated that they had reviewed the assessment load and scaled it back considerably. While there is overlap in learning outcomes, it was deemed to be appropriate as the assessment was happening in a different context, of in some instances different aspects of learning outcomes were being assessed. The panel suggested that it would be worth benchmarking assessment load against other comparable courses at other institutions. The Programme Board worked collectively to map assessment methodologies to ensure that a variety of approaches were being used. Rubrics are used for marking and a variety of approaches are taken to giving student feedback which normally occurs within two weeks in accordance with the guideline. The Programme Board were asked to consider whether they could convert some assessment to formative rather than summative. Peer assessment is used and enabled by a plug-in on Moodle. One module used digital badges to recognise the completion of formative assessments. Further analysis of the impact of this initiative is planned. An alternative viewpoint was that uptake can be low on formative assessment as students' view is that assessments need to have currency. The panel advised that this problem can be minimised should formative exercises form the pre-cursor to linked summative assignments.

Each year students are provided with a handbook which includes a Continuous Assessment schedule allowing students to know when deadlines are arising and ensuring that these are spread out where feasible. The panel was of the view that this was good practice, but noted that early notification can be an insufficient means to avoid assignment clustering because students may not have the knowledge required to complete an assignment until the latter stages of the course.

In some modules multiple lecturers are involved in assessing students. In these cases, one lecturer acts as the module coordinator and there is good engagement between lecturers. If there are varying marks between lecturers there is discussion and agreement is reached. There is no formal mechanism for moderation. Normally, using the rubric means that there isn't a lot of variances in marks. Performance across modules is checked, and marks are discussed at Programme Board meetings. The panel took the view that the mechanism for moderating marks is too ambiguous and should be formalised and transparent.

The scheduling of classes varies annually, but lectures are normally between 9am and 6pm with lab classes running later in the evening due to space issues, particularly for first year students. Practical class sizes are capped so practicals are repeated as often as required to deal with the number of students. The panel felt that repetition was not best use of staff time, and that alternative ways of delivering the programme learning objectives may be necessary, especially given the expectation that student numbers are anticipated to grow. The number of contact hours per student reduces as students advance through the programme with increased emphasis on self-directed learning. It was noted that classes into the evening may be problematic for some students (e.g. those with caring duties or part-time work), and the panel recommended that students should have some level of choice over which sessions they attend.

Could do assignments in a formative manner and not necessarily mark them to reduce assessment load. The panel emphasised the need to determine whether the learning objective had been assessed sufficiently across the programme as a whole, rather than necessarily within each module. An example was given of a formative assessment where uptake is very low – feeling is that it needs to have currency. The panel acknowledged this suggestion, but was of the view that there were other ways to incentivise other than the provision of marks.

A variety of teaching approaches are used including flipped classroom, role play, discussion, and problem-based learning. Lecturers are open and approachable with a good rapport with students. PASS is a student mentor led programme that meet students weekly. It is a voluntary programme, but students do engage with it rate it positively. The panel commended the staff and student mentor efforts, and enquired over the level of mental health first aid training and/or awareness as something to consider in terms of maximising pastoral care.

A difference in student retention between the level 7 and 8 programmes was commented on. In some instances, low numbers of level 7 students skews percentages. It can be quite difficult to identify trends or causes, although students report a range of reasons for non-engagement many of which are personal. There are a lot of Institutional initiatives to support retention including an extended induction programme (First 5 Weeks) and PASS (Peer Assisted Study Sessions).

The issue of electives was discussed. The class size doesn't lend itself easily to electives, but students can specialise within their research project. The panel would have liked to see more opportunity to specialise in latter years, perhaps with some options provided by other departments (e.g. business acumen, policy) to avoid additional burden.

A discussion took place on specific elements of the programme including the volume of chemistry in the programme, the placing of the legislation and GIS modules. It was clarified that chemistry is taught in stage one and embedded in some later modules, but that this is a biology degree. Whilst the module on legislation is in stage four, this is not the first time in the programme that environmental legislation is introduced. GIS as a tool and technique is introduced early in the programme although the module is situated in the final stage.

Feedback from students was generally positive. It was agreed that the workload was significant although in at least one case it was viewed positively in terms of maintaining engagement. Lecturers are normally good at providing feedback in timely manner. The number of some assessment types was viewed as excessive e.g., posters. Some of the module content in stage 4 was viewed as niche (e.g., cetaceans, birds) whilst options to study aquaculture, diving or fish husbandry skills would be welcomed. Electives would allow students to tailor degree, but the programme should not be diluted to the point that employers don't understand the knowledge and skill set of graduates. Environmental issues are covered in the programme although not in depth. Placement was viewed positively with students having good experiences. Finance was considered a barrier to some placements. Students feel that they are listened to and that any issues are resolved directly with lecturers, through class representatives or in the Programme Board. End of year questionnaires provide an added feedback mechanism. Lecturers worked hard to pivot to online during Covid, but students are glad to be back onsite engaging with applied learning. The panel emphasised the need to retain good practices developed during the pandemic as ways to diversity the portfolio of teaching methodology and facilitate student engagement.

A brief discussion was had about the attractiveness and relevance of the programmes on offer. The panel agreed that the programmes were warranted and served a desirable gap in the market, but were of the view that the link to contemporary issues and areas of concern could be more explicit to enhance the appeal of the programme to the target generation and distinguish from competitors with similarly named programmes.

The proposed changes arise mainly from student feedback and relate mainly to assessments, and the splitting and restructuring modules to manage student workload. All changes as outlined in Appendix D were approved and the programme was accredited until the next programmatic review subject to the recommendations below.

Commendation(s):
1. The Programme Board are evidently very student centric.
2. Staff have strong experience and expertise in the discipline and are research active, which is advantageous to students, and is particularly reflected in student research projects.
3. There is a focus on access to infrastructure to enhance student learning e.g., the opportunity for students to get experience on a research vessel. This is a strength and should be continued.
4. The inclusion of a placement on the programme provides students with applied experience which will advantage their career opportunities.

Condition(s):
1. Review procedures for engagement with employers and students during work placement, ensuring that there is video/oral contact with both parties at least once during the placement.
2. Review the overlap between learning outcome in the Level 6, 7 and 8 programmes ensuring that each are appropriate and that the additional learning at each level is clearly articulated.
3. Investigate how to provide elective choices for students toward the end of the degree programme. This will allow students an opportunity to specialise and enhance their career prospects. Electives could be drawn from other science programmes (e.g., sustainability) and disciplines (e.g., business).
4. Review the efficiency of how the programme is taught and assessed eliminating repetition where feasible. Consider whether larger classes, flipped classroom, formative rather than summative assessment and enhanced coordination in relation to assessment workload may assist in this regard.

Recommendation(s):
1. Given the variation in placement experience and the growing number of students, consider whether the work placement should be optional and/or there are other measures that can ensure a more equitable and/or relevant experience.
2. Review assessment workload with a view to reducing the student workload. This may involve changing some assessments to formative assessments or thinking innovatively about how and when assessment and feedback occurs.
3. Clarify failed elements within module descriptors and clarify that the project is considered an element of continuous assessment for the purposes of the Failed Element on the APS special regulation.
4. Integrate the zero credit Project Data Management module into the Research Project module to ensure that students are being given full credit for the work involved.
5. Consider how more formal and rigorous moderation can be implemented in instances where there are multiple lecturers involved in grading a module to ensure parity of grading.
6. Ensure that contemporary issues are comprehensively covered in the programme, and in module titles as appropriate e.g., net zero, nature based solutions, carbon off-setting.
7. Consider whether the volume of modules in the programme should be reduced by moving from 5 to 10 ECTS (e.g. by combining modules) to reduce administration load and whether there should be consistency in relation to the breakdown of assessment in each module.
8. Consider moving the international field trip from fourth year to third year as it will enhance social cohesion and solidify learning as students move into their final year of study. Consider whether the inclusion of 'international' in the title limits the scope of the module.

For office use only (To be completed by Head of Department)	
Changes due to be implemented in:	
Changes to be implemented on phased or simultaneous basis:	
NB: If the programme changes are to be implemented simultaneously (all stages at once) then the Academic Information Systems Office must be notified immediately where modules have moved stages and an interim APS is required.	

6 Programme-Level Findings:
Master of Science in Conservation Behaviour
Master of Science in Applied Marine Conservation
Master of Science in Applied Marine Research

Consideration for the panel	Overall finding: Yes/No/Partially
Is there an ongoing need for the programme and has evidence been provided to support it?	Yes
Is the level and type of the award appropriate?	Yes
Are the entry requirements for the proposed programme clear and appropriate?	Yes
Is there a relationship between this programme and further education?	Yes
Are the access, transfer and progression procedures appropriate?	Yes
Does the programme comply with the Institute norms for retention, both in first year and subsequent years? Where not, does the Programme Board proactively take appropriate measures to optimise student engagement and retention?	Yes
Does the programme meet the required standards for programmes at its NFQ level (i.e., conform to GMIT Award Standards[3])? For Parent Award? For Embedded Award(s) (if applicable)? For Exit Award (if applicable)? For Minor Award (if applicable)?	Yes
Is the programme structure logical, well designed, and can the stated programme intended learning outcomes, in terms of employment skills and career opportunities, be met by this programme?	Yes
Have appropriate learning and teaching strategies been provided for the programme that supports Student Centered Learning (SCL)?	Yes
Have appropriate programme assessment strategies been provided for the programme taking account of the student workload?	Yes
Is there evidence that learning and teaching is informed by research?	Yes
Have appropriate quality management procedures been implemented in line with GMIT's Quality Assurance Framework? (e.g., Induction, Programme Handbook, Programme Board, Student Feedback, External Examiners)	Yes
Does the proposed programme demonstrate an international dimension? (e.g. content, mobility, collaboration)	Yes
Does the programme encompass sustainable development principles and ethos?	Yes

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[3] GMIT has adopted QQI's award standards which are available HERE.

Does the programme embed employability through the inclusion of work placements, employment preparatory module(s) and/or work-based projects?	Yes
Is there evidence of strategies to promote diversity and inclusion?	Yes
Is entrepreneurship, creativity and innovation embedded in the programme?	Yes
Has the efficiency of the programme's design been considered? For example, does the programme meet the Institute norms on staff:student ratios for programmes of this type?	Yes
Is the programme externally facing? (e.g. Stakeholder engagement, guest speakers, fieldtrips, applied projects)	Yes

The IMBRSea Masters has been running in GMIT since 2011. An opportunity was identified to build more masters programmes around the modules being taught on that programme. The development of additional masters programmes was also was in line with the Institute's strategy and aim to become Technological University. The programmes' design is based on an institute imperative to increase research students and is dominated by 60 ECTS of research. This allows students to develop and excel in research. Some of the students have progressed straight from their undergraduate degree internally. There are also students who return a number of years post-graduation. Whilst there are topics that are studied at undergraduate level in the masters programme, these are studied at a more advanced level.

Students either source research projects for themselves and are supported in this endeavour, or they are provided with research opportunities within ATU. Organisations that students work with include National Parks and Wildlife and the Marine Institute. Supervision tends to be more intensive at the beginning and end of the research process. The frequency and duration of meetings is dictated by the needs of students.

No cohorts have been recruited to the MSc in Applied Marine Research programme yet, but it is proposed to retain its validation to facilitate intakes in conjunction with ongoing discussions with the Marine Institute.

The question was posed as to whether horizon scanning is two way, and it was confirmed by way of an example that GMIT influences Marine Institute research and vice versa. The panel expressed the need to ensure that subject matter addresses both short and long term needs to ensure graduates are adaptable and relevant to an evolving job market.

The fact that no changes were proposed for the programmes given the dynamic nature of the environment was queried. The Programme Boards pointed to the fact that that there is scope within the programmes to introduce topical issues. Furthermore, as the programmes are new, they want to have more deliveries before determining what changes may be required. One issue that has arisen is students presuming that it is a part-time masters, when it is not. There is also significant demand from students without cognate qualifications to study on the masters. The development of a conversion programme is being considered.

It is necessary to have researchers who can produce evidence for government on topical issues. The programme is well served by having staff from the university's leading research centre. This helps inform students' research strategy. The range of research centre staff and interests are broad, so it is feasible to match student interests with relevant staff.

Whilst there is not a specific employment day for these masters students, there are fairs organised by the Careeres Office. There is also access to staff professional networks, and workshops on campus with key industry personnel.

The programmes are benchmarked against the IMBRSea International masters which is operated by 11 academic partners. When that masters is being reviewed a realignment with ATU degrees takes place. Whilst there are no electives on the Applied Marine Conservation and Conservation Behaviour masters, students can sit in on other modules.

ATU Galway staff are involved with the Marine Institute vessels. There is an opportunity for students to get ship time on the Training Through Research Survey (TTRS) scheme and attain 10 ECTS at level 9.

No changes are proposed to the programmes as outlined in appendices E, F and G. The programmes were accredited until the next programmatic review subject to the recommendations below.

Commendation(s):
1. The Programme Board are evidently very student centric.
2. Staff have strong experience and expertise in the discipline and are research active, which is advantageous to students, and is particularly reflected in student research projects.
3. There is a focus on access to infrastructure to enhance student learning e.g., the opportunity for students to get experience on a research vessel. This is a strength and should be continued.
4. The inclusion of a professional development opportunity on the programme provides students with applied experience.

Condition(s):
1. Conduct horizon scanning to build links with other colleges and organisations. Whilst it may be necessary to respond to external demand for programmes or specific content, the Department needs to also consider how to secure long-term capacity within the industry and society more broadly.
2. Review the programme content and module titles to link both better to the bigger environmental challenges e.g., climate change, energy resources, sustainability, clean technologies. This will assist in the programme's attractiveness to potential students.
3. Ensure that the programme is clearly distinguished from the undergraduate degree in its content ensuring that new and topical issues are covered, moving beyond deeper study of undergraduate topics. It may be useful to incorporate more industry or other relevant stakeholder representatives in the programme.

Recommendation(s):
1. Consider how the viability of the programme may be secured.
2. Review programme learning outcomes with a view to reducing the number of them.
3. Put mechanisms in place that ensure that all students have equal opportunities in relation to research projects and that there is equity of student experience.
4. Identify clearly the unique selling proposition of this masters programme and how it can be differentiated from others in the School and beyond.
5. Consider potential ways of facilitating students to build industry contacts throughout the programme. This will allow students to maximise their aspirations and enhance their career prospects, whilst placing students on an equal footing in terms of securing strong experiences.

6. Consider the feasibility of incorporating electives in the Conservation Behaviour and Applied Marine Conservation programmes to allow deeper specialisation prior to the research module.

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Changes to be implemented on phased or simultaneous basis:	
NB: If the programme changes are to be implemented simultaneously (all stages at once) then the Academic Information Systems Office must be notified immediately where modules have moved stages and an interim APS is required.	

Validation Panel Report Approved By:

 Signed:

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Chairperson

 Date: **25th May, 2022**

Appendix A   Programme Board Members

The panel met with the following staff:

Name	Position
Dr Ian O'Connor	Head of Department of Natural Resources and The Environment
Dr Des Foley	Head of School of Science and Computing

The panel met with the following Freshwater & Marine Biology Academic Staff

Dr Roisin Nash	Dr Katie O'Dwyer	Dr Simon Berrow
Dr Enda Gibney	Dr Pauline King	Dr Heather T. Lally
Dr Pat. Dinneen	Dr Bernadette O'Neill	Dr Martin Gammell
Dr Joanne O'Brien	Dr James Moran	Dr Jean Raleigh
Dr Heidi Acampora	Dr Deirdre Brophy	

The panel met with the following Masters Academic Staff

Dr Roisin Nash	Dr Katie O'Dwyer	Dr Martin Gammell
Dr Joanne O'Brien	Dr Simon Berrow	Dr Heidi Acampora
Dr Jose M. Fariñas-Franco	Dr Cóilín Minto	

Appendix B - Student Representatives

The panel met with the following student representatives:

Student Name	Programme	Stage
Mr. Todd Byrne	Bachelor of Science (Honours) in Applied Freshwater and Marine Biology	4
Ms. Charlene Watters	Bachelor of Science (Honours) in Applied Freshwater and Marine Biology	3
Mr. Edward Palmer	Bachelor of Science (Honours) in Applied Freshwater and Marine Biology	3

Appendix C - Schedule of Meetings

Agenda	
Date:	May 16th, 2022
9am	Panel Meet
9.45am	Meeting with Applied Freshwater and Marine Biology Programme Board
11.45am	Coffee Break
12 noon	Meet with Students
12.30pm	Private Deliberations
1pm	Lunch
1.45pm	Meeting with Masters Programme Boards
4.15pm	Private Deliberations
5pm	Initial Feedback
The Agenda may be subject to slight alteration on the day.	

Appendix D - Proposed Changes for Bachelor of Science (Honours) in Applied Freshwater and Marine Biology and Embedded Awards

Topic	Proposed Change	Rationale
Programme Learning Outcomes	Wording changed	To better reflect the current student cohort and programme
Overall Contact Hours		
Structure or Sequencing of Modules	Stage 3 *Professional Development Portfolio* move from Semester 7 to Semester 6. Incorporates module with Powerboat handling and PST courses	Reflects feedback from students that this knowledge is required prior to work placement.
	Aquatic Animal Behaviour move from Semester 6 to Semester 7	Re- designed as a Level 8 module to accommodate PDP - move detailed above.
	Stage 4 *Applied Ecological Modelling* move from Semester 7 to Semester 8	This module logically follows from Advanced Data Analysis (ADA) in Semester 7.
	Geographic Information Systems (GIS) move from Semester 8 to Semester 7	To accommodate AEM move detailed above.
Addition of New Module(s)	n/a	
New APS Regulations	n/a	
Minimum Entry Requirements	n/a	

Changed transfer or progression routes	n/a	
Teaching & Learning Strategy	Minor changes	
Assessment Strategy	Incorporation of more diverse assessment types to achieve QQI Indicators relevant to each programme level.	
Module Changes		
Stage 2		
Field and Lab Techniques	Change from Semester-long to Year-long Introduction to molecular techniques and theory/practice on eDNA included in the module Introduction to GIS to be included in the module	allow more cross-module assignments and that this will benefit the learners. The Feedback from students is that they would benefit from an earlier introduction to GIS
Experimental Design & Statistics	Change from Semester-long to Year-long	allow for more cross-module assignments and will benefit the learners
Stage 3		
ARM&A	This module will split into two 5 Credit modules namely *'Fisheries, monitoring and assessment'* *'Environmental monitoring and assessment'* GIS will be incorporated into the indicative syllabus of the latter. Both modules will run in Semester 5	The feedback from students highlighted the need to split this module to better reflect what is being taught. There will be links between modules for fieldtrips etc. Incorporating GIS will provide students with a foundation for the Stage 4 GIS module.
Professional Practice	This will be combined with Professional Practice assignments	The original separation was causing confusion to learners.
Stage 4		
Biodiversity & Conservation	Move International Fieldtrip to Aquatic Resource Management Module (Semester 8)	The programme board believes the learning outcomes of the fieldtrip are better aligned with the learning outcomes of ARM

Appendix E - Proposed Changes for Master of Science in Conservation Behaviour

Topic	Proposed Change	Rationale
Programme Learning Outcomes	none	New programme
Overall Contact Hours	none	New programme
Structure or Sequencing of Modules	none	New programme
Addition of New Module(s)	none	New programme
New APS Regulations	none	New programme
Minimum Entry Requirements	none	New programme
Changed transfer or progression routes	none	New programme

Topic	Proposed Change	Rationale
Teaching & Learning Strategy	none	New programme
Assessment Strategy	none	New programme
Module Changes	none	New programme

Appendix F - Proposed Changes for Master of Science in Applied Marine Conservation

Topic	Proposed Change	Rationale
Programme Learning Outcomes	none	New programme
Overall Contact Hours	none	New programme
Structure or Sequencing of Modules	none	New programme
Addition of New Module(s)	none	New programme
New APS Regulations	none	New programme
Minimum Entry Requirements	none	New programme
Changed transfer or progression routes	none	New programme
Teaching & Learning Strategy	none	New programme
Assessment Strategy	none	New programme
Module Changes	none	New programme

Appendix G - Proposed Changes for Master of Science in Applied Marine Research

Topic	Proposed Change	Rationale
Programme Learning Outcomes	none	New programme
Overall Contact Hours	none	New programme
Structure or Sequencing of Modules	none	New programme
Addition of New Module(s)	none	New programme
New APS Regulations	none	New programme
Minimum Entry Requirements	none	New programme
Changed transfer or progression routes	none	New programme
Teaching & Learning Strategy	none	New programme
Assessment Strategy	none	New programme
Module Changes	none	New programme