

APPLICATION FOR FULL APPROVAL: POSTGRADUATE PROGRAMME SPECIFICATION

Please note that the information contained in the final approved version of this programme specification will be published by HYMS at www.hyms.ac.uk

HYMS Postgraduate Programmes will be jointly awarded by the University of Hull and the University of York.

The published guidance notes should be used to assist the completion of this form.

THIS PROPOSAL **MUST** BE SUPPORTED BY ANY CVS (of non-HYMS staff) NOT SUBMITTED WITH THE PLANNING PERMISSION APPLICATION FOR STAFF WHO WILL DELIVER THE PROGRAMME.

1	Name of proposer/coordinator	Paul O'Higgins, HYMS
2	Team members <i>CVs (non-HYMS staff) must be submitted for each team member if not already provided as part of the planning permission application (where this is the case, please indicate by insertion of * after the name)</i>	Laura Fitton, HYMS (Programme Leader) Sam Cobb, HYMS Phil Cox, HYMS Peter Bazira, HYMS
3	Title of programme <i>Must be per planning permission approval</i>	MSc in Human Anatomy and Evolution
4	Award	MSc For candidates who wish to leave the programme prior to the completion of MSc (180 credits), a Diploma (120 credits) and Certificate (60 credits) are available as exit awards (note that HYMS will not normally admit students simply to take either Diploma or Certificate). Diploma and Certificate candidates will not undertake the research project. As the research project counts for 80 credits, those wishing to take the Diploma as an exit award will be asked to complete an additional 20 credit module to gain the requisite 120 credits. This programme will now be offered to medical students who wish to intercalate at Masters level.
5	Level	7 (postgraduate taught Masters level)
6	Will this programme only be run on a part-time basis? <i>Delete as applicable</i>	No
7	Duration (total number of years)	1 year full time (2 years part-time)

8	Where will the programme be delivered?	York campus (HYMS and Archaeology)
9	Accrediting Professional / Statutory Body (if applicable)	N/A
10	Entry requirements	As per HYMS Regulations for Taught Postgraduate Certificates, Postgraduate Diplomas and Master's Degrees in relevant discipline or for intercalating students, successful completion of a minimum of three years of an MB BS or comparable medical qualification.
11	Aims of the programme <i>Highlight aims</i>	The aims of this programme are: a) to provide students with a detailed understanding of human anatomy and evolution, including the evolution of our closest relatives, the primates, with a particular focus on anatomy and morphology and their interface with ecology and behaviour. b) to provide students with practical and theoretical knowledge about the battery of cutting edge tools and approaches used to interpret functional and evolutionary anatomy. c) enable students to undertake a detailed research project applying the skills and knowledge acquired in the programme to investigate current questions in human anatomy and evolution.
12	Distinctive features and/or fit with existing provision <i>Distinctive features and describe any links with other provision</i>	It replaces no existing programme.. There is no competition with other departments at Hull or York; it complements provision in the Archaeology Department at York and its development is fully supported by it. The HYMS MSc in Human Anatomy and Evolution will be unique in its focus on modern imaging and quantitative methods. The emergence of PALAEO at York has positive effects on marketing; this is a truly interdisciplinary programme and offers unique training in cross cutting methodologies. The proposal to offer this MSc to intercalating medical students fits in with the HYMS strategy of increasing intercalating student numbers. Based on student feedback, this programme is one which medical students, particularly those wishing to pursue a surgical route, will find attractive.
13	References used in designing the programme <i>Append comments from the external assessor and indicate the external consultation which has taken place, e.g. with professional bodies, employers, graduates and current students, and to demonstrate that barriers to study have been addressed. This should be specific to educational content and not simply</i>	A report was submitted in the original approved proposal from the External Assessor, Professor Christopher Dean (UCL). We have sought feedback from Kevin Kuykendall, our current external examiner, who has been involved to-date in feedback on assessments, marking and general pedagogical decisions.

	<i>duplicate material provided in the planning permission application</i>	
14	Minimum number of students <i>Must be per planning permission approval</i>	5 in year 1 rising to 12 in year 4

15	Programme learning outcomes <i>Reference the relevant subject benchmark statement(s) for each outcome (in brackets after each outcome e.g. i, ii, iii, iv).</i>	
	To our knowledge, there are no benchmark statements for MSc level in Biological Anthropology <i>State supporting learning, teaching and assessment strategies for each group of outcomes.</i>	
a	Knowledge and understanding	
	<p>1. Discuss and appraise anatomy and variation in an evolutionary, functional and ecological context</p> <p>2. Describe in detail the methods used in human anatomy and evolution research and explain the limitations of these methods.</p> <p>3. Describe in detail the microstructure, growth and development of hard tissues (bones and teeth) with particular reference to form, function and adaptation.</p>	<p>Teaching and learning methods/strategies: <i>Explain how this supports students in obtaining the knowledge and understanding set out in the adjacent column</i></p> <p>Lectures, seminars, practical classes, workshops and self directed learning all allow students to gain knowledge and understanding in different ways according to learning style.</p> <p>Assessment: <i>Explain how this enables students to demonstrate knowledge and understanding</i></p> <p>Project and practical work enable students to show knowledge in an applied fashion and promote deep understanding of the material by engaging with it on a practical level. Examinations and timed essays allow students to synthesise knowledge from a variety of topics, including across modules where appropriate, producing a synoptic perspective on the knowledge gained in the programme. Peer-assessed seminars allow students to present their knowledge and understanding verbally and assess it against their peers in an active way.</p>
b	Intellectual skills	
	<p>4. Describe, synthesise and critically evaluate current views of human and primate evolutionary anatomy and origins, the fossil evidence, and the environmental and ecological factors that</p>	<p>Teaching and learning methods/strategies: Seminars and journal discussions allow students to develop their skills of critical evaluation over time and in different contexts / on different topics that may require particular types of analysis.</p>

	<p>influenced human and primate evolution.</p> <p>5. Critically analyse the different theories of primate origins and relate and compare the evolution and ecology of non-human primates to hominins and humans.</p>	<p>Assessment</p> <p>Exams and timed essays allow students to articulate their own critical analysis and evaluation, as well as apply knowledge to a range of questions, some of which might not have been previously considered, hence promoting flexible, engaged thinking that results from deep learning. Project write-ups allow students to evaluate the literature in a structured fashion and with respect to their own novel research and thinking.</p>
c Practical/Professional skills		
	<p>6. Formulate research questions, design and carry out a research project examining an aspect of human anatomy and evolution, including evaluating research findings and recognising the limitations of specific approaches.</p>	<p>Teaching and learning methods/strategies:</p> <p>Practical and workshop session impart practical and professional skills of research ethics, integrity, design, analysis and interpretation. Seminars promote evaluation.</p> <p>Assessment</p> <p>Project work allows students to demonstrate practical skills</p>
d Transferable skills		
	<p>7. Present their work verbally and in writing in structured, coherent and scientific ways appropriate to the material, dissemination medium and audience, conforming to academic convention.</p>	<p>Teaching and learning methods/strategies:</p> <p>Seminars and presentation sessions facilitate this, and tutorials and workshops will help students choose the most effective communication style for their audience (for example, by training in scientific writing).</p> <p>Assessment</p> <p>Poster and oral presentation sessions allow students to show their acquisition of verbal and visual presentation skills. Written work, from timed essay to dissertations, allow students to show their written communication skills in a range of contexts.</p>
16	<p>How many new modules are required as part of this programme? Please list new modules</p>	<p>One new module: Special Topics in Musculoskeletal Anatomy</p> <p>Six modules already on the programme:</p> <ol style="list-style-type: none"> 1. Human Evolutionary Anatomy 2. Hard Tissue Biology 3. Virtual Anatomies 4. Primate Ecology and Evolution

	5. Functional and Musculoskeletal Anatomy 6. Research Project / Dissertation
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17a **Programme structure**
Insert details of modules below (and of their credit value) within each stage of the programme (as per planning permission application). See the guidance notes for an example.

Code/ New	Title	Core/ Optional	Dept	Credits	Level	Non- compensa table
0980005	Human evolutionary Anatomy	C	HYMS	20	7	N
0980006	Hard Tissue Biology	C	HYMS	20	7	N
0980007	Virtual Anatomies	O	HYMS	10	7	N
0980009	Primate Ecology and Evolution	C	HYMS	20	7	N
0980008	Functional and Musculoskeletal Anatomy	O	HYMS	20	7	N
0980010	Research Project / Dissertation	C	HYMS	80	7	Y
0980004	Geometric morphometrics	O	HYMS	10	7	N
4480806	Becoming Human: Evolving minds and societies	O	Archaeology	20	7	N
4480855	Ancient Biomolecules	O	Archaeology	20	7	N
New	Special Topics in Musculoskeletal Anatomy	O	HYMS	20	7	N

17b **Programme diagram [desirable] – very useful in giving a synoptic view**
Provide a diagram of the Programme structure showing core and optional modules, short (contained mostly within one term) and long (spread across terms - perhaps over a year) modules, ‘thin’ (low [ish] credit value - 5, 10 etc) and ‘fat’ (large [ish] credit value - 15, 20, 30 etc) modules and timing of each module.

Human Evolution MSc – 1 year full time (over the full twelve months)

Term 1	Term 2	Term 3
Primate Ecology and Evolution [core] (20 credits)	Human Evolutionary Anatomy [core] (20 credits)	
Hard Tissue Biology [core] (20)		

credits)	Functional and Musculoskeletal Anatomy [optional, HYMS] (20 credits) OR Ancient Biomolecules [optional, Archaeology] (20 credits) OR Special Topics in Musculoskeletal Anatomy [optional, HYMS] (20 credits)	
Geometric Morphometrics (10 credits) and Virtual Anatomies (10 credits) [optional, HYMS] OR Becoming Human: Evolving minds and societies [optional, Archaeology] (20 credits)	Research project / dissertation [core] (80 credits, submitted in September so students are expected to work over the summer)	

I8a	Rationale for inclusion of existing module(s) Explain why each existing module (in I7) should be included in the proposed programme.	Six modules listed above currently exist as part of the existing MSc in Human Evolution. This is not a proposal for a new programme but modification of the existing one.
I8b	Rationale for the development of a new module(s). Explain what is missing from existing delivery.	Currently in Term 2, the module 'Functional and Musculoskeletal Anatomy' provides basic gross anatomy training for students entering the Master's programme with no prior anatomical experience. As we wish to now increase recruitment from a wider range of background including intercalating medical students, a new, more in-depth module is proposed: Special Topics in Musculoskeletal Anatomy. The rationale for the proposal of this new module is to offer an alternative option in Term 2 for those students enrolling on the course who already possess a basic knowledge of gross human anatomy. This module will allow students to gain a more detailed knowledge of human and comparative anatomy in relation to a specific region and to advance their dissection skills. This will be an attractive option for intercalating medical students or those with prior anatomical qualification. No such module is offered at either parent Universities.

I9a	Programme assessment mapping			
Programme outcomes	Module outcomes	Assessment	Assessment	Assessment
I. Discuss and appraise human anatomy and variation in an	Critically analyse the use of hominin anatomy in taxonomic and	Essay	Unseen exam	Practicals

evolutionary, functional and ecological contexts.	phylogenetic analysis.			
	Critically analyse the use of indirect evidence to interpret and investigate hominin anatomy and function.	Oral exam and presentation		Practicals
	Identify and name bony features, muscles and muscle groups giving details of innervation of muscles.	Oral exam and presentation	Multiple choice test	
	Critically assess and give an account of the function of major muscle groups and muscles		Multiple choice test	Practicals
	Critically relate the comparative anatomy of a specific anatomical region within a developmental, functional and evolutionary framework	Oral exam and presentation		Practicals
	Critically assess and give an account of the function of bones of the limbs, spine and masticatory system	Oral exam and presentation	Multiple choice test	Practicals
	Critically relate details of musculoskeletal form and function to evolutionary and developmental	Oral exam and presentation	Multiple choice test	Practicals

	<p>history</p> <p>Critically appraise the extent to which skeletal and muscular features reflect functional vs genetic signals.</p> <p>Have developed an understanding of the key phases in the evolution of human cognitive abilities</p> <p>Have developed an understanding of the key phases in the evolution of human social systems</p> <p>Have developed a familiarity with some of the archaeological evidence for Lower and Middle Palaeolithic societies</p>	<p>Oral exam and presentation</p> <p>Essay</p> <p>Essay</p> <p>Essay</p>	<p>Multiple choice test</p>	<p>Practicals</p>
<p>2. Describe in detail the methods used in human anatomy and evolutionary research and explain the limitations of these methods.</p>	<p>Critically analyse the methods used for functional interpretation of fossil hominin anatomy.</p> <p>Critically assess the utility of skeletal and dental hard tissues for the recovery of growth, development and life history information</p> <p>Critically appraise imaging</p>	<p>Essay</p> <p>Essay</p> <p>Student-led seminars /</p>	<p>Unseen exam</p> <p>Unseen exam</p>	

	<p>modalities in relation to the scientific question at hand.</p> <p>Critically assess the benefits and drawbacks of different approaches to image reconstruction including, segmentation, warping, reflection and symmetry methods.</p> <p>Provide a critical appraisal of MDA in relation to simulation of function</p> <p>Provide a critical appraisal of FEA in relation to simulation of function</p> <p>Indicate how MDA, FEA and morphometrics might combine in studies of musculoskeletal form and function, critically evaluating these potential combinations.</p> <p>Appraise the various forms of evidence used to reconstruct the palaeobiologies and palaeoecology of extinct organisms.</p> <p>Be able to recognise the</p>	<p>discussions</p> <p>Student-led seminars / discussions</p> <p>Student-led seminars / discussions</p> <p>Student-led seminars / discussions</p> <p>Student-led seminars / discussions</p> <p>Unseen exam</p> <p>Essay</p>		
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	<p>methodological strengths and limitations of various (ancient biomolecule) techniques</p> <p>Be able to recommend applications where biomolecular analysis is likely to be useful</p> <p>Know how to select, conserve and take samples for biomolecular investigations</p> <p>Outline the key methodologies for data acquisition in GMM</p> <p>Outline the motivation and key methodologies for the measurement of biological form with emphasis on landmark data</p> <p>Outline the fundamentals of Geometric morphometric methods; GPA, TPS, Shape spaces</p>	<p>Essay</p> <p>Essay</p> <p>Individual project</p> <p>Individual project</p> <p>Individual project</p>		
<p>3. Describe in detail the microstructure, growth and development of hard tissues (bones and teeth) with particular reference to form, function and adaptation.</p>	<p>Describe in detail the structure of skeletal and dental hard tissues</p> <p>Critically appraise the function and mechanical properties of skeletal and</p>	<p>Essay</p> <p>Essay</p>	<p>Unseen exam</p> <p>Unseen exam</p>	

	<p>dental hard tissues</p> <p>Describe in detail the growth and development of skeletal and dental hard tissues and relate this to form</p> <p>Identify the structure and function of the interface between mineralised and unmineralised skeletal and dental tissues</p>	<p>Essay</p> <p>Essay</p>	<p>Unseen exam</p> <p>Unseen exam</p>	
<p>4. Describe, synthesise and critically evaluate current views of human and primate evolutionary anatomy and origins, the fossil evidence, and the environmental and ecological factors that influenced human and primate evolution.</p>	<p>Apply evolutionary principles to the study of hominin anatomical material.</p> <p>Describe the anatomical evidence in the hominin fossil record</p> <p>Apply evolutionary and ecological principles to the study of primates and appreciate how this may differ between modern and extinct groups.</p> <p>Discuss how taxonomy, ecology and evolutionary history influence body size, diet, morphology, locomotion behaviour, community structure and other ecological factors.</p>	<p>Essay</p> <p>Essay</p> <p>Unseen exam</p> <p>Unseen exam</p>	<p>Unseen exam</p> <p>Unseen exam</p> <p>Poster presentation</p>	

	<p>Critically analyse the different theories of primate origins and evolution within the larger context of mammals</p> <p>Undertake a detailed literature review within a given topic and synthesise and critically evaluate this literature.</p> <p>Be able to critically evaluate past studies for scientific rigour, cost and knowledge gained</p>	<p>Unseen exam</p> <p>Other types of extended writing</p> <p>Essay</p>		
<p>5. Critically analyse the different theories of primate origins and relate and compare the evolution and ecology of of non-human primates to hominins and humans</p>	<p>Describe in detail the major extant and extinct radiations of primates, including their chronologies and biogeography, and highlighting where there are gaps in knowledge.</p> <p>Relate and compare the evolution and ecology of non-human primates to hominins and modern humans.</p>	<p>Unseen exam</p> <p>Unseen exam</p>		
<p>6. Formulate research questions, design and carry out a research project examining an aspect of human anatomy and evolution, including evaluating research findings and</p>	<p>Formulate questions about hominin evolutionary anatomy and devise a means to investigate them.</p> <p>Use appropriate</p>	<p>Essay</p> <p>Practical work</p>		

recognising the limitations of specific approaches.	methods to reconstruct a 3D virtual musculoskeletal image.			
	Formulate a research question	Individual project	Unseen exam	
	Design a research project within a scientific framework	Other types of extended writing		
	Collect or collate and statistically analyse appropriate data	Other types of extended writing		
	Interpret research findings, and put them into context with existing knowledge on similar topics	Dissertation		
	Evaluate their research findings and recognise the limitations of their approach	Dissertation		
	Present a detailed, critical and sophisticated account of a given topic within human evolution	Dissertation		
	Manage time effectively	Dissertation		
	Be able to interpret published data sets	Dissertation		
Apply appropriate statistical methods in analyses of	Dissertation Individual project	Essay		

	variation, covariations with form, and analyses of differences between groups			
7. Present their work verbally and in writing in structured, coherent and scientific ways appropriate to the material, dissemination medium and audience, confirming to academic convention.	<p>Present their research findings in a coherent, structured and scientific manner, in both written and verbal forms</p> <p>Defend their research findings to peers and others</p>	<p>Oral presentation</p> <p>Oral presentation</p>	<p>Dissertation</p> <p>Dissertation</p>	

19b Curriculum and Assessment Mapping – Table A and B
Complete Table A and B attached (see guidance notes)

20	Other sources of information about/and support for this programme <i>For example student handbook, departmental web, VLE</i>	Handbook based on HYMS template, VLE
21	Particular support for learning <i>For example induction, supervisor system, PDPs, arrangements for students with disabilities</i>	Students will be inducted at the beginning of the programme and will be assigned a personal / pastoral tutor. Project students will have a dissertation advisory panel. Voluntary PDP and career planning will be available via the HYMS Postgraduate Centre VLE resources, open to PGR and PGT students.
22	Indicators of quality and standards <i>Feedback in appropriate area e.g. external accreditation, periodic reviews, external examiner feedback, HE Academy</i>	External examiner feedback; student evaluation; periodic reviews
23	Methods for evaluating and improving the quality of learning <i>For example peer observation, staff development, annual monitoring, student feedback</i>	Team teaching allows peer observation and feedback; student evaluations, sharing archaeology best practice.

24	<p>Identify any ethical and/or health and safety issues that relate to this programme's teaching and assessment (supporting material may be monitored from time to time)</p>	<p>Project work has potential health and safety and ethical implications. Students will be asked to conduct a risk and ethical assessment as part of their project proposals. Different projects will have different ethical and health and safety implications, which will be considered on an individual basis. Projects requiring ethical approval will be considered by the HYMS Ethics Committee early in the Spring Term. Projects with unusual / severe risks will be discussed with the HYMS Health and Safety Officer / the Universities as appropriate.</p>
25	<p>Tick here to confirm that the Programme Specification is complete.</p>	<p>Tick</p>

TABLE A: Programme Curriculum Map (demonstrating which programme outcomes are delivered in each module)

Make sure you use the numbers given in section 15 for your Programme Learning Outcomes

Outcomes key

i (a) – Knowledge and Learning outcome 1

ii(a) – Knowledge and Learning outcome 2

iii(a,b,c,d) if applicable

i(b) – Intellectual skills outcome 1

ii(b) – Intellectual skills outcome 2

i(c) – Practice/Professional skills outcome 1

ii(c) – Practice/Professional skills outcome 2

i(d) – Transferable skills outcome 1

ii(d) – Transferable skills outcome 2

Module name	Learning Outcomes																		
	Code	Level	1(a)	2(a)	3(a)	4(b)	5 (b)	6 (c)	7 (d)										
Human Evolutionary Anatomy	0980005	7	x	x		x		x	x										
Hard Tissue Biology	0980006	7		x	x				x										
Virtual Anatomies	0980007	7		x				x	x										
Primate Ecology and Evolution	0980009	7		x		x	x	x	x										
Functional and Musculoskeletal Anatomy	0980008	7	x	x					x										
Research Project / Dissertation	New	7				x		x	x										
Ancient	448085	7		x		x		x	x										

Biomolecules	5																		
Becoming Human	4480806	7	x					x											
Geometric morphometrics	0980004	7		x			x	x											
Special Topics in Musculoskeletal Anatomy	New	7	x	x				x											

TABLE B: Programme Assessment Methods Matrix

Modules should not be over assessed. There is no need to use the full range of assessment methods for each module, although it is recommended that over the course of the programme multiple assessment strategies are used.

Assessment Method	Human Evolutionary Anatomy	Hard Tissue Biology	Virtual Anatomies	Primate Ecology and Evolution	Functional and Musculoskeletal Anatomy	Special Topics in Musculoskeletal Anatomy	Research Project / Dissertation	Ancient Biomolecules	Becoming Human	Geometric morphometrics
Learning Portfolios										
Essay Assignments	x	x						x	x	
Group Projects										
Independent projects				x			x			x
Unseen Examinations	x	x		x						
Unseen laboratory/ workshop examinations										
Oral Examinations					x	x				
Open-book Examinations										
Fieldwork Reports										
Design Tasks										
Practicals			x		x	x				

Exhibitions										
Work Placement Reports										
Computer-based Exercises										
Multiple Choice Tests					x					
Synoptic exam										
Student led Seminars/discussions			x							
Problem Solving Exercises										
Other types of extended writing							x			
Oral Presentations					x	x	x			
Assessment of practice										

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Date proposal initially seen by Postgraduate Programmes Board	Previously approved
Date of approval by Planning Committee	Previously approved
Date of approval by HYMS Management Board	Previously approved
Date of approval by HYMS Joint Board	Previously approved

Educational Approval**1. Postgraduate Programme Board**

Date sent to Postgraduate Programme Board	28 th November 2013
Comments from Postgraduate Programme Board and date sent to proposer	5 th December 2013
Date of approval by Postgraduate Programme Board	5 th December 2013

2. External Reviewer

Name of external reviewer and date sent to s/he	Sent to the current external examiner on 19 th November 2013.
Comments from external reviewer and date sent to proposer	Comments received on 27 th November 2013.
Has the proposal been amended in light of external review?	Yes.

3. HYMS Board of Studies

Date sent to HYMS Board of Studies	9 th December 2013
Comments from HYMS Board of Studies and date sent to proposer	16 th December 2013
Date of approval by HYMS Board of Studies	16 th December 2013

4. HYMS Joint Senate Committee

Date sent to HYMS HJSC	16 th January 2014
Comments from HYMS HJSC and date sent to proposer	16 th January 2014
Date of approval by HYMS HJSC	16 th January 2014

5. Final approved version sent to the Programme Proposer

