

## PROGRAMME SPECIFICATION



1	<b>Awarding Institution</b>	Newcastle University
2	<b>Teaching Institution</b>	Newcastle University
3	<b>Final Award</b>	BA (Hons)
4	<b>Programme Title</b>	Archaeology and History
5	<b>UCAS/Programme Code</b>	VV41:
6	<b>Programme Accreditation</b>	N/A
7	<b>QAA Subject Benchmark(s)</b>	Archaeology, History
8	<b>FHEQ Level</b>	Honours
9	<b>Date written/revised</b>	April 2008

### 10 Programme Aims

*The programme aims to produce undergraduates who:*

1. Have a sound knowledge and understanding of the subjects of archaeology and history, and an in-depth knowledge and understanding of self-selected specialist areas within these subjects.
2. Have developed a range of subject-specific skills (including those needed to carry out archaeological investigations) as well as the intellectual and key skills to equip them for lifelong learning.
3. Are aware of changing historical phenomena over a long period of space and time. They should be able to investigate historical problems in depth, use source materials critically, and be able to assimilate and appreciate historiographical arguments and traditions.
4. Show an awareness and understanding of archaeological remains and of their role in contemporary communities.
5. Have been provided with an opportunity to study archaeology and history in an environment enhanced by research, and by the rich heritage resources of the British Isles.
6. Will be capable of going on to further study, or undertaking a wide variety of jobs in archaeology, history, industry, commerce and the public sector.

*The School of Historical Studies aims to provide a programme:*

7. In which teaching is informed by research, both relevant research in the disciplines of archaeology and history, and research carried out by members of staff
8. Which meets standards set out in university policies. Where courses of study takes place outside the university during ERASMUS exchanges the standards will comply with the appropriate university policies on placements.

## **11 Learning Outcomes**

The programme provides opportunities for students to develop and demonstrate knowledge and understanding, qualities, skills and other attributes in the following areas. The programme outcomes have references to the benchmark statements for both History and Archaeology.

### **Knowledge and Understanding**

On completing the programme students should:

- A1 Be aware of the diverse sources of evidence used by archaeologists and historians (including excavated, documentary, representational, artefactual, environmental and scientific data), knowledge of the nature of these forms of evidence, and a critical appreciation of the methodologies by which data can be acquired, analysed and interpreted from such sources
- A2 Demonstrate knowledge and understanding of the basic concepts, theories and methods underpinning history and post-prehistoric archaeology, with an ability to think critically about practice and interpretation in both subject areas
- A3 Have a broad and comparative knowledge of the history and post-prehistoric archaeology of selected geographical regions and chronological periods
- A4 Show knowledge and understanding at an intensive level of the sources and historiography, and/or the archaeological record and history of archaeological enquiry, relating to relatively short periods or limited topics in human history, acquired through studying with scholars at the forefront of their fields, in a cutting edge research environment.
- A5 Demonstrate knowledge of the origins and development of the disciplines of history, archaeology and historical archaeology
- A6 Have acquired knowledge and understanding of national and regional archaeological remains and resources.

### **Teaching and Learning Methods**

The primary method of imparting knowledge and understanding (A1-A6) is lectures, supplemented by seminars and in the case of A1 and A6 by participation in excavations, or other forms of practical fieldwork. A2 and A5 are introduced through the core Stage 1 modules ARA1027 and HIS1029. A6 is developed through fieldtrips, contact with professional archaeologists working in the region, and museum visits. Seminars and workshops help to reinforce and amplify student learning gained in lectures. They also encourage independent study and throughout the programme students are encouraged to supplement taught material by independent study, for which they are given extensive support and guidance on source materials, including web-based material, and how to use these sources of information. A4 is taught both by lectures and seminars, and through the undertaking of an independent dissertation under staff supervision.

### **Assessment Strategy**

Knowledge and understanding of the subject is primarily assessed by unseen written examinations together with written assignments, notably essays, projects and reports (A1-A6). In the case of A4 this is supplemented by submission of an undergraduate dissertation. Examinations primarily assess core information, and provide students with an opportunity to demonstrate their ability to structure a clear, concise and well reasoned argument in a limited time period. Submitted essays and reports place more emphasis on critical analysis and understanding. They enable students to demonstrate their employment of appropriate research techniques.

### **Intellectual Skills**

On completing the programme students should be able to:

- B1 Locate, extract, evaluate and analyse different sorts of data
- B2 Use analytical reasoning and critical skills in reading, writing and debating
- B3 Use appropriate evidence to support a sustained argument or line of reasoning
- B4 Adapt effectively to new and/or unexpected questions or problems
- B5 Demonstrate intellectual independence

<b>Teaching and Learning Methods</b>
Intellectual skills (B1-B5) are developed through exercises and guidance in lectures, in seminars, supplemented in the case of B1-B3 by written feedback and by discussion with staff. Students are encouraged to acquire such skills during the completion of a range of written assignments, notably essays and reports. Intellectual skills (B1-B5) are also encouraged by group and one-to-one discussion and debate in lectures and seminars, and (in the case of B2) through oral presentations. B1 and B4 are also developed in the course of fieldwork placements.
<b>Assessment Strategy</b>
Intellectual skills B1-B3 and B5 are assessed by written assignments, including unseen written examinations, and are also be assessed in the dissertation. B4 is primarily assessed by unseen written examination.
<b>Practical Skills</b>
On completing the programme students should be able to:
C1 Produce clear, succinct, accurate, well-planned and coherent presentations in both written and oral forms C2 Appreciate different interpretations of past events and processes, and be able to argue for and contest particular theories and points of interpretation C3 Use practical and fieldwork skills in the observation and study of the physical remains of past societies, and the investigation, recording, collection, excavation and presentation of archaeological materials C4 Appreciate the political and social significance of archaeological remains, and take a responsible attitude to their study, interpretation, preservation and presentation C5 Apply the research skills required to process and evaluate historical and archaeological data, and produce thereby a dissertation
<b>Teaching and Learning Methods</b>
Written and oral presentation techniques (C1) are initially fostered in the Archaeology core skills modules in Stage 1, and developed via feedback on written and oral work throughout Stages 1-3. Oral presentation techniques are further developed (for example through question and answer sessions at the close of presentations) in core and optional modules at Stages 2 and 3. Aspects of many subject-specific skills (C2, C4, C5) are taught in lectures and in seminars, supplemented by assigned work. C1, C2 and C5 are further acquired through the research skills module ARA3028 (which prepares students for their dissertation research), through preparation of the dissertation itself, and in the course of dissertation supervisions. C3 is taught through participation in excavations, field trips, museum visits, and laboratory work and/or modules involving artefact handling and analysis. C4 is addressed initially through the first year skills and concepts module ARA1029 and supported in later stages through lectures, seminars and fieldwork (e.g. ARA2093 Fieldwork).
<b>Assessment Strategy</b>
The ability of students to deploy practical skills C1-C4 effectively is assessed primarily by means of unseen written examination, written assignments, and the dissertation. C5 is assessed via the dissertation. Artefact analysis and observational skills (C3) are assessed in a range of material-based modules (e.g. ARA2094 and ARA3033), and in part through submission of a fieldwork report under module ARA2093 Fieldwork, detailing the student's own experiences in the field. Supporting documentation on fieldwork is also completed by the director of the excavation (or similar) commenting on the student's performance in practical tasks.
<b>Transferable/Key Skills</b>
On completing the programme students should be able to:
D1 Listen and take notes effectively D2 Work independently, both in completing directed reading and assignments and in pursuing, with guidance, a self-directed research trajectory - for example by writing a dissertation. D3 Employ a variety of IT skills (including word-processing and spread sheet programmes,

	PowerPoint, email, Blackboard and the internet)
D4	Communicate information and ideas in writing, verbally and through oral and graphic presentations
D5	Adapt to varied working environments, problems and challenges
D6	Work with others in producing written and oral reports and presentations, work as part of a team in a fieldwork environment, and respect the viewpoints of others
D7	Manage their time effectively, and be able to meet deadlines
<b>Teaching and Learning Methods</b>	
<p>Listening and note-taking (D1) are developed principally in lectures but also in seminars, including attendance at the oral presentations of other students. Note-taking is also a feature of independent study (D2). D2 and D6 are fostered through the Stage I module ARA1027 Introduction to Archaeology, and through guidance provided in our comprehensive Degree Programme Handbook. At Stage 3, D2, D6 and D7 are further developed through dissertation preparation (ARA3028), and through preparation of the dissertation (ARA3099) IT skills (D3) are practiced by the word-processing of written assignments and in the preparation of PowerPoint presentations. Web-based bibliographic research is encouraged (for example via the University's Online Reading List facility), and many module leaders use the on-line <i>Blackboard</i> system for the provision of course materials. Communication skills (D4) are learnt and practiced in question-and-answer sessions in lectures, in the preparation of group assignments and presentations (both written and oral), and in the course of fieldwork. Adaptability (D5) and team working skills (D6) are especially developed in the course of fieldwork placements at Stages 2 and 3. Students undertaking fieldwork encounter entirely new working environments, people and problems, and develop interpersonal skills and a flexible, adaptive approach as a result.</p>	
<b>Assessment Strategy</b>	
<p>D4 (oral communication) and D6 are assessed by means of the grading of oral and written group presentations. D1, D2, D3, D4 (written communication) D5 and D7 are assessed by a combination of unseen examinations, written assignments, and the dissertation. IT skills (D3) are assessed as part of the process of grading written work.</p>	

## 12 Programme Curriculum, Structure and Features

### Basic structure of the programme

This degree programme allows students to combine Archaeology (the study of material culture) and History (the study of written sources) in exploring the human past. The programme focuses principally on the period CE 400-present, although opportunities are provided to explore aspects of the Classical era. Students take modules drawn from both the Archaeology and History programmes within the School of Historical Studies (on topics as diverse as Byzantine Archaeology and the history of Imperial China), and undergo the same practical (fieldwork) training as Single Honours Archaeology students. At the same time, however, this programme introduces students to the unique discipline of 'Historical Archaeology', a field of study integrating the study of historical documents with the study of material remains excavated by archaeologists. Historical Archaeology is an emerging discipline, and archaeology departments in many British universities do not yet extend their coverage beyond the end of the medieval period (CE 1500). At Newcastle, however, students are able to study aspects of Historical Archaeology (and take complementary modules in History) from the Roman period right through to the 20<sup>th</sup> century.

The programme is studied over three years full-time.

The programme is divided into three stages. Each year, or stage, requires the study of modules with a total credit value of 120. The three years of the degree therefore amounts to 360 credits. Each credit represents 10 hours of student effort, covering lectures, seminars, workshops, private study, completion of coursework and revision.

The credit balance for Archaeology (ARA) and History (HIS) modules is:

Stage 1 60 credits ARA and 60 credits HIS

Stage 2 60 ARA core credits and 60 optional credits, at least 40 of which must be HIS

Stage 3 30 ARA core credits, a 30 credit joint dissertation (ARA coded for administrative purposes), and 60 optional credits at least 30 of which must be HIS

At Stage Two students have the right to earn 20 credits in modules from other subject areas or schools in the Faculty of Humanities, Arts and Social Sciences, at the discretion of the DPD. At Stage Three students similarly have the right to earn 30 credits in modules from other subject areas or schools in the Faculty of Humanities, Arts and Social Sciences, at the discretion of the DPD.

For degree classification purposes all Honours (that is, Stage Two and Stage Three modules) modules count. Stage 3 credits have twice the weighting of Stage 2 credits in the final degree classification.

Progression to the next stage of the programme is conditional on meeting the conditions laid down by the University for progression. Students are normally required to pass every module with a mark of at least 40% in order to proceed.

At Stage Three, all students must undertake a 30 credit dissertation.

All students are required to participate in approved excavations, fieldwork or other practical work of at least two weeks' duration at the end of Stage One and at least two weeks' duration at the end of Stage Two.

This programme is built around a broad range of themes, including British, European and World History, Archaeological theory and practice, Roman, Byzantine and Medieval Archaeology, and Historical Archaeology (1500-present).

In Stage One, compulsory modules ARA 1027 and HIS 1029 introduce students to the basic aims, theories and methods in both archaeology and history (A1-2, A5), and to practical skills and concepts (A2, A5, A6, C1-4). Students are also introduced to archaeological science (A1), and to the post-prehistoric archaeology of Britain, from the Roman-modern period. Stage One students are also introduced to some of the major themes in World History (A3), via two innovative core modules taken by all students in the School of Historical Studies. Visits are made to local archaeological sites and museums (A6, C3-4). During the summer vacation at the end of Stage One, students participate in approved excavations, fieldwork or other practical work of at least two weeks' duration (A5, A6, C3-C4).

Stage One modules begin the development of all related intellectual and practical skills (B1-C5). Transferable skills (D1-D7) are also introduced and practiced.

At Stage 2, two compulsory module introduce students to the discipline of **Historical Archaeology**, which integrates documentary and artefactual data in studying past societies. One module (ARA2097) explores global themes after 1492, and the other (ARA2098) introduces students to historic landscape archaeology.

Stage Two also provides opportunities for specialisation in both history and archaeology, with students choosing Archaeology options from a list that ranges from archaeological theory to Roman pottery, and History options from countries and periods as far varied as Imperial China, the Caribbean, Anglo-Saxon England, and twentieth-century Cuba (A1, A4, C3). The fieldwork undertaken at the close of Stage One is assessed at Stage Two through the means of a fieldwork diary (A6, B4, C3-C4). The lectures and seminars that accompany the Fieldwork module equip students to undertake a second excavation or fieldwork placement at the end of Stage Two.

Stage Two modules are mainly on narrower topics than Stage One modules, and are studied at a more intensive and demanding level than those at Stage One. Modules at Stage Two continue the development of intellectual skills (B1-B5) and practical skills (C1-C5) and

Transferable skills (D1-D7) are also developed at Stage 2.

In Stage Three, the study of archaeology and history is done at a still more intensive level (A4). Students take ARA3031 (Historical Archaeology of Britain from 1500-present) as a compulsory module at Stage 3, ensuring that the subject-specific skills in Historical Archaeology introduced at Stage Two are further enhanced in Stage Three.

Having taken a 10 credit preparatory research skills module, fostering generic independent research skills, but also targeting subject-specific themes and issues, all students undertake a 30 credit dissertation on a subject of particular interest (B2-B3, C1-2, C5, D2). Students are encouraged (via the research skills module, and a pre-circulated list of suggested topics) to select a dissertation topic which involves the integration of archaeological evidence and historical documents. Should they prefer to opt for a topic based on *either* historical *or* archaeological data, it is a requirement of the dissertation in Archaeology and History that at least one chapter of their finished work must consider the alternate data set.

The remaining modules are chosen from a wide variety of options (A3, A4). Within Archaeology, these include Byzantine and African archaeology, and a practical option based on artefacts using the collections of the University's museums (B1, C2). The three 30-credit Archaeology options available in semester 2 of Stage 3 (ARA394, ARA3051 and ARA 3094) are similar to versions offered as 20 credit modules to other students in Archaeology, but they have an additional 10 credits of assessed work attached (and therefore have separate module codes). All Stage 3 options in History are worth 30 credits, and those in Archaeology are normally worth 20, so this arrangement successfully enables us to offer an option in Archaeology at Stage 3 of the degree.

At Stage Three, History options take the form of 30 credit 'Special Subjects'. Each Special Subject comprises the investigation of a historical topic in depth (A3, A4) chosen from a wide range of topics drawn from different continents and centuries, as far varied as the early medieval European emperor Charlemagne, America in Vietnam, and Genocide. All students on this degree pathway must take at least one 30 credit History option in Stage Three.

The dissertation, like all Stage-Two and Stage-Three modules develops intellectual skills (B1-5) and practical skills (C1-C4), but also provides students with the opportunity to develop research skills (C5) and produce an extended study. Transferable skills (D1-D7) are further developed at Stage Three.

#### **Programme regulations**

<http://www.ncl.ac.uk/regulations/programme/>

### **13 Criteria for admission**

#### *Entry qualifications*

The Admissions Tutor normally asks applicants for the degree for at least a B grade in A level history, and for at least another A grade and a B grade in two other A levels. The Admissions Tutor is happy to accept General Studies as one of the three A levels. A typical offer would be AAB at A level

Prospective entrants may also offer two AS levels of a similar standard in place of a third A level.

The Admissions Tutor welcomes Scottish qualifications and, although we consider all candidates with Scottish Highers/CSYS on an individual basis, a typical offer would be AAABB at Higher Grade.

#### *Admissions policy/selection tools*

Places are normally offered primarily on a combination of predicted grades at A and AS level

and the student's personal statement.

Students to whom offers are made are invited to an Open Day to meet staff and students. Attendance is not compulsory. Applicants with non-standard qualifications may be interviewed

#### *Non-standard Entry Requirements*

The School of Historical Studies is keen to encourage applications from mature students with A levels or other qualifications and each of these applicants is given individual consideration. Whatever their background or qualifications, the School welcomes applications from bright and enthusiastic people with a genuine interest in the subject(s) being studied.

Overseas students: appropriate overseas qualifications will be considered, as well as A levels. Evidence of English language skills that are adequate to complete the programme successfully is required (IELTS English Language proficiency test score of 6.5)

#### *Level of English Language capability*

Evidence of English language skills that are adequate to complete the programme successfully is required (IELTS English Language proficiency test score of 6.5)

### **14 Support for Student Learning**

#### *Induction*

During the first week of the first semester students attend an induction programme. New students will be given a general introduction to University life and the University's principle support services and general information about the School and their programme, as described in the Degree Programme Handbook. New and continuing students will be given detailed programme information and the timetable of lectures/practicals/labs/ tutorials/etc. The International Office offers an additional induction programme for overseas students (see <http://www.ncl.ac.uk/international/arrival/jan/index.phtml>)

#### *Resources specifically supporting learning in Archaeology and History*

Students have access to the Cowen Library, a specialist archaeological resource located at the Museum of Antiquities. Good local history libraries are also available at the Newcastle Central Library and the library of the Literary and Philosophical Society. Students can also make use of the resources of the Museum of Antiquities (the premier museum for the north-east of England and the 'gateway' to the Hadrian's Wall World Heritage Site), the Shefton Museum of Greek Art and Archaeology, and the Beamish Museum Resources Centre. Information on these and other local resources is listed on the School web-site (<http://www.ncl.ac.uk/historical/>) and on individual staff websites. Supporting materials for many modules are made available online via the *Blackboard* system. Additional study support materials are also provided on the 'Programme Resources for Archaeology' *Blackboard* site.

#### *Study skills support*

Students will learn a range of Personal Transferable Skills, including Study Skills, as outlined in the Programme Specification. Some of this material, e.g. time management is covered in the appropriate Induction Programme. Students are explicitly tutored on their approach to both group and individual projects.

Numeracy support is available through Maths Aid. Further details are available at:

[http://www.ncl.ac.uk/library/news\\_details.php?news\\_id=159](http://www.ncl.ac.uk/library/news_details.php?news_id=159) Help with academic writing is available from the Writing Centre. Details can be obtained from [Alicia.Cresswell@ncl.ac.uk](mailto:Alicia.Cresswell@ncl.ac.uk)

#### *Academic support*

The initial point of contact for a student is with a lecturer or module leader, or their tutor (see below) for more generic issues. Thereafter the Degree Programme Director or Head of School may be consulted. Issues relating to the programme may be raised at the Staff-Student Committee, and/or at the Board of Studies.

#### *Pastoral support*

All students are assigned a personal tutor whose responsibility is to monitor the academic performance and overall well-being of their tutees. Details of the personal tutor system can be found at <http://www.ncl.ac.uk/undergraduate/support/tutor.phtml>

In addition the University offers a range of support services, including the Student Advice Centre, the Counselling and Wellbeing team, the Mature Student Support Officer, and a Childcare Support Officer, see

<http://www.ncl.ac.uk/undergraduate/support/welfare/index.phtml>

#### *Support for students with disabilities*

The University's Disability Support Service provides help and advice for disabled students at the University - and those thinking of coming to Newcastle. It provides individuals with: advice about the University's facilities, services and the accessibility of campus; details about the technical support available; guidance in study skills and advice on financial support arrangements; a resources room with equipment and software to assist students in their studies. For further details see <http://www.ncl.ac.uk/disability-support/>

#### *Learning resources*

The University's main learning resources are provided by the Robinson and Walton Libraries (for books, journals, online resources), and Information Systems and Services, which supports campus-wide computing facilities, see

<http://www.ncl.ac.uk/undergraduate/degrees/facilities/index.phtml>

All new students whose first language is not English are required to take an English Language Proficiency Test. This is administered by INTO Newcastle University Centre on behalf of Newcastle University. Where appropriate, in-session language training can be provided. The INTO Newcastle University Centre houses a range of resources which may be particularly appropriate for those interested in an Erasmus exchange. See

<http://ncl.ac.uk/langcen/index.htm>

### **15 Methods for evaluating and improving the quality and standards of teaching and learning**

#### *Module reviews*

All modules are subject to review by questionnaires which are considered by the Board of Studies. Changes to, or the introduction of new, modules are considered at the School Teaching and Learning Committee and at the Board of Studies. Student opinion is sought at the Staff-Student Committee and/or the Board of Studies. New modules and major changes to existing modules are subject to approval by the Faculty Teaching and Learning Committee.

#### *Programme reviews*

The Board of Studies conducts an Annual Monitoring and Review of the degree programme and reports to Faculty Teaching and Learning Committee.

#### *External Examiner reports*

External Examiner reports are considered by the Board of Studies. The Board responds to these reports through Faculty Teaching and Learning Committee. External Examiner reports are shared with institutional student representatives, through the Staff-Student Committee.

#### *Student evaluations*

All modules, and the degree programme, are subject to review by student questionnaires. Informal student evaluation is also obtained at the Staff-Student Committee, and the Board of Studies. The National Student Survey is sent out every year to final-year undergraduate students, and consists of a set of questions seeking the students' views on the quality of the learning and teaching in their HEIs. Further information is at [www.thestudentsurvey.com/](http://www.thestudentsurvey.com/) With reference to the outcomes of the NSS and institutional student satisfaction surveys actions are taken at all appropriate levels by the institution.

#### *Mechanisms for gaining student feedback*



Feedback is channelled via the Staff-Student Committee and the Board of Studies.

*Faculty and University Review Mechanisms*

The programme is subject to the University's Internal Subject Review process, see [http://www.ncl.ac.uk/aqss/qsh/internal\\_subject\\_review/index.php](http://www.ncl.ac.uk/aqss/qsh/internal_subject_review/index.php)

## 16 Regulation of assessment

*Pass mark*

The pass mark is 40 (Undergraduate programmes)

*Course requirements*

Progression is subject to the University's Undergraduate Progress Regulations (<http://www.ncl.ac.uk/calendar/university.regs/ugcont.pdf>) and Undergraduate Examination Conventions (<http://www.ncl.ac.uk/calendar/university.regs/ugexamconv.pdf>). In summary, students must pass, or be deemed to have passed, 120 credits at each Stage. Limited compensation up to 40 credits and down to a mark of 35 is possible at each Stage and there are resit opportunities, with certain restrictions.

*Weighting of stages*

The marks from Stages 2 and 3 will contribute to the final classification of the degree. Stage 3 credits have twice the weighting of Stage 2 credits in the final degree classification.

*Common Marking Scheme*

The University employs a common marking scheme, which is specified in the Undergraduate Examination Conventions, namely

	<b>Modules used for degree classification (DC)</b>	<b>Modules not used for degree classification</b>
<40	Fail	Failing
40-49	Third Class	Basic
50-59	Second Class, Second Division	Good
60-69	Second Class, First Division	Very Good
70+	First Class	Excellent

*Role of the External Examiner*

An External Examiner, a distinguished member of the subject community, is appointed by Faculty Teaching and Learning Committee, after recommendation from the Board of Studies. The External Examiner is expected to:

- See and approve examination papers
- Moderate examination and coursework marking
- Attend the Board of Examiners
- Report to the University on the standards of the programme

In addition, information relating to the programme is provided in:

The University Prospectus (see <http://www.ncl.ac.uk/undergraduate/>)

The School Brochure (contact [enquiries@ncl.ac.uk](mailto:enquiries@ncl.ac.uk))

The University Regulations (see <http://www.ncl.ac.uk/calendar/university.regs/>)

The Degree Programme Handbook

Please note. This specification provides a concise summary of the main features of the programme and of the learning outcomes that a typical student might reasonably be expected to achieve if she/he takes full advantage of the learning opportunities provided. The accuracy

of the information contained is reviewed by the University and may be checked by the Quality Assurance Agency for Higher Education.

## Mapping of Intended Learning Outcomes onto Curriculum/Modules

Module	Type	Intended Learning Outcomes			
		A	B	C	D
ARA1026	C	1, 2, 4	1, 2, 3, 4, 5	1, 2	1, 2, 3, 4, 5, 6, 7
ARA1027	C	1, 2, 5	1, 2, 4, 5	1, 2, 3, 4,	1, 2, 3, 4, 6, 7
ARA1030	C	1, 2, 3, 6	1, 2, 3, 4, 5	1, 2,	1, 2, 3, 4, 5, 6, 7
HIS1023	C	1, 3	1, 2, 3, 4, 5	1, 2	1, 2, 3, 4, 5, 7
HIS1024	C	1, 3	1, 2, 3, 4, 5	1, 2	1, 2, 3, 4, 5, 6, 7
HIS1029	C	1, 2, 5	1, 2, 3, 4, 5	1, 2,	3, 4, 5, 6, 7
ARA2093	C	1, 2, 6	1, 2, 3, 4, 5	1, 2, 3, 4	3, 4, 5, 6, 7
ARA2097	C	1, 2, 3, 5	1, 2, 3, 4, 5	1, 2, 3, 4	1, 2, 3, 4, 6, 7
ARA2098	C	1, 2, 3	1, 2, 3, 4, 5	1, 2, 3, 4	1, 2, 3, 4, 6, 7
ARA2001	O	1, 2, 3, 5	1, 2, 3, 4, 5	1, 2, 4	1, 2, 3, 4, 6, 7
HIS2013	O	1, 3	1, 2, 3, 4, 5	1, 2	1, 2, 3, 4, 5, 6, 7
HIS2014	O	1, 3	1, 2, 3, 4, 5	1, 2	1, 2, 3, 4, 5, 6, 7
HIS2033	O	2, 3,	1, 2, 3, 5	1, 2	1, 2, 3, 4, 5, 6, 7
HIS2037	O	1, 3	1, 2, 3, 4, 5	1, 2	1, 2, 3, 4, 5, 6, 7
HIS2039	O	1, 3	1, 2, 3, 4, 5	1, 2	1, 2, 3, 4, 5, 6, 7
HIS2047	O	1, 3	1, 2, 3, 4, 5	1, 2	1, 2, 3, 4, 5, 6, 7
HIS2050	O	1, 2, 3	1, 2, 3, 5	1, 2	1, 2, 3, 4, 6, 7
HIS2055	O	1, 3	1, 2, 3, 4, 5	1, 2	1, 2, 3, 4, 5, 6, 7
HIS2077	O	1, 3	1, 2, 3, 4, 5	1, 2	1, 2, 3, 4, 5, 7
HIS2080	O	1, 2, 3	1, 2, 3, 4, 5	1, 2	1, 2, 3, 4, 5, 6, 7
HIS2081	O	1, 2, 3	1, 2, 3, 4, 5	1, 2	1, 2, 3, 4, 6, 7
HIS2082	O	1, 2, 3	1, 2, 3, 4, 5	1, 2	1, 2, 3, 4, 5, 6, 7
HIS2083	O	1, 2, 3	1, 2, 3	1, 2	1, 2, 3, 4, 5, 7
HIS2084	O	1, 3	1, 2, 3, 4, 5	1, 2	1, 2, 3, 4, 5, 6, 7
HIS2085	O	1, 3	1, 2, 3, 4, 5	1, 2	1, 2, 3, 4, 5, 6, 7
HIS2086	O	1, 3	1, 2, 3, 4, 5	1, 2	1, 2, 3, 4, 5, 6, 7
HIS2087	O	1, 3	1, 2, 3, 4, 5	1, 2	1, 2, 3, 4, 5, 6, 7
HIS2102	O	1, 3	1, 2, 3, 4, 5	1, 2	1, 2, 3, 4, 5, 6, 7
HIS2103	O	1, 3	1, 2, 3, 4, 5	1, 2	1, 2, 3, 4, 5, 6, 7
HIS2109	O	1, 3	1, 2, 3, 4, 5	1, 2	1, 2, 3, 4, 5, 6, 7
HIS2110	O	1, 3	1, 2, 3, 4, 5	1, 2	1, 2, 3, 4, 5, 6, 7
HIS2112	O	1, 3	1, 2, 3, 4, 5	1, 2	1, 2, 3, 4, 5, 6, 7
HIS2113	O	1, 3	1, 2, 3, 4, 5	1, 2	1, 2, 3, 4, 5, 6, 7
HIS2116	O	1, 3	1, 2, 3, 4, 5	1, 2	1, 2, 3, 4, 5, 6, 7
HIS2122	O	1, 3	1, 2, 3, 4, 5	1, 2	1, 2, 3, 4, 5, 6, 7
HIS2123	O	1, 3	1, 2, 3, 4, 5	1, 2	1, 2, 3, 4, 5, 6, 7
HIS2124	O	1, 3	1, 2, 3, 4, 5	1, 2	1, 2, 3, 4, 5, 6, 7
HIS2125	O	1, 3	1, 2, 3, 4, 5	1, 2	1, 2, 3, 4, 5, 6, 7
LAS2026	O	1, 3	1, 2, 3, 4, 5	1, 2	1, 2, 3, 4, 5, 6, 7
LAS4001	O	1, 2, 3	1, 2, 3, 4, 5	1, 2	1, 2, 3, 4, 5, 6, 7
ARA3028	C	1	1, 2, 3, 4, 5	1, 2, 5	1, 2, 3, 4, 5, 6, 7
ARA3031	C	1, 3	1, 2, 3, 4, 5	1, 2, 5	1, 2, 3, 4, 5, 6, 7
ARA3099	C	1, 3	1, 2, 3, 4, 5	1, 2, 5	1, 2, 3, 4, 5, 6, 7
ARA3049	C	1, 3	1, 2, 3, 4, 5	1, 2, 5	1, 2, 3, 4, 5, 6, 7
ARA3051	O	1, 2, 4, 5, 6	1, 2, 3, 4, 5	1, 2, 5	1, 2, 3, 4, 5, 6, 7
ARA3094	O	1, 2, 4, 5, 6	1, 2, 3, 4, 5	1, 2, 5	1, 2, 3, 4, 5, 6, 7
HIS3001		1, 2, 3, 4	1, 2, 3, 4, 5	1, 2, 5	1, 2, 3, 4, 5, 6, 7
HIS3002		1, 2, 3, 4	1, 2, 3, 4, 5	1, 2, 5	1, 2, 3, 4, 5, 6, 7
HIS3004	O	1, 2, 3, 4	1, 2, 3, 4, 5	1, 2, 5	1, 2, 3, 4, 5, 6, 7
HIS3005	O	1, 2, 3, 4	1, 2, 3, 4, 5	1, 2, 5	1, 2, 3, 4, 5, 6, 7
HIS3007	O	1, 2, 3, 4	1, 2, 3, 4, 5	1, 2, 5	1, 2, 3, 4, 5, 6, 7
HIS3018	O	1, 2, 3, 4	1, 2, 3, 4, 5	1, 2, 5	1, 2, 3, 4, 5, 6, 7
HIS3021	O	1, 2, 3, 4	1, 2, 3, 4, 5	1, 2, 5	1, 2, 3, 4, 5, 6, 7
HIS3022	O	1, 2, 3, 4	1, 2, 3, 4, 5	1, 2, 5	1, 2, 3, 4, 5, 6, 7
HIS3025	O	1, 2, 3, 4	1, 2, 3, 4, 5	1, 2, 5	1, 2, 3, 4, 5, 6, 7
HIS3040	O	1, 2, 3, 4	1, 2, 3, 4, 5	1, 2, 5	1, 2, 3, 4, 5, 6, 7
HIS3041	O	1, 2, 3, 4	1, 2, 3, 4, 5	1, 2, 5	1, 2, 3, 4, 5, 6, 7
HIS3060	O	1, 2, 3, 4	1, 2, 3, 4, 5	1, 2, 5	1, 2, 3, 4, 5, 6, 7
HIS3061	O	1, 2, 3, 4	1, 2, 3, 4, 5	1, 2, 5	1, 2, 3, 4, 5, 6, 7
HIS3062	O	1, 2, 3, 4	1, 2, 3, 4, 5	1, 2, 5	1, 2, 3, 4, 5, 6, 7
HIS3078	O	1, 2, 3, 4	1, 2, 3, 4, 5	1, 2, 5	1, 2, 3, 4, 5, 6, 7
HIS3079	O	1, 2, 3, 4	1, 2, 3, 4, 5	1, 2, 5	1, 2, 3, 4, 5, 6, 7
HIS3080	O	1, 4	1, 2, 3, 4, 5	1, 2, 5	1, 2, 3, 4, 5, 6, 7
HIS3081	O	1, 4	1, 2, 3, 4, 5	1, 2, 5	1, 2

HIS3083	O	1, 4	1, 2, 3, 4, 5	1, 2, 5	1, 2, 3, 4, 5, 6, 7
HIS3084	O	1, 2, 4	1, 2, 3, 4,	1, 5	1, 2, 3, 4, 5, 6, 7
HIS3085	O	1, 2, 4	1, 2, 3, 4, 5	1, 5	1, 2, 3, 4, 5, 6, 7
HIS3086	O	1, 2, 5	1, 2, 3, 4, 5	2, 5	1, 2, 3, 4, 5, 6, 7
HIS3088	O	1, 2, 3, 4	1, 2, 3, 4, 5	1, 2, 5	1, 2, 3, 4, 5, 6, 7
HIS3089	O	1, 4	1, 2, 3, 4, 5	1, 2, 5	1, 2, 3, 4, 5, 6, 7
HIS3092	O	1, 4	1, 2, 3, 4, 5	1, 2, 5	1, 2, 3, 4, 5, 6, 7
HIS3093	O	1, 4	1, 2, 3, 4, 5	1, 2, 5	1, 2, 3, 4, 5, 6, 7
HIS3094	O	1, 2, 4	1, 2, 3, 4, 5	1, 2, 5	1, 2, 3, 4, 5, 6, 7
HIS3095	O	1, 2, 3, 4, 5	1, 2, 3, 4, 5	1, 2, 5	1, 2, 3, 4, 5, 6, 7
HIS3096	O	1, 2, 3, 4	1, 2, 3, 4, 5	1, 2, 5	1, 2, 3, 4, 5, 6, 7
HIS3096	O	1, 2, 3, 4	1, 2, 3, 4, 5	1, 2, 5	1, 2, 3, 4, 5, 6, 7
HIS3102	O	1, 2, 3, 4	1, 2, 3, 4, 5	1, 2, 5	1, 2, 3, 4, 5, 6, 7
HIS3103	O	1, 2, 3, 4	1, 2, 3, 4, 5	1, 2, 5	1, 2, 3, 4, 5, 6, 7
HIS3105	O	1, 2, 3, 4	1, 2, 3, 4, 5	1, 2, 5	1, 2, 3, 4, 5, 6, 7
HIS3108	O	1, 2, 3, 4	1, 2, 3, 4, 5	1, 2, 5	1, 2, 3, 4, 5, 6, 7
HIS3109	O	1, 2, 3, 4	1, 2, 3, 4, 5	1, 2, 5	1, 2, 3, 4, 5, 6, 7
HIS3110	O	1, 2, 3, 4	1, 2, 3, 4, 5	1, 2, 5	1, 2, 3, 4, 5, 6, 7
HIS3112	O	1, 2, 3, 4	1, 2, 3, 4, 5	1, 2, 5	1, 2, 3, 4, 5, 6, 7
HIS3116	O	1, 2, 3, 4	1, 2, 3, 4, 5	1, 2, 5	1, 2, 3, 4, 5, 6, 7