



LEARNING & TEACHING SERVICE

FULL COURSE (route) PROPOSAL

(taught programmes only)

for NEW COURSES & MAJOR COURSE AMENDMENTS (NEW ACADEMIC MODEL)

Please refer to the course proposal Procedure and Guidance CP-2012 to complete this or any other course proposal form: to ensure the correct form is being used; for information on early considerations and timescales; for general guidance on the course approval process; and for notes on completing the form.

Course Title(s)
Biological Sciences with a Foundation Year Chemistry with a Foundation Year Environmental Science with a Foundation Year Pharmacy with a Foundation Year
School(s) of study & Faculty
SCI
Proposer & proposer's school
Ben Milner (CMP)
Proposed course start date <i>note 1</i>
September 2014

Prior approvals <i>note 2</i>	required?	received?
Prior LTC approval		
Prior Council approval		
External consultation <i>note 3</i>		
Independent external academic comment		
External examiner comment		
PSRB consultation/ input		
Other external consultation/ input (please list)		

This form is in 3 parts. Please complete all 3 parts:

- Part 1** **Summary and Rationale**
Part 2 **Business Case**
Part 3 **Academic Case including Programme Specification**

UEA LEARNING & TEACHING SERVICE

FULL COURSE PROPOSAL

Part 1 SUMMARY AND RATIONALE

Course One			
S1	a	SCHOOL(S) OF STUDY	BIO, CHE, ENV, PHA
	b	FACULTY or FACULTIES	SCI
	c	JOINT PROGRAMME? (ie owned/taught by more than one School)	YES <input checked="" type="checkbox"/>
			NO <input type="checkbox"/>
	d	NAME/S OF COURSE DIRECTOR/S (one from each School for Joint Programmes)	The Programme Director with overall oversight is Dr Ben Milner (SCI AD LTQ). Course Directors are: Dr Helen James (BIO) Dr Nigel Clayden (CHE) Dr Alan Bond (ENV) Dr James Desborough (PHA)
S2 <i>note S2a</i>	a	COURSE TITLE	Biological Sciences with a Foundation Year Chemistry with a Foundation Year Environmental Science with a Foundation Year Pharmacy with a Foundation Year
<i>note S2b</i>	b	COURSE CODE	TBD
<i>note S2c & S2d</i>	c	AWARD	BSc
	d	EXIT AWARD(S) AND TITLE(S)	Level 0: Transcript, no award Level 1: Certificate Higher Education Level 2: Diploma Higher Education Level 3: BSc
	e	FULL/PART-TIME (please specify)	Full-Time and Part-Time
	f	AVAILABLE FROM:	September 2014
S3 <i>note S3a</i>	a	PROFESSIONAL AWARD (if any)	N/A
	b <i>note S3b</i>	ACCREDITING/VALIDATING BODY (if relevant)	N/A
		Date when accreditation/validation may take place	
S4 <i>note S4</i>	LEVEL	Sub-degree (e.g. Cert. Dip.)	
		Undergraduate	<input checked="" type="checkbox"/>
		Integrated Masters	
		Masters	
		Other postgraduate (please specify)	

S5 <i>note</i> S5a	a	DURATION (years or months)	Four Years
<i>note</i> S5b	b	MODE OF ATTENDANCE (full-time, part-time, distance, other)	Full-Time
S6 <i>note</i> S6	PLACEMENT(S)/WORK-BASED LEARNING REQUIRED		YES
			NO
S7 <i>note</i> S7	RELEVANT SUBJECT BENCHMARK STATEMENT(S)		
S8 <i>note</i> S8	ENTRY REQUIREMENTS		<p>All applicants will be required to have GCSE English language and Mathematics (or equivalent) at a minimum of Grade C.</p> <p>The typical offer for students studying 'A' Levels will be CCC (excluding general studies and critical thinking).</p> <p>For Pharmacy, applications are welcome from pharmacy technicians holding NVQ Level 3 qualifications.</p>
S9	CAREER POSSIBILITIES		<p>The four courses with a foundation year will give students the opportunity to develop a range of skills which are highly valued by employers across a range of science subject areas.</p> <p>Biology Careers for biology graduates include working within industrial laboratories for brewing, drug development or food production, in medical laboratories or forensic science, in environmental assessment or conservation management, in fundamental research at universities or scientific institutes, in the teaching profession, scientific patenting or the media.</p> <p>Chemistry Careers for chemistry graduates include industries such as pharmaceuticals, foods, plastics, transport, healthcare, agrochemicals, education, science media and energy production. In addition, the application of chemical techniques is at the forefront of atmospheric research, forensic science and security and medical imaging.</p> <p>Environmental Sciences Careers for environmental science graduates includes areas such as environmental management and conservation, local and central</p>

		<p>government agencies, environmental consultancy, weather forecasting, government and university research, geophysical services, the energy sector, oil and gas industries and the water industry.</p> <p>Pharmacy Career prospects for pharmacists are excellent. In many areas of the UK, including East Anglia, there remains a shortage of pharmacists. There will be many excellent opportunities in community, primary care, hospital and industrial pharmacy for students graduating with a pharmacy degree.</p> <p>In addition to their regular teaching, students will participate in employability activities that are run within schools, by SCI and also by Careers and Employability.</p>
S10	JACS Subject Level Code(s) To be completed by the Planning Office following approval of the Business Case	
S11	UCAS ADMISSION CODE / COURSE CODE To be completed by the Planning Office following approval of the Business Case	
S12 <i>note</i> S12	FURTHER INFORMATION available via...	Ben Milner (b.milner@uea.ac.uk)
S13	COURSE HIGHLIGHTS (for publication)	
<i>note</i> S13	<p>The foundation year courses provide students who have not met the entry requirements of a degree course within the schools of Biological Sciences, Chemistry, Environmental Sciences or Pharmacy with an opportunity to gain the skills and knowledge necessary to progress on to a mainstream degree course within that school. This follows the same approach as the successful Applied Computing with a Foundation Year course run in the School of Computing Sciences.</p> <p>Over the course of the year students will study modules in a range of subjects that will prepare for a chosen degree course. These will be taken from a range of modules comprising biology, chemistry, mathematics and physics. For each of these subject areas an introductory module is offered in the Autumn Semester and this is followed by a second module in the Spring Semester.</p> <p>In addition to the specific academic modules, students in ENV and PHA will also take a school-based module that will focus on their chosen area of study.</p> <p>After completing the foundation year, students will have the opportunity to transfer to an alternative course of study given that marks are at a suitable level. For students who do not attain the transfer requirements, and provided they achieve at least 40% overall, they will remain on the course which includes the foundation year.</p>	

S14	RATIONALE FOR PROPOSAL
<i>note S14</i>	Please explain why you are proposing this/these new course(s) or these course amendments, and why this proposal is being offered at this time. See guidance notes for further indication of what to include in this section.
	<p>This proposal represents a change to the provision of SCI's foundation year courses. Currently SCI offers a Science with a Foundation Year (F008) (SCI-FY) course that allows transfer to BIO, CHE, ENV, MTH, NAT and PHA. Alongside this CMP has its own Applied Computing with a Foundation Year course. The proposal is to close the Science with a Foundation Year course and replace it with four school-specific courses that follow the model used by CMP, namely:</p> <p>BSc Biological Sciences with a Foundation Year BSc Chemistry with a Foundation Year BSc Environmental Science with a Foundation Year BSc Pharmacy with a Foundation Year</p> <p>These courses will share a set of level 0 modules from across the faculty, some of which will be compulsory and some optional, according to a school's requirements (please see Section PS1 for details).</p> <p>The rationale for making this change addresses issues with the current Science with a Foundation Year course.</p> <p>Issues with existing SCI-FY course</p> <p>The original course was set up as a widening participation initiative to encourage non-standard applicants (e.g. mature students and students who have not previously studied science) to UEA. However, over time it has become a 'resit' course for students who have not performed successfully at 'A' level.</p> <p>The current SCI-FY course has a low transfer success rate and a high failure rate. From the 2011 intake 36 students out of 120 either failed or withdrew in year 0 (30%). In addition, of those 120 students admitted 70 transferred to a standard 3 or 4 year course within a school across SCI – this is the desired outcome at the end of year 0. That left 14 students remaining on SCI-FY, which is not a desired outcome.</p> <p>Considering entry qualifications, 120 students were admitted to SCI-FY in 2012 with an A-level or equivalent. Of these, 80 students had less than CCC. Being able to bring these students to ABB level (typical admission level across SCI) is not feasible within 1 year which contributes to high failure rates.</p> <p>The relative weakness of students completing year 0 of the SCI-FY has meant that transfer requirements to schools within SCI have been set at very high levels. For example, transfer to BIO, CHE and ENV requires at least 65% and transfer to NAT and PHA requires at least 70%. This results in a large number of students (14 in 2011) who pass (>40%) but are unable to transfer (<65%).</p> <p>As currently run, the SCI-FY is operated largely from CHE. While this is satisfactory for students wishing to take a CHE course, it is less desirable for students who wish to transfer to another school as they lack exposure to that school. A further consequence is that FY modules risk not being aligned closely enough with other schools of study and can provide inadequate preparation.</p>

Proposed changes to address issues

Moving to school-specific courses will allow schools to control entry level and admissions and raise entry requirements to give students a better chance of progression.

Students will be allocated advisors from their own subject area and be integrated into their school of study one year earlier than previously.

Where possible, modules will be taught by the relevant school with less centralised teaching. This enables the modules to align more closely to the subject area and be more tailored to that school's requirements of a student.

The higher quality students, along with the better aligned modules, will allow schools to lower transfer requirements and therefore reduce the number of students who are unable to transfer.

To ensure entry of widening participation candidates, contextual criteria (similar to those of A104) will be used, alongside an interview, to determine whether an offer will be made. Contextual criteria will include mature students and care leavers, students with little previous experience of science and also students from underperforming high schools or with low parental / carer income. Please refer to the Recruitment Strategy for more details (Section BC1.2).

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FULL COURSE PROPOSAL

Part 2 BUSINESS CASE

BC1	ACADEMIC AND RECRUITMENT STRATEGY	Consult with HOS, Faculty Dean, PLN, ARM (including Admissions)
BC1.1	How does the proposal fit with the University's Corporate Plan?	
<i>note</i> <i>BC1.1</i>	<p>The foundation year will provide an excellent student academic experience with high levels of student academic engagement, and student contact with academic staff.</p> <p>The foundation year addresses key improvement targets in relation to the Student Educational Experience, associated with the current foundation year programme; in particular improving entry standards, retention and completion rates - as well as addressing genuine widening participation objectives and raising standards in the NSS.</p> <ol style="list-style-type: none"> Historically, the foundation year programme has proliferated from being used as a genuine widening participation pathway, to being used to hit student number targets, accepting students who have not reached the standard entry requirements for a BSc in any one of the Science Schools. The target markets for the reconfigured foundation year programmes would include students that come from a non-Science background, secondary schools which had 60% or less students achieving 5+ grade A*-C (or equivalent), care leavers and mature student over 21 with no previous experience of HE. Traditionally, students coming into the foundation year have chosen this route as they did not achieve A level results in Science subjects required for entry into a standard BSc in one of the Science schools. This inevitably results in lower entry standards from certain type of students. As a result of targeting students with non Science traditional A levels, but whom have higher grades, the mean entry standard will increase. The course profiles (and new ENV and PHA module) have been devised to specifically address retention issues with the current programme design. Each School will have their own course profile that is designed to equip its students with the specific skills and needs to help them progress and complete their studies. As such a School will have the opportunity to define and shape its students and their learning environment to a better standard than they were able to influence before. The targeted support given on the foundation year will enable students to enter at Level 1 more confident and better equipped to undertake honours level study than students enrolling directly from A-levels. Students who progress from the foundation year will set a benchmark for excellence on their continuing programmes. <p>From a combination of accepting students with a higher entry standard and tariff, along with modules re-aligned to schools (and school-specific modules for ENV and PHA), progression and as such completions should increase.</p>	
BC1.2	Proposed Recruitment Strategy	
<i>note</i> <i>BC1.2</i>	As an undergraduate degree, recruitment will be through UCAS. The courses will be advertised through the web and UCAS and will be included in relevant school Open Day presentations from summer 2013. The courses will be included in the	

	<p>prospectus and in the specific school brochures from 2015.</p> <p>These courses form a Widening Participation initiative and are designed for mature students, students who have not previously studied science at 'A' level and for students from underperforming secondary schools.</p> <p>Contextual Criteria We use contextual criteria for entry. Applicants must meet ONE of the following criteria:</p> <ul style="list-style-type: none"> • Out of full time education for at least 3 years prior to application. • Not previously studied more than one science (Chemistry, Biology, Physics or Mathematics) at 'A' Level or equivalent. • Been in Local Authority Care. • Secondary School had 60% or fewer students achieving 5+ grade A*-C GCSEs (or equivalent) including English and Maths in 2012 - Data from Department of Education website: www.education.gov.uk/schools/performance/ <p>Interviews All applicants will be invited for interview before offers are made to these courses.</p> <p>Entry Requirements All applicants are required to have GCSE English language and Mathematics (or equivalent) at a minimum of Grade C.</p> <p>The typical offer for students studying 'A' Levels will be CCC (excluding general studies and critical thinking) and BBC for PHA. For Pharmacy applications are welcome from pharmacy technicians holding NVQ Level 3 qualifications.</p>		
BC1.3	Is the proposal commercially sensitive?	YES	
		NO	✓
<i>note</i> BC1.3	If yes, what are the reasons?		
	NA		

BC2 <i>note</i> BC2	MARKET RESEARCH	Consult with Market Research team	
BC2.1	What other and type of institution offers identical and/or similar courses in the UK?		
	Institution	Course(s)	Guardian League table rank
	University of Birmingham	Chemistry with a Foundation Mathematics with a Foundation	30
	University of Durham	Biology with Foundation Computing with Foundation	7
	University of Essex	Biological sciences with a Foundation	50
	University of Hull	Computing science with a Foundation Environmental sciences with a Foundation	69
	Keele University	Applied Environmental Science with a	50

		Foundation Year Environmental stability with a Foundation Year Geosciences with a Foundation Year Mathematics with a Foundation Year	
	University of Leeds	Earth and environmental sciences with a Foundation Year	37
	University of Liverpool	Biological sciences with a Foundation Year Chemical sciences with a Foundation Year Computer Science with a Foundation Year Earth Sciences with a Foundation Year Mathematics with a Foundation Year	
	Loughborough University	Science and Engineering Foundation Studies Computer Science with a Foundation	11
	University of Manchester	Life sciences with a Foundation	41
	University of Newcastle	Mathematics with a Foundation	33
	Nottingham University	Science with a Foundation Year (specific subject)	26
	QMUL	Science and ENG Foundation Programme (specific subject)	36
	RHUL	Science with a Foundation option (specific subject)	39
	University of Southampton	Environmental sciences (with a Foundation Year)	22
	University of York	Environmental sciences (extended degree)	17
BC2.2	Are there any likely international competitors? (Please give brief details)		
	No		
BC2.3	What is the annual number of applicants currently applying nationally for similar courses?	Student numbers on SCI's existing Science with a Foundation Year course are typically 150+ students.	
BC2.4	What is the evidence for current and future demands for the course from <ul style="list-style-type: none"> • potential students? • employers (public services, private sector, the professions etc) 		
	<p>The existing SCI-FY course admitted 151 students in 2012 and 120 in 2011. This shows that demand exists for such four-year foundation programmes, even post the increased fee structure.</p> <p>The proposed suite of foundation year courses would in total aim to recruit 70 students, spread across the four schools. This represents a significant reduction in numbers but is justified by the aim within the new courses to increase the quality of the student intake.</p>		
BC2.5	Can current and projected demand be met from existing provision?		
	Nationally:	Yes	

	Regionally:	Yes
BC2.6	Where is/what are the competitive advantage(s) for UEA?	
	<p>The Faculty of Science has for many years been increasing its entry grades (minimum of ABB) for all courses, without the use of contextual data, to the detriment of widening participation initiatives. This approach will enable widening participation students to be recruited more fairly as it will use contextual data in determining access and will be targeted at mature students, students who have chosen the wrong 'A' levels for a degree in science and those students who come from an underperforming high school. This change in policy will also allow the course to be used positively in our OFFA agreement.</p> <p>By having separate foundation year entry courses, it will be clearer to applicants where the qualification can lead and will allow applicants to focus on subject areas of interest to them at an earlier stage of their studies which should enable higher attainment by the students and reduced drop-out. It will additionally allow the incorporation of the course in School specific marketing making the course more visible to applicants and teachers. For example, currently it is only advertised on the CHE website, the school holding the SCI Foundation Year, and only in a Science with a Foundation year brochure. With the new course it would feature on all School web pages and be incorporated in the School brochures.</p> <p>This course builds directly on our long-running Science with a Foundation year programme, but additionally allows tailored teaching and mentoring from academics within the desired school of study. Additionally, by introducing school specific courses, schools will take ownership of the programme and enhance the teaching and assessment offered to students.</p>	

BC3 <i>note</i> <i>BC3</i>	MARKET DEMAND AND RECRUITMENT	Consult with the Careers Centre
BC3.1	What graduate career opportunities may be available?	
	<p>Biology Careers for biology graduates include working within industrial laboratories for brewing, drug development or food production, in medical laboratories or forensic science, in environmental assessment or conservation management, in fundamental research at universities or scientific institutes, in the teaching profession, scientific patenting or the media.</p> <p>Chemistry Careers for chemistry graduates include industries such as pharmaceuticals, foods, plastics, transport, healthcare, agrochemicals, education, science media and energy production. In addition, the application of chemical techniques is at the forefront of atmospheric research, forensic science and security and medical imaging.</p> <p>Environmental Sciences Careers for environmental science graduates includes areas such as environmental management and conservation, local and central government agencies, environmental consultancy, weather forecasting, government and university research, geophysical services, the energy sector, oil and gas industries and the water industry.</p> <p>Pharmacy</p>	

	Career prospects for pharmacists are excellent. In many areas of the UK, including East Anglia, there remains a shortage of pharmacists. There will be many excellent opportunities in community, primary care, hospital and industrial pharmacy for students graduating with a pharmacy degree.
BC3.2	Who (externally) has been consulted about the proposals (e.g. Professional Associations, employers' groups, PSRBs)?

BC4	RESOURCES: STUDENT NUMBERS AND TUITION FEES	Consult with HOS, PLN, Faculty Dean, FFM	
BC4.1	Student Numbers		
a	Proposed student target intake		
<i>note BC4.1a</i>	FT (Home/EU)	70 (23 BIO, 11 CHE, 21 ENV, 15 PHA)	
	FT (International)		
	PT (Heads)		
	DL (Heads)		
	Minimum viable intake (ftes)	40 (in total)	
	Maximum viable intake (ftes)	80 (in total)	
b	Are the student numbers:		
<i>note BC4.1b</i>	a) available via redistribution within the School? <i>Consult the Head of School</i>	YES	
		NO	✓
	b) available via redistribution with the Faculty? <i>Consult the Dean of Faculty</i>	YES	✓
		NO	
	c) additional numbers required? <i>Consult the Planning Office (PLN)</i>	YES	
		NO	✓
BC4.2	Tuition Fees		
	Please select the relevant fee schedule:		
	a) Standard Home/EU/International	✓ (International - lab based)	
	b) Full-cost <i>Please consult with FFM</i>		
	c) Other <i>Please provide brief details</i>		

BC5	IMPACT		
BC5.1 <i>note BC5.1</i>	EQUALITY AND DIVERSITY	Consult with Equality & Diversity Manager	
a	Does the course and/or School cover a subject area(s) which traditionally attract(s) a very specific or narrow student profile?	YES	
		NO	✓

b	If yes, what steps will be taken to attract non-traditional students to the course/School? (Aspects to consider include: age, disability, ethnicity (home and international), gender and socio-economic group.)		
	NA		
BC 5.2 <i>note</i> BC5.2	IMPACT ON CURRENT STUDENTS AND/OR APPLICANTS		
a	For changes to existing programmes, will any current students or applicants be affected by these changes?	YES	
		NO (go to 5.3)	✓
b	Evidence of consultation of current students and written consent obtained Please briefly describe what consultation has taken place and what responses there have been. Is there full support from all members of the relevant student cohort(s)?		
	NA		
c	Informing applicants What arrangements have been made (for informing applicants who may be affected by any change(s)? Written notification, including advice about any alternative options that may be given, must be sent to applicants holding unconditional/conditional firm or conditional insurance offers.		
	NA		
BC5.3 <i>note</i> BC5.3	WHAT IS THE IMPACT / WHAT ARE THE RESOURCE IMPLICATIONS OF THE PROPOSAL ON ACADEMIC STAFF?	Consult with HOS, Dean of Faculty	
	In SCI's existing foundation year nearly all teaching is carried out by CHE staff. To align better with other schools, biology teaching will be moved to BIO. There will be no net gain in staff requirements across SCI.		
a	Please give an indicative number of teaching hours required to deliver the course in any one year		
b	Are new appointments required?	YES	
		NO	X
c	If yes, how many of what type (eg Teaching and Scholarship, Teaching and Research) and at what level?		
	NA		
d	What is the source of funding for new academic staff?		
	NA		
e	Are there any implications outside the sponsoring School/s e.g. service teaching, by other Schools of Studies?		
	No.		
f <i>note?</i>	Are any other teaching adjustments required? For example, will new modules be introduced, other modules withdrawn or combined? (Please include code, credit value and level/year of any new modules and/or modules to be withdrawn or combined).		

	<p>The existing (2013 NAM compliant) Science with a Foundation Year comprises 240 credits (12 x 20 credit modules).</p> <p>The proposal will see that reduced to 220 credits plus the introduction of two 20 credit school-specific modules for ENV and PHA:</p> <p>Study skills in Environmental Science Study skills in Pharmacy</p>		
BC5.4 <i>note</i> BC5.4	IS ANY COURSE(S) TO BE WITHDRAWN?	YES	X
		NO	
	If YES, please specify UCAS Code(s) / Course codes and session from which course(s) withdrawn?	Science with a Foundation Year (F008) will be withdrawn with last admissions in 2013.	

BC6	PHYSICAL RESOURCES		
BC6.1 <i>note</i> BC6.1	What are the recurrent or non-recurrent expenditure to be incurred in respect of:		
a	Classroom and study facilities?	Already exists for SCI with FY	
b	Other equipment?	Already exists for SCI with FY	
c	Consumables?	Already exists for SCI with FY	
d	Computer equipment?	Already exists for SCI with FY	
BC6.2	What additional books/journals/electronic resources other than those already available will be required year by year until steady state is reached?		
	Given that Science with a Foundation Year has run previously, no new resources are anticipated. The new study skills modules will not require any extra resources.		
BC6.3	Are there any other special arrangements on which this course proposal will depend? (E.g. placements, year abroad).	YES	
		NO	X
	If Yes, please give details of likely costs/whether appropriate agreements are in place/have to be drawn up?		
	NA		
BC6.4	Are there any start-up costs (e.g. any initial publicity and promotion?)	YES	
		NO	X
	If yes, please give details:		
	NA		

BC7 <i>note</i> <i>BC7</i>	IMPACT / RESOURCE IMPLICATIONS FOR OTHER UNIVERSITY SERVICES	
Please circulate Parts 1 & 2 to the following for their comments (if any). Comments to be returned within 10 working days.		
<i>note</i> <i>BC7</i>	What is the impact of the proposal on support staff and resources in the office for which you are responsible?	
Date of circulation:	25th March 2013	
BC7.1	Dean of Students (DOS)	
	No response received	
BC7.2	Deputy Dean of Students (accommodation)	
	The introduction of the proposed courses combined with the closure of SCI with a FY will have a marginally positive impact on residences.	
BC7.3	Director of Information Services (ITCS)	
	No response received	
BC7.4	Director of Library Services (LIB)	
	We do not anticipate any significant implications for Library materials but we do anticipate an impact on the number of Information Skills sessions that are provided by our Faculty Librarians. With this proposal we anticipate that the Library will be asked to run sessions for Foundations students within each school and we urge the earliest engagement with the course convenors to get these booked in	
BC7.5	Director of Learning & Teaching Service (LTS)	
	The proposals will have a negligible effect on LTS, although some thought will have to be given to the most effective way to support the courses: will they be looked after within the separate School teams within the Hub, or all within one team, for example.	
BC7.6	Director of Admissions (ARM)	
	No response received	

BC8	ADDITIONAL COMMENTS	
Please circulate Parts 1 & 2 to the following for their comments (if any). Comments to be returned within 10 working days.		
<i>note</i> <i>BC8</i>	Is there anything further to add to the proposal from the perspective of your service and expertise?	
Date of circulation:	25th March 2013	

BC8.1	Market research (on Section BC2)
	No response received
BC8.2	Careers (on Section BC3)
	<p>Possible Career options and paths of progression from each respective school as per, but not exclusive to, BC3.1.</p> <p>Maintaining access to a foundation year provides an important developmental stage for many people wishing to further their careers and progress into graduate level jobs. An increasing range and level of jobs demand applicants to possess a degree and for prospective students employment statistics indicate the importance of developing ones career prospects by entering H.E with 14% more graduates in employment than non-graduates (www.ons.gov.uk 2013). Science particularly may appeal to those wishing to make a career change with science graduates earning higher than the average graduate wage across all subject areas (www.ons.gov.uk 2013).</p> <p>Potential students may require access to the Science schools via this medium due to previous poor career decision making, a change of career or if they hold inappropriate A-level subjects. Access for International students and mature students in particular is increased through the availability of a foundation year.</p> <p>Integration with the relevant school from year 0 enables the student to build contacts and knowledge around their field of interest and begin to explore and discover specific areas of interest which may influence their career decision making and management. Teaching from relevant school staff may contribute to the student's awareness of their sector and industry, enabling them to make clearer decisions, earlier on.</p> <p>Students will be able to access C & E provision and events from an early stage, enabling them to gain transferable employability skills earlier in their University life making them attractive candidates for Internships, placements and graduate level jobs which they may become involved in before year 1.</p>
BC8.3	Equality & Diversity Manager (on Section BC5.1)
	No response received
BC8.4	Head of Planning (PLN) (on full Business Case)
	No response received
BC8.5	Faculty Finance Manager (on full Business Case)
<i>note</i> BC8.5	There are no financial impacts.

BC9	PROPOSER'S RESPONSE TO COMMENTS IN BC7 & BC8 ABOVE
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<i>note</i> BC9	Discussion have taken place with LTS with regard to supporting the courses within the Hub. The preferred method is to mirror the academic management of the course, with someone from LTS having oversight of all five course (including CMP) and then school-specific administrative support.
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BC10 APPROVAL OF THE BUSINESS CASE			
	APPROVAL/SIGNATURES	Approved Yes/No?	Date
BC10.1	School Director of Learning, Teaching and Quality:		
BC10.2	Head of School (on behalf of School Board):	Yes	2 nd May 2013
BC10.3	Dean of Faculty (on behalf of Faculty Executive):	Yes	2nd May 2013
BC10.4	Council (if relevant)		
BC10.5	LTC (if relevant)		

UEA LEARNING & TEACHING SERVICE

FULL COURSE PROPOSAL

Part 3 ACADEMIC CASE

AC1	COURSE MANAGEMENT INFORMATION			
AC1.1	REGULATORY FRAMEWORK (please tick all that apply)			
	NAM for Undergraduate Courses			✓
	Graduate Diplomas			
	Integrated Masters			
	PGCE			
	NAM for Postgraduate Taught Programmes			
	Postgraduate Research			
	Certificate/Diploma in Continuing Education			
AC1.2a	Is the course as a whole assessed on a pass/fail basis?	YES		NO ✓
AC1.2b	Are any modules assessed on a pass/fail basis?	YES		NO ✓
AC1.2c	If so, how many modules and what is the credit volume for each module?			
	NA			

AC2 <i>note</i> AC2	(For undergraduate or integrated masters programmes only) Please select only from the permitted options		
	Weighting for degree classification:	Exit Award (please indicate: e.g. CertHE, DipHE)	
	Stage 0	0%	
	Stage 1	0%	CertHE
	Stage 2	40%	DipHE
	Stage 3	60%	BSc
	Stage 4		
	Stage 5		
	Stage 6		
	Stage 7		

AC3	BOARD OF EXAMINERS			
AC3.1	Is there an existing Board of Examiners?	YES	X	NO
AC3.2a	If YES, which existing board will be responsible for the course?	The existing board for SCI with a Foundation Year is the CHE board. From 2014 the four FY courses will go to their respective school exam boards, although a pre-meeting will be held to consider the five FY courses		

		(including the existing CMP FY course) to ensure consistency and to identify any issues.			
AC3.2b	If NO, please enter details for new board of examiners	NA			
AC3.3a	Are any new external examiner(s) required?	YES	<input type="checkbox"/>	NO	<input checked="" type="checkbox"/>
AC3.3b	If yes, how many?	NA			



PS	PROGRAMME SPECIFICATION	
<i>note PS</i>	This part of the form will serve a dual purpose. Please read the guidance note carefully before completing	
PS1 COURSE PROFILE		<i>note PS1</i>

Course profiles across the four FY courses share a common set of modules. Different combinations form compulsory and option ranges. For all students a 60:60 credit balance is required.

Level 0

Module Code	Credits	Module Title	Teaching period	BIO-FY	CHE-FY	ENV-FY	PHA-FY	New / amended / existing
BIO-XXXA	20	Introductory Biology	Sem 1	Compulsory	Option B	Option B	Compulsory	Existing
CHE-0004A	20	Introductory Chemistry	Sem 1	Compulsory	Compulsory	Option B	Compulsory	Existing
CHE-0011A	20	Introductory Physics	Sem 1		Option B	Option B		Existing
CHE-0007A	20	Foundation Mathematics	Sem 1	Option A	Option A	Option A	Option A	Existing
MTHB0001A	20	Basic Mathematics I	Sem 1	Option A	Option A	Option A	Option A	Existing
BIO-XXXB	20	Further Biology	Sem 2	Compulsory	Option B	Option B	Compulsory	Existing

CHE-0003B	20	Further Chemistry	Sem 2	Compulsory	Compulsory	Option B	Compulsory	Existing
CHE-0010B	20	Further Physics	Sem 2		Option B	Option B		Existing
CHE-0008B	20	Further Foundation Mathematics	Sem 2	Option A	Option A	Option A		Existing
MTHB0002B	20	Basic Mathematics II	Sem 2	Option A	Option A	Option A		Existing
ENV-0XXXB	20	The Science/Environmental Policy Interface	Sem 2			Compulsory		New
PHA-0XXXB	20	Introduction to Pharmacy Skills	Sem 2				Compulsory	New

PS1 COURSE PROFILE - *continued**note PS1*

Course profiles for levels 1, 2 and 3 follow existing courses C100 (BIO), F100 (CHE), F900 (ENV), B231 (PHA). Please see attached appendices for details.

PS2 MAPPING LEARNING OUTCOMES*note PS2*

Mapping learning outcomes – please list learning outcomes and enter module code against assessment type STAGE 0 learning outcomes	Assessment type								
	Essay	Lab report	Course test	Exam	Project/ Dissertation/ Report	Oral Presentation	Assessment of practice	Fieldwork	Questions
Develop a foundational knowledge of biology (for students taking BIO-XXXXA and/or BIO-XXXXB)	BIO-XXXXA	BIO-XXXXA	BIO-XXXXA	BIO-XXXXB	BIO-XXXXB			BIO-XXXXA	
Develop a foundational knowledge of chemistry (for students taking CHE-0004A and/or CHE-0003B)		CHE-0004A; CHE-0003B	CHE-0004A; CHE-0003B	CHE-0003B					
Develop a foundational knowledge of physics (for students taking CHE-0011A and/or CHE-0010B)		CHE-0011A; CHE-0010B	CHE-0011A	CHE-0010B				CHE-0011A	
Develop a foundational knowledge of mathematics			MTHB 0001A	MTHB 0002B					MTHB 0001A; MTHB 0002B
Develop a foundational knowledge of environmental science	ENV-0XXXB	ENV-0XXXB		ENV-0XXXB				ENV-0XXXB	

Develop a foundational knowledge of pharmacy		PHA-0XXXB							PHA-0XXXB
Develop practical laboratory skills		BIO-XXXXA; CHE-0004A; CHE-0003B; CHE-0011A; CHE-0010B			BIO-XXXB				
Develop numerical problem solving skills		BIO-XXXXA; CHE-0004A; CHE-0003B; CHE-0011A; CHE-0010B	CHE-0011A; MTHB 0001A	CHE-0010B; MTHB 0002B	BIO-XXXB			CHE-0011A	MTHB 0001A; MTHB 0002B
Develop basic skills in scholarship and academic writing		BIO-XXXXA; CHE-0004A; CHE-0003B; CHE-0011A; CHE-0010B							
Develop skills in handling and processing data		BIO-XXXXA; CHE-0004A; CHE-			BIO-XXXB				

		0003B; CHE- 0011A; CHE- 0010B							
Develop presentation skills		BIO- XXXA; CHE- 0004A; CHE- 0003B; CHE- 0011A; CHE- 0010B			BIO- XXXB				
Develop group working and communication skills		BIO- XXXA; CHE- 0004A; CHE- 0003B; CHE- 0011A; CHE- 0010B; ENV- 0XXXB ; PHA- 0XXXB						ENV- 0XXXB	

PS2 MAPPING LEARNING OUTCOMES - continued
note PS2

Please refer to course documents located on the relevant blackboard site for each of the four degree programmes to see outcomes for Levels 1, 2 and 3.

PS3 PROGRAMME COHERENCE AND FEEDBACK CYCLES*note PS3***PS3.1 Vertical and horizontal integration**

Please explain how this programme is designed to deliver a coherent body of knowledge, skills and understanding. Comment on vertical and horizontal integration, in terms of complementarity and progression of modules within and across stages.

note PS3.1

Students on the foundation year courses will demonstrate a set of knowledge, skills and attributes associated with science. As well as academic knowledge, these will also include practical and numerical skills, all of which are necessary preparation for later study. Following the foundation year, students will be able to continue on their Biology/Chemistry/Environmental Sciences/Pharmacy with a Foundation Year course or transfer to another course (normally within their own school, but across school transfers will be possible) provided they meet the necessary transfer requirements.

The four foundation year courses are designed to not be too concentrated in any one area of science and instead aim to provide students with a general foundation in key science subjects, with a slight bias to a student's chosen area of study. In this way students gain a wide appreciation of science as a whole. A good understanding of mathematics is critical to all sciences and therefore all students are exposed to at least one semester of mathematics. Similarly, practical laboratory skills are also essential and these are provided in many of the available modules.

PS3.2 Feedback cycle

Please explain how assessments and feedback / feed forward support the coherence of the programme. Comment on number and types of assessment, both formative and summative; the types and format of feedback students will receive; and their sequencing. How will assessments and feedback impact on subsequent modules?

note PS3.2

A combination of formative and summative assessments will be used throughout the foundation year. Formative feedback will be emphasised in the first semester and all modules will have 100% coursework assessment rather than examination. The second semester will also have an emphasis on coursework, formative and summative, but will also contain an examination component that ranges from 50% to 80% depending upon the module – more mathematical subjects will have a higher exam weighting.

Given the highly practical nature of most modules, lab working will form a significant component of a student's contact hours. Feedback will be continual in labs, with students receiving on-going feedback during classes from both lecturers and TAs. Similarly, in mathematics, seminar working will provide continual feedback on work.

PS4	EXAMINATIONS		<i>note PS4</i>
	Written	Practical (e.g. OSCES and OSPES)	
How many modules will include an exam element?	6 – students will take some of these dependent on course/options		
How many hours of exams are there in Stage 0? (if applicable)	11 – students will take some of these dependent on course/options		
How many hours of exams are there in Stage 1?	Please refer to school-specific course information for NAM		
How many hours of exams are there in Stage 2?	Please refer to school-specific course information for NAM		
How many hours of exams are there in Stage 3?	Please refer to school-specific course information for NAM		
How many hours of exams are there in Stage 4? (if applicable)	NA		
How many hours of exams are there in Stage 5? (if applicable)	NA		
How many hours does the programme (as a whole) include?	Please refer to school-specific course information for NAM		

PS5	EQUALITY		<i>note PS5</i>
PS5.1	How do the admissions criteria ensure equality of opportunity for all applicants?		
	<p>The aim of the courses with a foundation year is to widen participation to UEA degrees for non-traditional learners. As such we will use easily measurable contextual data during the admissions process to ensure that students who have been disadvantaged during their schooling, have taken time out or have incorrect qualifications for direct entry to one of our science programmes. All students will be interviewed prior to admission (procedures will be put in place to allow telephone interviews for those unable to travel to UEA)</p>		
PS5.2	What steps have been taken to ensure an inclusive curriculum?		

	The curriculum is designed to give a rather general foundation in science that does not overspecialise at level 0. This aims to give students an appreciation of the linkage between sciences and the need for cross-discipline knowledge. This also allows emphasis of fundamental skills such as numerical skills, practical skills, report writing and communication. Some specialisation will take place at level 0, but this is generally reserved more for later years. Not having an overly specialised foundation year also gives students an opportunity to change direction to a different school at the end of the foundation year if so desired.
PS5.3	In what ways do learning and teaching and assessment methods ensure inclusivity and equality of opportunity?
	A broad range of assessment methods will be used across the various level 0 modules. These range from traditional examinations to written reports to practical laboratory demonstrations. These test different skills, all of which are important in science. Students will spend periods of time working both individually and in groups and again these will develop basic skills needed in science.

AC4	MODULE OUTLINES FOR EXISTING CORE AND COMPULSORY MODULES	
<i>note</i> AC4	Number of existing CORE AND COMPULSORY modules	12
	Module outlines attached? (Appendix 1)	

AC5	MINOR CHANGES TO EXISTING MODULES	
<i>note</i> AC5	Please list all existing modules, Core, compulsory and optional, to which you are proposing minor changes	
Module Code	Module Title	Minor changes proposed

AC6	NEW MODULES	
<i>note</i> AC6	How many new modules are being proposed?	2
Please complete a table AC6.x for each proposed new module		

AC6.1	NEW MODULE	
Module Title	The Science/Environmental Policy Interface	
Level	0	

Credit Value		20	
Teaching period, eg Semester 1, Year-long		Semester 2	
Likely Module Organiser	Prof Peter Brimblecombe		
Module Type (eg EX/CW/WW/PR etc)		EX	
Does the Module include an Exam? Yes/No	Yes	How long will the exam be? (ie 1, 2 3 hours)	1
Module Marking Scheme (Please tick as appropriate)	Pass/Fail?	No	Percentage marking? Yes
Proposed Module Code	TBA		
Module Delivery (eg distance-learning campus based, work placement)	Campus based		
Brief Description	The module will consist of a large practical project with a set of lectures to provide background. Some 20-30 lectures will address the skills required by the project. The nature of this core project is likely to plan a 'science walk' for the UEA campus/ building stone, ornaments.		
Aims	The module will show how the subjects interact to produce, and resolve, environmental issues. It should have a significant practical element that attempts to interface academic/science issues with environmental decision making.		
Key Reading (2-5 key texts or resources for targeted Library expenditure/purchase)	Provisional reading list is: O'Riordan, T, (editor). (1999), <i>Environmental Science for Environmental Management</i> . (Prentice Hall, Harlow). Richard B. Primack (2008). <i>A Primer of Conservation Biology</i> . 4th Edition. Sinauer Associates, Mass. (paperback). http://www.sinauer.com/detail.php?id=6922 J.E. Andrews, P. Brimblecombe, T.D. Jickells, P.S. Liss, B.J. Reid. Blackwell, Introduction To Environmental Chemistry Second Edition Smith, G.A. and Pun, A. "How does the Earth work? Physical Geology and the Process of Science". (2nd Ed. 2009). Prentice Hall.		

AC6.2	NEW MODULE
Module Title	Introduction to Pharmacy Skills
Level	0

Credit Value		20	
Teaching period, eg Semester 1, Year-long		Semester 2	
Likely Module Organiser	Laura Ellis & Paul McDermott		
Module Type (eg EX/CW/WW/PR etc)		CW	
Does the Module include an Exam? Yes/No	No	How long will the exam be? (ie 1, 2 3 hours)	N/A
Module Marking Scheme (Please tick as appropriate)	Pass/Fail?	No	Percentage marking? Yes
Proposed Module Code	TBA		
Module Delivery (eg distance-learning campus based, work placement)	Campus based		
Brief Description	This module will introduce students to the essential study skills and approaches used in pharmacy education. It will focus on the fundamentals of developing a reflective practitioner with knowledge of basic principles of physical pharmacy.		
Aims	<ul style="list-style-type: none"> • Demonstrate basic oral presentation skills • Demonstrate the ability to perform basic calculations without a calculator • Demonstrate the concept of continuing professional development and reflective practice • Demonstrate the ability to work in a team to conduct self-directed learning in a problem based learning scenario 		
Key Reading (2-5 key texts or resources for targeted Library expenditure/purchase)	<ul style="list-style-type: none"> • British National Formulary 		

AC 7 <i>note</i> AC7	DEFINED CHOICE
How do you envisage 'Defined Choice' working for the programme in question? Please specify for each year of the programme.	
<p>There will be no defined choice at level 0. The range of modules studied is specified by the school and is necessary to ensure knowledge ready for level 1 study.</p> <p>Choice will be available in later years, dependent on the course taken.</p>	

AC8 <i>note</i> AC8	JOINT COURSES		
	Is the proposed course is a joint course?	YES	x
		NO	
	If YES, how will the student experience be managed?		
	Oversight of the set of five foundation year courses (including the existing course in CMP) will be undertaken by the Programme Director who will work closely with the five Course Directors.		

AC9	COMMENTS/FEEDBACK FROM EXTERNAL PROFESSIONALS		
<i>note</i> AC9	Please provide a summary of external professional feedback received. Append full reports as Appendix 2		

AC10	COMMENTS ON ACADEMIC CASE AND PROGRAMME SPECIFICATION		
<i>note</i> AC10	Please circulate Parts 1, 3 & 4 to the following for their additional comments (if any). Comments to be returned to proposer within 10 working days.		
	Date of circulation:		
AC10.1	Head of Learning & Teaching Service (LTS)		
	<p>This reconfiguration of the current SCI-FY into separate programmes is very welcome and promises to be of great benefit to students. The approach to recruitment and course design promises to combine Widening Participation concerns with making sure the students recruited can enjoy and benefit from the course. The students will be properly integrated into their chosen Schools from the start, but will still experience the camaraderie of being part of a large cohort of FY students. The new ENV and PHA FY modules are a very helpful addition for students choosing ENV and PHA degrees.</p> <p>The arrangements for feedback and formative assessment will be beneficial to students, and the decision to use coursework for the assessment of Semester 1 modules is sensible, particularly as the Semester 2 modules, which build on these, will be examined. The range of assessment types and the opportunities for group work are to be commended.</p> <p>For those students remaining on the 4-year (with a FY) course in their chosen subject, the course profiles will be much simpler than the current SCI-FY profile, giving the students greater clarity and eliminating some of the stress SCI-FY students currently experience</p>		

when they are not able to transfer.

For those students who fail to transfer, the progression requirement for remaining on the 4-year (with a FY) course is 40% (ie to pass all modules with no further requirements in terms of aggregate mark); this relates to a University stipulation that any student who passes the year is not made to withdraw. It is to be hoped that not too many students only narrowly meet this requirement and then fail later as the course becomes more challenging – it's not a kindness to allow students to progress if they end up having to withdraw later without a degree (having spent considerable time, money and effort). If this happens, given that these progression requirements cannot be altered by the Faculty, the Faculty may have to look again at the admissions criteria or the assessment strategy for Year 0.

Julia Jones,

Project Co-ordinator, NAM

AC10.2	Equality & Diversity Manager
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No response received

AC11	PROPOSER'S RESPONSE TO COMMENTS IN AC9 & AC10 ABOVE
<i>note</i> AC11	We also have concerns about the 40% progression requirement and how this compares to a student achieving, for example, ABB as entry to year 1. Over the existing SCI-FY course, admissions criteria will be improved and the assessment strategy more robust. The requirement to progress at 40% is a university regulation and at present we are not able to change this.

AC12	APPROVAL OF THE ACADEMIC CASE	
<i>note</i> AC12	APPROVALS	PRINT NAME, SIGN AND DATE
AC12.1	Head of School	
	Approved:	Prof D Edwards Prof D Russell Prof M Searcey Prof D Stevens Prof J Andrews 2 nd May 2013
	Approved with amendments:	
	Rejected:	
AC12.2	Faculty Associate Dean (for Faculty LTQC)	
	Approved:	Prof G McKeown (in place of Dr B Milner) 2 nd Many 2013

	Approved with amendments:	
	Rejected:	

Appendix A – levels 1, 2 and 3 course profiles

BIO – C100

Year 1U

Students at the appropriate level will be transferred from BIO-4008Y Skills for Biologists to BIO-4010Y Skills for Biologists with Higher Maths during Autumn Semester 2013. Students at the appropriate level will be transferred from BIO-4009Y Foundations for Chemistry and Physiology to BIO-4011Y Foundations for Chemistry and Physiology with Higher Chemistry during Autumn Semester 2013.

Compulsory Modules (120 credits)

Module	Description	Assessment	Credits	Period	Sub-slot
BIO-4001A	BIODIVERSITY	WW	20	SEM1	DD
BIO-4002B	EVOLUTION, BEHAVIOUR AND ECOLOGY	WW	20	SEM2	DD
BIO-4003A	FUNDAMENTALS OF MOLECULAR BIOLOGY AND GENETICS	WW	20	SEM1	BB
BIO-4004B	FUNDAMENTALS OF CELL BIOLOGY AND BIOCHEMISTRY	WW	20	SEM2	BB
BIO-4008Y	SKILLS FOR BIOLOGISTS	WW	20	YEAR	AP/AL
BIO-4009Y	FOUNDATIONS FOR CHEMISTRY AND PHYSIOLOGY	CW	20	YEAR	A3,A5,A6,A7,A8,A9

Year 2U

Options Range A

Students will select 100 credits from the following modules:

Module	Description	Assessment	Credits	Period	Sub-slot
BIO-5002A	BIOCHEMISTRY	WW	20	SEM1	AA
BIO-5003B	MOLECULAR BIOLOGY	WW	20	SEM2	AA
BIO-5004A	HUMAN PHYSIOLOGY	WW	20	SEM1	DD
BIO-5005B	CELL BIOLOGY	WW	20	SEM2	DD
BIO-5006A	PLANT BIOLOGY	WW	20	SEM1	BB
BIO-5008B	EVOLUTIONARY BIOLOGY	WW	20	SEM2	EE
BIO-5009A	GENETICS	WW	20	SEM1	CC
BIO-5010B	BEHAVIOURAL ECOLOGY	WW	20	SEM2	CC
BIO-5012Y	BIOLOGY IN SOCIETY	CW	20	YEAR	Autumn: EJL, Spring: CL

BIO-5013A	FIELD ECOLOGY	PR	20	SEM1	C(CL)
BIO-5014B	COMMUNITY, ECOSYSTEM AND MACRO-ECOLOGY	WW	20	SEM2	AGJ
BIO-5015B	MICROBIOLOGY	WW	20	SEM2	BB

Options Range B

Students are required to select a further 20 credits, which may be from any Options Range referred to above or from the defined choice of modules included in the Options Range below.

Students will select 20 credits from the following modules:

Module	Description	Assessment	Credits	Period	Sub-slot
CHE-5*	Any module beginning CMP-5				
ENV-5*	Any module beginning LCSS				
MTHA5*	Any module beginning PHA-5				
SCI-5*	BIO-6001A	MOLECULAR ENZYMOLOGY IN BIOLOGY AND MEDICINE	WW	20	SEM1 CC
BIO-6003A	CELLULAR SIGNALLING	WW	20	SEM1	EUG
BIO-6004A	MICROBIAL BIOTECHNOLOGY	WW	20	SEM1	BGJ
BIO-6006B	CELL BIOLOGY AND MECHANISMS OF DISEASE	WW	20	SEM2	BS
BIO-6007B	MOLECULAR PLANT-MICROBE INTERACTIONS	WW	20	SEM2	AJL
BIO-6008B	EVOLUTIONARY BIOLOGY AND CONSERVATION GENETICS	WW	20	SEM2	AA
BIO-6009A	CANCER BIOLOGY	WW	20	SEM1	B1,B2,B9
BIO-6010B	INFECTION AND IMMUNITY	WW	20	SEM2	DL
BIO-6011B	SOCIAL EVOLUTION	WW	20	SEM2	CGJ
BIO-6012A	MOLECULAR AND CELLULAR PRINCIPLES OF DEVELOPMENT	WW	20	SEM1	B3,B4,B6
BIO-6013A	GENOMES, GENES AND GENOMICS	WW	20	SEM1	DD
BIO-6014B	FOOD DOMESTICATION AND SUSTAINABILITY	WW	20	SEM2	EE
BIO-6015A	ORGANISMS AND ENVIRONMENT	WW	20	SEM1	ER
BIO-6016A	HOST-PARASITE INTERACTIONS	WW	20	SEM1	AGJ
BIO-6017A	EVOLUTION IN HEALTH AND DISEASE	WW	20	SEM1	AJL
BIO-	SCIENCE COMMUNICATION	CW	20	YEAR	CC

[6018Y](#)[BIO-6019Y](#)

RESEARCH PROJECT

PR

40

YEAR U

[BIO-6023Y](#)

BIOLOGY RESEARCH SKILLS

PR

40

YEAR U

Options Range B

Students are required to select a further 20 credits, which may be from any Options Range referred to above or from the defined choice of modules included in the Options Range below.

Students will select 20 credits from the following modules:

Module	Description	Assessment	Credits	Period	Sub-slot
CHE-5*	Any module beginning CHE-6				
CMP-5*	Any module beginning CMP-6				
ENV-5*	Any module beginning ENV-6				
LCSS*	Any module beginning MTH*6				
MTHA5*	Any module beginning PHA-5				
PHA-6*	Any module beginning SCI-5				

CHE – F100**Year 1U**

Compulsory Modules (100 credits)

Module	Description	Assessment	Credits	Period	Sub-slot
CHE-4001Y	CHEMISTRY LABORATORY (A)	CW	20	YEAR	S1 B1-B8*E4; S2 B1-B3*E4*C5-C8
CHE-4101Y	CHEMISTRY OF CARBON-BASED COMPOUNDS	WW	20	YEAR	C (CC)
CHE-4301Y	BONDING, STRUCTURE & PERIODICITY	WW	20	YEAR	C (CC)
CHE-4201Y	ENERGETICS AND SPECTROSCOPY	WW	20	YEAR	A(AA)
CHE-4050Y	SKILLS FOR CHEMISTS	CW	20	YEAR	A(AA)

Options Range A

Students will select 20 credits from the following modules:

Module	Description	Assessment	Credits	Period	Sub-slot
CHE-4090Y	SPECIAL TOPICS IN CHEMISTRY	CW	20	YEAR	AG
CHE-4701Y	FORENSIC CHEMISTRY - COLLECTION AND COMPARISON	CW	20	YEAR	C in S1, D in S2.
CHE-4801Y	TOPICS IN PHYSICS	CW	20	YEAR	E(EE)
ENV-4002Y	MATHEMATICS FOR SCIENTISTS A	WW	20	YEAR	DD

Year 2U

Compulsory Modules (80 credits)

Module	Description	Assessment	Credits	Period	Sub-slot
CHE-5101A	ORGANIC CHEMISTRY	WW	20	SEM1	C (CC)
CHE-5201Y	PHYSICAL CHEMISTRY I	WW	20	YEAR	D (DD)
CHE-5301B	INORGANIC CHEMISTRY	WW	20	SEM2	C (CC)
CHE-5202Y	MOLECULAR STRUCTURE AND ENERGY LEVELS	WW	20	YEAR	D (DD)

Options Range A

Students will select 40 credits from the following modules:

Module	Description	Assessment	Credits	Period	Sub-slot
CHE-5150Y	MEDICINAL CHEMISTRY	WW	20	YEAR	B (BB)
CHE-5250Y	QUANTUM MECHANICS AND SYMMETRY	WW	20	YEAR	A(AA)

CHE-5350Y	MATERIALS AND POLYMER CHEMISTRY	WW	20	YEAR	AGJ
CHE-5501Y	INSTRUMENTAL ANALYTICAL CHEMISTRY	WW	20	YEAR	A(AA)
CHE-5601Y	BIOPHYSICAL CHEMISTRY	WW	20	YEAR	B (BB)
CHE-5701Y	FORENSIC CHEMISTRY - ANALYSIS	CW	20	YEAR	E(EE)
ENV-5006A	MATHEMATICS FOR SCIENTISTS B	EX	20	SEM1	BB
ENV-5007B	MATHEMATICS FOR SCIENTISTS C	WW	20	SEM2	BGJ

Year 3U

Compulsory Modules (60 credits)

Module	Description	Assessment	Credits	Period	Sub-slot
CHE-6101Y	ORGANIC COMPOUNDS: SYNTHESIS AND PROPERTIES	WW	20	YEAR	B(BP)
CHE-6201Y	PHYSICAL CHEMISTRY II	WW	20	YEAR	B(BB)
CHE-6301Y	INORGANIC COMPOUNDS: STRUCTURE AND FUNCTION	WW	20	YEAR	B(BQ)

Options Range A

One of CHE-6001Y or CHE-6002Y MUST be taken (ie is Compulsory). Students who achieve a year aggregate of at least 50% in Year 2 are expected to take CHE-6001Y, those who do not achieve 50% must take CHE-6002Y.

Students will select 60 credits from the following modules:

Module	Description	Assessment	Credits	Period	Sub-slot
CHE-5150Y	MEDICINAL CHEMISTRY	WW	20	YEAR	B (BB)
CHE-5250Y	QUANTUM MECHANICS AND SYMMETRY	WW	20	YEAR	A(AA)
CHE-5701Y	FORENSIC CHEMISTRY - ANALYSIS	CW	20	YEAR	E(EE)
CHE-6001Y	RESEARCH PROJECT	PR	40	YEAR	U
CHE-6002Y	LITERATURE-BASED PROJECT	CW	20	YEAR	U (U)
CHE-6150Y	ADVANCED TOPICS IN ORGANIC CHEMISTRY	WW	20	YEAR	D(DD)
CHE-6250Y	CHEMICAL PHYSICS - PHYSICAL CHEMISTRY	WW	20	YEAR	B(BP)
CHE-6601Y	PROTEIN STRUCTURE, CHEMISTRY AND ENGINEERING	WW	20	YEAR	A
CHE-6702A	FORENSIC CHEMISTRY - INTERPRETATION & PRACTICAL SKILLS	CW	20	SEM1	D(DD)
ENV-5015A	ATMOSPHERIC CHEMISTRY AND GLOBAL CHANGE	CW	20	SEM1	EE

ENV – F900**Year 1U**

Compulsory Modules (80 credits)

Module	Description	Assessment	Credits	Period	Sub-slot
ENV-4004Y	RESEARCH AND FIELD SKILLS	CW	20	YEAR	BB
ENV-4005A	UNDERSTANDING THE DYNAMIC PLANET	WW	20	SEM1	EE
ENV-4006B	BIODIVERSITY IN A CHANGING WORLD AND SUSTAINABILITY IN SOCIETY	WW	20	SEM2	CJL
ENV-4001A	GLOBAL ENVIRONMENTAL CHALLENGES	WW	20	SEM1	CJL

Options Range A

Students will select 20 credits from the following modules:

Module	Description	Assessment	Credits	Period	Sub-slot
ENV-4002Y	MATHEMATICS FOR SCIENTISTS A	WW	20	YEAR	DD
ENV-4003Y	NUMERICAL SKILLS FOR SCIENTISTS	WW	20	YEAR	DD

Options Range B

Students will select 20 credits from the following modules:

Module	Description	Assessment	Credits	Period	Sub-slot
ENV-4007B	EARTH'S CHEMICAL PROCESSES I, AND ATMOSPHERE AND OCEANS	WW	20	SEM2	BB
ENV-4008B	EARTH'S CHEMICAL PROCESSES II, AND ATMOSPHERE AND OCEANS	WW	20	SEM2	BB

Year 2U

Options Range A

Students may only choose either the Fieldcourse or non-Fieldcourse version of a module. Students must also submit a request to the School for a place on fieldcourses.

Students will select 120 credits from the following modules:

Module	Description	Assessment	Credits	Period	Sub-slot
BIO-5013A	FIELD ECOLOGY	PR	20	SEM1	C(CL)
BIO-5014B	COMMUNITY, ECOSYSTEM AND MACRO-ECOLOGY	WW	20	SEM2	AGJ
ENV-5001A	AQUATIC ECOLOGY	WW	20	SEM1	AGJ
ENV-5002B	ENVIRONMENTAL POLITICS AND POLICY MAKING	CW	20	SEM2	DGJ
ENV-5003A	CLIMATE CHANGE: SCIENCE AND POLICY	CW	20	SEM1	CGJ

ENV-5004B	SOLID EARTH GEOPHYSICS	WW	20	SEM2	DGJ
ENV-5006A	MATHEMATICS FOR SCIENTISTS B	EX	20	SEM1	BB
ENV-5007B	MATHEMATICS FOR SCIENTISTS C	WW	20	SEM2	BGJ
ENV-5008A	METEOROLOGY I	WW	20	SEM1	DGJ
ENV-5009B	METEOROLOGY II	WW	20	SEM2	DGJ
ENV-5011A	SEDIMENTOLOGY	CW	20	SEM1	EE
ENV-5012A	SOIL PROCESSES AND ENVIRONMENTAL ISSUES	WW	20	SEM1	DGJ
ENV-5013B	EARTH SYSTEM GEOCHEMISTRY	CW	20	SEM2	BGJ
ENV-5014A	INTERACTIONS AND POPULATIONS	WW	20	SEM1	CGJ
ENV-5015A	ATMOSPHERIC CHEMISTRY AND GLOBAL CHANGE	CW	20	SEM1	EE
ENV-5016A	OCEAN CIRCULATION	WW	20	SEM1	AGJ
ENV-5017B	WAVES, TIDES AND SHALLOW WATER PROCESSES	WW	20	SEM2	AGJ
ENV-5018A	GEODYNAMICS: EARTH'S ENGINE	WW	20	SEM1	CGJ
ENV-5019A	CHEMICAL OCEANOGRAPHY	WW	20	SEM1	CGJ
ENV-5021A	HYDROLOGY AND HYDROGEOLOGY	WW	20	SEM1	BGJ
ENV-5022B	LOW CARBON ENERGY	CW	20	SEM2	AGJ
ENV-5027B	ENVIRONMENTAL ANALYTICAL CHEMISTRY		20	SEM2	
ENV-5028B	GIS SKILLS FOR DISSERTATIONS		20	SEM2	
ENV-5031B	RESEARCH SKILLS FOR SOCIAL SCIENTISTS		20	SEM2	
ENVK5005B	SOLID EARTH GEOPHYSICS WITH FIELD COURSE	WW	20	SEM2	DGJ
ENVK5010B	METEOROLOGY II WITH FIELD COURSE	WW	20	SEM2	DGJ
ENVK5020A	MARINE SCIENCES FIELD COURSE	CW	20	SEM1	
ENVK5023B	LOW CARBON ENERGY WITH FIELD COURSE	CP	20	SEM2	AGJ

Year 3U

Compulsory Modules (60 credits)

Module	Description	Assessment	Credits	Period	Sub-slot
ENV-6021A	INDEPENDENT PROJECT	CP	40	SEM1	U
ENV-6007B	GLOBAL ENVIRONMENTAL CHANGE	CP	20	SEM2	AL+ CL + E4

Options Range A

Please note that if choosing Earthquake and Volcanic Hazards, students should select EITHER ENV-6001B or ENV-6002K. Students must also submit a request to the School for a place on fieldcourses.

Students will select 60 credits from the following modules:

Module	Description	Assessment	Credits	Period	Sub-slot
BIO-6015A	ORGANISMS AND ENVIRONMENT	WW	20	SEM1	ER
ENV-6001B	EARTHQUAKE AND VOLCANIC HAZARDS	WW	20	SEM2	AGJ
ENV-6002K	EARTHQUAKE AND VOLCANIC HAZARDS WITH FIELD COURSE	WW	20	SEM2	AGJ
ENV-6003B	POLLUTION, TOXICOLOGY AND CHEMISTRY	WW	20	SEM2	BGJ
ENV-6004A	MODELLING ENVIRONMENTAL PROCESSES	CP	20	SEM1	EE
ENV-6005A	BIOLOGICAL OCEANOGRAPHY AND MARINE ECOLOGY	WW	20	SEM1	BGJ
ENV-6006A	BIODIVERSITY CONSERVATION AND HUMAN SOCIETY	WW	20	SEM1	DQ
ENV-6008A	THE CARBON CYCLE AND CLIMATE CHANGE	WW	20	SEM1	DGJ
ENV-6009A	FOSSIL FUELS	EX	20	SEM1	AGJ
ENV-6010B	EARTH AND LIFE	WW	20	SEM2	BGJ
ENV-6011B	HUMAN GEOGRAPHY OF CLIMATE CHANGE	CW	20	SEM2	DGJ
ENV-6012B	NATURAL RESOURCES AND ENVIRONMENTAL ECONOMICS	WW	20	SEM2	CGJ
ENV-6013A	CLIMATE CHANGE: PHYSICAL SCIENCE BASIS	CW	20	SEM1	CL/DL
ENV-6014B	PARTICIPATORY ENVIRONMENTAL DECISION-MAKING	WW	20	SEM2	DGJ
ENV-6015A	FIELD COURSE TO EAST AFRICA	CP	20	SEM1	EE
ENV-6017A	PALAEOCLIMATOLOGY	WW	20	SEM2	DGJ
ENV-6018B	CATCHMENT WATER RESOURCES	WW	20	SEM2	CGJ
ENV-6019A	THEORY OF ENVIRONMENTAL ASSESSMENT	CW	20	SEM1	BGJ
ENV-6020B	ATMOSPHERIC COMPOSITION: MEASUREMENT AND MODELLING	CW	20	SEM2	CGJ

PHA – B231**Year 1U**

Compulsory Modules (120 credits)

Module	Description	Assessment	Credits	Period	Sub-slot
PHA-4xxxY	Patients, Medicines and Health	WW	20	YEAR	U
PHA-4002Y	PHYSICAL PHARMACY	WW	30	YEAR	A
PHA-4003Y	LIFE SCIENCES CHEMISTRY	WW	30	YEAR	D
PHA-4004Y	CELLS, PHYSIOLOGY & PHARMACOLOGY 1	WW	20	YEAR	B

Options Range A

Students will select 20 credits from the following modules:

Module Description Assessment Credits Period Sub-slot

Year 2U

Compulsory Modules (100 credits)

Module	Description	Assessment	Credits	Period	Sub-slot
PHAB5005Y	DRUG DESIGN AND MECHANISMS OF DRUG ACTION	WW	35	YEAR	
PHAB5006Y	INDUSTRIAL PHARMACY	WW	35	YEAR	
PHAB5007Y	CLINICAL THERAPEUTICS 1: NEUROPHYSIOLOGY, SYNAPTIC PHARMACOLOGY AND ENDOCRINOLOGY	WW	30	YEAR	

Options Range A

Students will select 20 credits from the following modules:

Module Description Assessment Credits Period Sub-slot

Year 3U

Compulsory Modules (120 credits)

Module	Description	Assessment	Credits	Period	Sub-slot
PHAB6005Y	ADVANCED DRUG DESIGN AND DELIVERY	WW	20	YEAR	
PHAB6006Y	CLINICAL THERAPEUTICS 2: DISEASES OF THE IMMUNE SYSTEM, INFECTIOUS DISEASE AND CANCER	WW	40	YEAR	
PHAB6007Y	CLINICAL THERAPEUTICS 3: CARDIOVASCULAR, GASTROINTESTINAL, NUTRITIONAL, HEPATIC AND RENAL DISEASES	WW	30	YEAR	
PHAB6008Y	FINAL YEAR RESEARCH DISSERTATION	CW	30	YEAR	