University of Bath
Faculty of Science

Minutes of Meeting

Meeting	**FACULTY LEARNING, TEACHING AND QUALITY COMMITTEE**
Place	Microsoft Teams
Date and Time	Wednesday 8 June 2022 at 9:15am

Present	Professor M V Hejmadi	Associate Dean (Education) (Chair)
	Miss L Beaven	Centre for Learning and Teaching (CLT)
	Dr J Benardis	Department of Computer Science
	Dr P Cooper	Curriculum Transformation Committee (CTC) member
	Dr S Crennell	Natural Sciences programmes
	Mrs G Eggleston	Academic Registry
	Ms P Gabriel	Programmes Manager (Operations)
	Dr N Gjersoe	Curriculum Transformation Committee (CTC) member
	Dr F R Laughton	Department of Physics
	Dr G Mathlin	Natural Sciences programmes
	Dr K Mattacks	Centre for Learning and Teaching (CLT)
	Dr F Nemetz	Department of Computer Science
	Dr P J Rogers	Department of Pharmacy and Pharmacology
	Dr T Shardlow	Department of Mathematical Sciences
	Dr G Shermer	Department of Chemistry
	Dr C M Todd	Department of Biology and Biochemistry
In attendance	Mrs M L Hallett	Faculty Assistant Registrar (Secretary)
Apologies	Dr F Bisset	Head of Learning Partnerships
	Miss M Crossman	Students' Union (SU) Sabbatical Officer (Community)
	Mr J Dean	Postgraduate Taught student representative (Department of Computer Science)
	Mr J Ogunyemi	Undergraduate student representative (Natural Sciences)
	Professor S Ward	Associate Dean (International)

Action

3137 The Chair welcomed the following extraordinary FLTQC members:

- Dr Nathalia Gjersoe and Dr Philip Cooper (CTC members).
- Mrs Georgina Eggleston (Registry rep).

3138 **CURRICULUM TRANSFORMATION: PHASE 3** for transformed courses starting in 2023/24

Department of Computer Science
BSc and MComp (Hons) Computer Science
BSc and MComp (Hons) Computer Science and Mathematics
BSc and MComp (Hons) Computer Science and Artificial Intelligence

For the following, visit: Computer Science - All Documents (bath.ac.uk)

Dr J Benardis presented this item, and Dr T Shardlow scrutinised. Dr Benardis explained that theory-based units have been combined with practical oriented units to improve synergies and reduce workload and assessment burden for students and staff. The streamlined offering remains competitive and still enables BCS requirements and

benchmark statements to be met. Changes have been made to how programming is taught: students will be taught functional programming and then move to more object-orientated concepts later on. Cybersecurity is being introduced formally in the general computer science curriculum and the programmes have moved towards streams of knowledge and year-long units, which will enable students to follow pathways towards higher level concepts throughout the years and within units, supported by formative and summative assessment. The MComp year has been given a strong research identity; new reading units, focused on the Department's research groups, have been introduced, and 3 units have been elevated to M level with a research / critical evaluation task, thereby creating efficiencies between PGT and UG.

Dr Shardlow noted the Department's current low staff:student ratio and enquired as to whether the Department is planning to increase student UG numbers. Dr Benardis explained that the Department is not planning to increase UG student numbers in the next few years but has planned to be scalable and sustainable. The Department has made its offering lean, standardising hours per credit size, per week, taking into account good practice and CT principles, without comprising quality or LOs. The Department has moved to more group reports, which is reflective of practice in industry, auto-marked assignments that give immediate feedback, peer assessment and worked example formative assessment.

Dr Shardlow agreed to provide Dr Benardis with a list of minor issues post-meeting relating to the unit descriptions and the assessment mapping for the joint degrees with maths, e.g. some courseworks are missing.

Dr Gjersoe enquired as to whether there was sufficient opportunity for students to receive individual feedback within the new framework. Dr Benardis explained that, with the exception of group work, students will be provided with individual feedback, and often generic feedback too. Students will also be provided with individual formative feedback, instantly if it is auto marked and from peers if it is peer marked. In addition, all units have tutorials in which individual feedback can be provided and Moodle forums in which questions can be posted.

Dr Gjersoe enquired as to the difference between 5 and 10 credit units. Dr Benardis explained that contact hours are scaled up accordingly, e.g. more intensive attendance is required in labs / lectures / tutorials (5 hours / week). Dr Benardis reported that, overall, contact hours have been reduced compared to the current structure.

The Committee considered the following Phase 3 documentation:

- Annex 10 (Phase 3 information, including any exemptions from NFAAR).
- Updated course structures (Annex 4):

Dr Gjersoe requested that the Department consider how to ensure that incoming Study Abroad students will be able to achieve sufficient credit in a semester, given the move to year-long units.

- Updated unit information (Annex 7):

Dr Cooper enquired as to whether the 10% weighting of presentations in the Final Year compulsory units signals strongly enough the importance of presentation skills in terms of employability. Dr Benardis explained that oral, video and poster presentations are embedded in most of the group work elements. Dr Cooper highlighted the need to ensure that presentation and report writing assessments require students to practice communicating with non-specialists.

Mrs Eggleston highlighted the need to separate out the assessment points, rather than bundling a number of submission points together into one assessment point, e.g. in Computer Systems Architecture, three assessment sub-types are listed under one umbrella assessment type. Mrs Eggleston advised that this does not reduce flexibility; it will still be possible to change the assessment sub-types because students will not be informed of these until they come to take the unit. The Committee agreed that separating out the assessment sub-types is necessary in order to be able to specify the reassessment mechanism, e.g. like-for-like.

Mrs Eggleston enquired as to the nature of the 'set exercises'. Dr Benardis explained that these referred to programming. Mrs Eggleston flagged that it is possible to add a new assessment sub-type to the Assessment Taxonomy if needed.

- Updated Course Intended Learning Outcomes (CILO) mapping (Annex 5).
- External Examiner report and response.
- Annex 11 Assessment Strategy and Mapping:

Dr Shardlow enquired as to how authentic assessment and real-world problems will work. Dr Benardis explained that in Year 1 students are encouraged to think innovatively in their problem solving. In Year 2, students complete a software project in which they solve real world problems for a charity or local business. Students are expected to offer realistic solutions in terms of technological feasibility and usefulness.
Dr Shardlow enquired as to when open and closed book examinations would be used. Dr Benardis explained that the Department wishes to move away from memorisation and towards internalisation. Closed book exams encourage students to focus more on their revision, whereas open book exams are useful for case-studies.
Dr Shardlow noted that formative assessment is not included in the assessment mapping. Dr Benardis explained that this was so the Department could assure itself that it is not over-assessing. Dr Benardis commented that the formative assessments will be designed to build up, in small chunks, towards a final summative assessment, and to encourage students to engage with the material.
The Committee agreed to approve the Phase 3 documentation, subject to the action points above being addressed.

Department of Mathematical Sciences
BSc (Hons) Mathematics
BSc (Hons) Mathematics and Statistics
BSc (Hons) Mathematics, Statistics and Data Science
MMath (Hons) Mathematics
For the following, visit: Mathematical Sciences - All Documents (bath.ac.uk)
Dr T Shardlow presented this item, and Dr F Nemetz scrutinised.
Dr Shardlow reported that he had uploaded, just before the meeting, a document on progression requirements and transfer to joint degrees (copied across from the current degrees). The Chair stated that the Committee would not be able to approve this in the meeting due to the inability to read it in advance.
Year 1 is largely the same as the current degrees, because Year 1 was amended, and content reduced, following introduction of the BSc (Hons) Mathematics, Statistics and Data Science degree in 2021/22. In Year 2, the Statistics 2A unit will have an in-person, invigilated, computer-based exam, which will involve approx. 200 students. There has been an overall unit saving in Year 2 due to a rearrangement of the degrees that works well with B&B and Nat Sci. Most courseworks have been split into two, so there is a smaller one earlier in the semester. In Year 3 there are some open-book exams to enable different types of questions, better suited to the stage. The size of the MMath Final Year project has been increased; the summative assessment remains the same but there will be more formative assessment. Some of the 10 credit units in the pure area of mathematics in Years 2-4 have 3 hour invigilated exams. This has been increased from 2 hours to be able to ask more searching questions about more of the syllabus, and to give students more time to think and answer these more difficult questions. Dr Shardlow stated that the Department did not foresee any timetabling issues with the 3 hour exams. Dr Shardlow reported that contact time in Year 1 would remain the same but there would be less contact time in later years.
The Chair enquired as to what the Department would identify as the transformative aspects of the changes proposed. Dr Shardlow explained that flexibility has improved through the streamlining of prerequisites between different branches of mathematics and a freeing up of the streams, e.g. less formal pure mathematics is now required as a precursor for applied mathematics. Also, Year 1 has changed from having a content heavy

unit (Programming and Discrete Mathematics), to including a unit that introduces broader skill sets and provides the context of the maths (Programming, Foundations and Connections), for which students complete a group report and group oral. In Year 2, students can choose units that are coursework based.

The Committee considered the following Phase 3 documentation:

- Annex 10 (Phase 3 information, including any exemptions from NFAAR).
- Updated course structures (Annex 4):

Dr Nemetz noted that in Year 2 students could pick up to 5 units per semester, but most would take 3-4. Dr Shardlow explained that while most students will be encouraged not to take 5 units per semester, this possibility is necessary so as not to exclude option combinations that are important to certain combinations of research groups.

Dr Gjersoe enquired about the streams. Dr Shardlow explained that in Year 1 students take two 'shell units' which contain two separate topics. Most students will end up taking 4 different subjects per semester.

Dr Gjersoe enquired as to how the Department takes responsibility for the employability of students given that students have such breadth of choice in Years 2 and Final Year and can take their own path through the degree. Dr Shardlow explained that Maths graduates possess skills in rigorous thinking and analysis of facts, developed in a mathematical context. The development of such skill is not significantly affected by the type of mathematics studied, although pure mathematics focuses more on developing rigorous thinking, and it is likely that the associated assessment will be mainly exams.

Dr Gjersoe enquired as to whether, if the skills can be acquired through any content, there is an argument for simplifying the offer and rationalising the workload associated with having such a proliferation of options. Dr Shardlow explained that the options represent all the different branches of mathematics students can explore, and in which they can specialise, which supports developing research mathematicians.

Dr Gjersoe enquired as to whether the Department has sufficient staff to team teach options so that if a member of staff becomes unavailable, options do not have to be pulled. Dr Shardlow explained that the range of options is similar to that currently available and in terms of the demand on staff. The newly introduced BSc (Hons) Mathematics, Statistics and Data Science degree has increased the number of options in each year but the Department has already allocated for this in Years 1 and 2. Dr Shardlow confirmed that as part of the streams within the programmes there is more consistency for student choices than just a proliferation of all the choices available to them. Students are channelled appropriately through the use of prerequisites and are issued with a diagram which shows how what they learnt in Year 2 leads to different options in Year 3, and makes clear the different pathways available. The Chair enquired as to the Department policy on minimum unit cohort sizes. Dr Shardlow reported that some PGT units have ran in the past with fewer than 10 students.

Dr Gjersoe highlighted the need to ensure inclusivity within the context of the programmes working well for the majority of students.

Dr Cooper highlighted that Advanced Accounting should be corrected from an MN2 unit to an MN3 unit.

- Updated unit information (Annex 7):

Dr Nemetz enquired as to why the size of the MMath Final Year project had been increased. Dr Shardlow explained that this prevented students from taking too many units per semester. Many of the Final Year units are 5 credit to provide a diversity of mathematics.

- Updated Course Intended Learning Outcomes (CILO) mapping (Annex 5):

The Chair commented that the CILO for the BSc (Hons) Mathematics, Statistics and Data Science degree appear to be identical to those for the BSc (Hons) Mathematics and BSc (Hons) Mathematics and Statistics degrees.

- External Examiner report and response:

The Committee noted that the External Examiner reports were yet to be received.

- Annex 11 Assessment Strategy and Mapping:

Dr Nemetz enquired as to whether Unit Convenors would review Final Year BSc formative work submitted. Dr Shardlow explained that the Department cannot commit to this because if every student submitted solutions to questions set every two weeks the Unit Convenors would become overwhelmed.
Dr Nemetz enquired as to whether Years 1 and 2 comprised only closed book exams, with open book exams only in the final years. Dr Shardlow explained that open book exams had been selected according to the appropriateness for the discipline.
Dr Nemetz enquired as to why the submission deadline for the year-long MMath project fell in revision week. Dr Shardlow explained that this deadline applies to, and works for, the current Final Year BSc project. The MMath project deadline (currently in week 10) has been extended to give students more time.
Dr Gjersoe enquired as to whether the Department planned to move back to primarily in-person examinations. Dr Shardlow explained that invigilation is important to ensure integrity of the examinations.
Dr Gjersoe enquired as to whether there will be less assessment than pre-CT. Dr Shardlow stated that students will be taking fewer units, so will have less assessment.
Dr Cooper enquired as to the extent to which CT had reduced assessment. Dr Shardlow clarified that the assessment map includes both summative and formative assessment, e.g. weekly homework tasks.
Dr Cooper enquired as to the development of employability skills throughout the degree. Dr Shardlow explained that these skills are developed in Year 1. From Year 2 students can choose the extent to which they develop their softer / employability skills, e.g. group work / communication skills, through their option choices. In Year 2 students also have small group tutorials for discussion / interaction. Dr Shardlow added that the MMath project involves both a formative and summative oral presentation and narrative writing skills.
The Committee agreed to approve the Phase 3 documentation, subject to the action points above being addressed.

Natural Sciences
BSc (Hons) Natural Sciences
MSci (Hons) Natural Sciences
For the following, visit: Natural Sciences - All Documents (bath.ac.uk)
Dr G Mathlin presented this item, and all scrutinised. Dr Mathlin explained that Natural Sciences is a suite of 35 separate streams constructed out of a large number of units mainly contributed by departments within the Faculty, but also from outside the Faculty (Education, Psychology and Management), plus a small number of skills units that all Nat Sci students will take in Years 1 and 2 and BSc students will continue into their Final Year, and a few Nat Sci owned environmental units. Discussions are ongoing about launching a BSc Environmental Sciences degree, likely to be owned by the nascent Department of Life Sciences, so the Nat Sci environmental units may move across to the new degree. Dr Mathlin highlighted the spreadsheet that captures all of the combinations and rules of the transformed courses. Dr Mathlin commented that the student experience will be largely dependent upon the stream they take.
The Committee considered the following Phase 3 documentation:

- Annex 10 (Phase 3 information, including any exemptions from NFAAR).
- Updated course structures (Annex 4).
- Updated unit information (Annex 7):

Dr Mathlin reported that some Year 1, Year 2 and Final Year unit descriptions need to be updated.

- External Examiner report and response:

The Committee noted that the External Examiner reports were yet to be received.

- Annex 11 Assessment Strategy and Mapping:

Dr Gjersoe enquired as to whether it would be possible to produce a commentary to reflect how Nat Sci will support the coherence of the experience for students moving

between departments with their own different assessment strategies. Dr Cooper suggested producing a narrative that binds the course together or a minimum framework, e.g. that communicates to students that as part of a Nat Sci degree they will experience a diverse range of assessments and/or will develop specified skills / knowledge / ability. Dr Mathlin explained that this narrative already exists and can be extracted from the accreditation documentation. Dr Crennell commented that the single compulsory unit in each year will provide a progression of skills, e.g. presentations and essay writing, and will bring together the interdisciplinary nature of the different streams.
The Committee agreed to approve the Phase 3 documentation, subject to the action points above being addressed.

Department of Pharmacy and Pharmacology
MPharm (Hons) Pharmacy (and with integrated pre-registration year)
For the following, visit: Pharmacy - All Documents (bath.ac.uk)
Dr P Rogers presented this item, and Dr C Todd scrutinised. Dr Rogers explained that the MPharm degree went through significant change from 2015/16; the programme was reduced from 52 units to 20 units in total. Phase 1 was completed in the knowledge that the GPhC was about to introduce revised standards for MPharm graduates. The new standards were published in early 2021, subject to the government approving funding changes for MPharm students, which were approved on 31 March 2022. Pharmacy will move into what the government calls 'clinical tariff' from 2022/23. The MPharm has been changed to include more time in clinical practice to ensure that MPharm graduates are ready to complete their foundation year (previously known as the preregistration year) in their 5th year, to train as a prescriber. However, the OfS still sees the MPharm being funded as laboratory science and therefore operating within a 30 week academic timetable. Health Education England (HEE) funding may push the MPharm into a longer academic year. Content taught on campus has been rationalised as more material is learned in practice by student pharmacists. The number of coursework assessments has been reduced so there are fewer, deeper assessments. The course assessments map onto the GPhC's graduate outcomes; as students move through the course they are expected to progress from 'knows', 'knows how', 'shows how' to 'does' types of assessments. As the course progresses, assessment shifts away from exams and more towards coursework assessment of competencies. The Department is working closely with HEE; Dr Rogers co-chairs a national group looking at how the new standards will be embedded in the MPharm programme and how placement-based learning will work. There is a drive across the sector to have standardised assessments for the clinical placement time, not all of which have been written or resolved yet; this will affect the Preparing for Professional Practice units. The opportunity to undertake a Final Year project in Semester 1 overseas will be retained. There are parallel unit descriptions for a Bath campus-based project or an overseas project, but these might be combined into a single unit description containing the two options since the assessment will be the same. Open book vs closed book exams are yet to be determined as the Department expects this to be driven more centrally.
The Committee noted that Dr Todd had provided Dr Rogers with comments which are in the process of being addressed.
Dr Cooper enquired as to how the opportunity of CT has been used to distinguish the MPharm more in the market. Dr Rogers explained that the GPhC has pushed convergence of MPharm programmes across the country, e.g. highly integrated programmes. The overseas placement is a feature of the Bath MPharm but is also offered elsewhere. The focus on global health in the Final Year is unique to Bath and has been retained. The amount of time that students will spend off-campus and in clinical practice has been increased from 6 to 14 weeks across the programme.
Mrs Eggleston highlighted the need to make clear in marketing materials that the overseas opportunities are not guaranteed.

Dr Gjersoe requested that the Department consider how to ensure that incoming Study Abroad students will be able to achieve sufficient credit in a semester, given the year-long units. Dr Rogers commented that pharmacology units have been used in the past in order to place incoming students.

The Committee considered the following Phase 2 and Phase 3 documentation:

- Annex 3 Course level information, including Course Description.
- Annexes 8 (flexible design parameters) and 9 (notification of design intentions).
- Annex 10 (Phase 3 information, including any exemptions from NFAAR).
- Course structures (Annex 4).
- Unit information (Annex 7).
- Course Intended Learning Outcomes (CILO) mapping (Annex 5).
- External Examiner report and response.
- Annex 11 Assessment Strategy and Mapping:

Dr Cooper noted the exam burden in Year 1, Semester 1. Dr Rogers explained that the Department had considered it important to have a 25% weighted MCQ in Semester 1 to help prepare students for the May exams.

- Annex 6 Oversight and Feedback.

The Committee agreed to approve the Phase 2 and Phase 3 documentation, subject to the action points above being addressed.

The Committee noted that the deadline for the Phase 3 documentation is the end of July. Mrs Eggleston reported that Registry will send out clarification of the process and exact deadlines, including external vs internal information requirements. The Committee agreed that scrutineers would check edits and sign off the Phase 3 documentation by 13 July.

3139 ANY OTHER BUSINESS

There was none.

The meeting concluded at 11:25.

_____ _____

Professor Momna Hejmadi — Date

Chair of Faculty of Science Learning, Teaching and Quality Committee