UNIVERSITY OF LEICESTER

Programme Specification (Postgraduate)
For students entering in 2018/19
Date amended: 24 February 2016

1. Programme Title(s):

MSc/Postgraduate Diploma*/Certificate* in Geographical Information Science with industry
* exit award only

2. Awarding body or institution:

University of Leicester

3. a) Mode of study

Full-time
The taught component of the programme would be taken in the first two semesters, similar to those on the current MSc in Geographical Information Science (GIS) without industry. This would be followed by the industrial placement of between 6 or 12 months in duration (according to the specifics of the industrial partner coupled with UKBA requirements), and would be taken commencing after the May/June exam period, and no later than the end of the summer term of the first year. This is followed by the thesis/dissertation component.

b) Type of study

Campus based and off-campus.
The taught modules and project are campus based. The Industrial placement is off-campus, on the site of the industrial partner.

4. Registration periods:

The normal period of registration is between 18-24 months (depending on length of placement obtained). The maximum period of registration is 33 months.

5. Typical entry requirements:

Students are required to have a first, or upper second class honours degree (or equivalent) in an appropriate subject. Students for whom English is not their first language are required to achieve a minimum IELTS score of 6.5 with at least 6 in all four categories. However, students with non-standard qualifications are expressly encouraged to apply. In particular we give due consideration to prior professional experience gained by mature students in relevant areas of work. In such cases applicants would be expected to provide detailed information on work experience to enable its full evaluation by admissions staff. We also consider alternative qualifications, for example in different subject areas, where these are supported by relevant experience within the field of the MSc programme.

6. Accreditation of Prior Learning:

No accredited prior learning would be accepted for exemption from modules on the programme.

7. Programme aims:

The programme aims to produce highly qualified and highly motivated MSc graduates equipped to proceed either into the active GIS industry, or into further academic research positions.

The MSc in GIS with industry aims to provide students with a broad-based education in geographical information science and systems. Specifically, the objectives of this course are:

- To develop understanding in both the geographical and computational aspects of geographical information science.

- To develop understanding in the concepts and algorithms associated with handling spatially referenced data.
- To ensure students are familiar with typical GIS applications and have the capacity to translate problems into a GIS framework.
- To ensure students are aware of both the potential and the limitations of current software, spatial data resources, and information quality.
- To understand the implications for GIS of the managerial and institutional framework into which it is placed.
- To build competence in independent learning skills; research methodology; research implementation; oral presentations; report writing; web-based and multimedia communication; and team work skills.
- To expose students to the frontiers of current GIS research.

The "with industry" variant adds:

- To enable students to deploy the skills learnt in the taught component to an industrial workplace setting.
- To enable students to develop their professional skills.
- To develop students' skills in project management and team work in an industrial workplace setting.
- To develop students' career management skills.

8. Reference points used to inform the programme specification:

- QAA Frameworks for Higher Education Qualifications in England Wales and Northern Ireland
- QAA Master's Degree Characteristics
- QAA Benchmarking Statement Geography (2014)
- PDR report (May 2008)
- University Learning Strategy
- University Employability Strategy
- Graduate Survey (2014)
- First Destination Survey
- External Examiner's Reports

9. Programme Outcomes:

Intended Learning Outcomes	Teaching and Learning Methods	How Demonstrated?
(a) Subject and Professional skills		
Knowledge		
Core knowledge of GIS; the place of GIS in a geographical context; the spatial database and principles of spatial data analysis. How GIS operates in an industrial setting ("with industry")	Lectures, seminars, targeted reading, practical classes, self-directed project work, self-directed research work, field-trips. Work placement	Essays, project reports, practical exercises, oral seminar presentations, dissertation Work placement report
Concepts		
Geographical Information Systems and Geographic Information Analysis; Spatial Information Science; philosophical and practical approaches within GIS	Lectures, seminars, targeted reading, practical classes, self-directed project work, self-directed research work, field-trips	Essays, project reports, practical exercises, oral seminar presentations, dissertation

Intended Learning Outcomes	Teaching and Learning Methods	How Demonstrated?
Techniques		
Practical application of GIS; development and execution of spatial data management strategies; GIS-based analysis of spatial data Work as a GIS specialist in and industrial setting	Lectures, seminars, targeted reading, practical classes, self-directed project work, self-directed research, field trips Work placement	Practical exercises, project reports, essays, oral seminar presentations, dissertation Work placement report
Critical analysis		
Critical appraisal of published material. Ability to apply understanding of concepts with independence, rigour and self-reflexivity	Lectures, seminars, targeted reading, practical classes, self-directed project work, self-directed research work, work placement	Essays, project reports, oral seminar presentations, dissertation, work placement report
Presentation		
Presentation of: project results to professional standard; thematic data analyses to professional standard. Ability to organise and structure research material; ability to deliver written and oral seminar reports and summaries	Seminars, self-directed project work, self- directed research work, work placement	Essays, project reports, oral seminar presentations, dissertation, work placement report
Appraisal of evidence		
Ability to analyse and assess a variety of complex geographical issues. Ability to assess the relevance and quality of a substantial range of primary and secondary literatures and materials. Ability to mount and sustain an independent level of inquiry at an advanced level. Ability to identify, assemble, analyse and manage complex datasets; ability to analyse and assess a body of thematic data using appropriate techniques and data models.	Seminars, targeted reading, practical classes, self-directed project work, self- directed research work	Project reports, practical exercises, oral seminar presentations, dissertation
(b) Transferable skills		
Research skills		
Ability to: analyse complex ideas and construct sophisticated critical arguments; plan and manage projects using human geographical spatial data; locate, organise and analyse evidence; report on findings; demonstrate GIS and data analytical skills.	Core lectures, practicals and seminars, problem- oriented practical exercises, project work	Project reports, practical exercises, oral seminar presentations, exams, dissertation
Communication skills		
Ability to: deliver oral presentations; respond to questions; write clearly and concisely; make effective use of graphical summaries	Seminars, problem- solving exercises	Oral seminar presentations, essays, seminar reports, project reports, exams, dissertation

Intended Learning Outcomes	Teaching and Learning Methods	How Demonstrated?
Data presentation		
Ability to: present project results clearly and effectively; use appropriate IT resources; to undertake basic statistical summaries and analysis; employ appropriate and effective graphical representations and summaries	Targeted seminar and practical sessions, essay, seminar, dissertation and practical report feedback	Seminar reports, group-project reports, dissertation
Information technology		
The MSc is centered around information technology		
Problem solving		
Solving spatial problems	Research methods module; practical classes, project work	Project reports, practical exercises, exams, dissertation
Working relationships		
Project management; organisational skills; time management; ability to contribute and comment on ideas; working in groups	Problem-oriented practical exercises, seminars, dissertation proposal meeting, coordinator-student meetings, work placement	Oral seminar presentations, seminar reports, group-project reports, meeting coursework deadlines, work placement report
Managing learning		
Identifying a credible research project; establishing an effective research timetable; managing information; reflecting on and writing up results. Developing specialised analytical skills	Components of Induction week and research methods module; seminars, practical classes, project work	Project reports, practical exercises, oral seminar presentations, exams, dissertation
Career management		
The ability to see how skills learnt in a university can be used in 'real world' settings; appreciation of the knowledge and skills required by the GIS specialist in an industrial setting	Work placement	Work placement report

10. Special features:

The programme for the "with industry" variant is the same as the existing MSc in GIS without industry in terms of modules offered, with the addition of an industrial placement. Several of the special features listed below have been adapted from similar programmes at UoL in Computer Science and Engineering. Chapter B10 of the QAA Quality Code has been consulted, as has the University Code of Practice on the Management of Higher Education Provision with Others.

a. After completing the six taught modules in the first year of the course, students will carry out 6 or 12 months of normally paid (or unpaid if the student has access to other funds to support their studies) full-time work in an industrial placement. Tier 4 students would be restricted to the placement of shorter length (6 months) in order to comply with UKBA regulations. (note: to be confirmed subject to Uol and UKBA approval).

b. Students would be responsible for determining their eligibility and payment of income tax that related to paid income.

c. Students will be required to have achieved a minimum of 60 credits at Merit level with no outstanding (failed or incomplete) modules in the taught component of the course. Those who do not will be unable to continue on to the industrial placement and will be required to re-register for the MSc in GIS without industry.

d. Students will aim to start their placement by July of the first year and finish it no later than May/June exam period of the second year.

e. During their placement students will undertake a programme of training and practical experience which will be agreed by the industrial partner and the University, and will be

specific to the particular placement.

f. A designated member of staff (placement tutor) will act as a contact between the Department and the industrial partners hosting students.

g. The "with industry" variant relies on an industrial partner to provide work suitable for an MSc student. Following the template established elsewhere in the University (e.g. Computer Science) the placement tutor effectively *facilitates* the students' search for and identification of suitable placements with industrial partners. Clear guidance will be given to students early in the course on what is expected of them in this process, and the role of the placement tutor. Students are responsible for arranging their own placements and placements are not guaranteed. Final approval of the suitability of each placement (before the placement starts) rests with the UoL. In line with the requirement of the Draft Code of Practice on the management of higher education provision with others, a risk assessment of the proposed placement would be undertaken before a placement is agreed.

h. Placements will normally be in the UK unless a special case could be made for an overseas location, in which situation this would be subject to an additional risk assessment.

i. The QAA Code of Practice (Section 3) concerned with disabled students will guide the process of identification of placements for those students with disabilities.

j. If a student ends up with no offers of employment at the end of this process, then they will be transferred on to the MSc in GIS without industry. This will be made clear at the start of the MSc.

k. Once a student has accepted a placement offer, the industrial partner and student will be put in contact, and will arrange a start date and other details between themselves, but the placement tutor will be available to give advice. The student will be issued with a 'placement handbook' to guide them and identify student obligations. This will be adapted from the handbook currently given to MSc students elsewhere in the University (e.g., Computer Science) and is to make students aware of the University's Code of Practice on Student Placements, concerning their responsibilities and those of the University and industrial partner, and in particular that they are aware of health and safety issues.

l. The industrial partner will be required to sign an agreement accepting a set of terms and conditions relating to the placement covering such issues as finances, obligations of the industrial partner, termination of the studentship and health and safety issues. Students would be assigned a mentor within the company of the industrial partner, and there would also be a named contact within each company for the purposes of liaison with UoL.

m. Contact will be made with the student by the placement tutor over the duration of the placement. Similar to other MSc programmes elsewhere in the University (e.g. Computer Science) the placement tutor will visit the student in their workplace in the first third of the placement to ensure that both the student and industrial partner are satisfied with the progression of the placement and to inspect arrangements. In addition they will be in regular contact (usually a pro- active phone call once per quarter) to ensure the continuing success of the placement and to identify potential problems. In practice this means for the

- 6 month placement: a visit in the first two months and a call in the last three months.
- 12 month placement: a visit in the first three months and a call in each of the subsequent three month periods.

n. The placement tutor is available by phone or email and all students would retain their department personal tutor throughout the period of their placement who could also be contacted if required.

o. If the placement is terminated before the agreed time, then the placement tutor will endeavour to discover the events that caused the termination and report to the MSc exam board. If the termination is due to the student's behaviour or negligence, then the Department reserves the right to withdraw the MSc in GIS with industry, and award the student the analogous MSc in GIS without industry (on successful completion of the project/thesis component). If the circumstances are outside the student's control, then the placement tutor will endeavour to help with finding an alternative industrial partner, however it is the student's responsibility to secure a further placement. In this case, whether an alternative placement can be found or not, and with the proviso that the student must have completed at least 50% of the period of the

placement *and* complied with all other requirements such as the submission of a successful report, the student will be awarded an MSc in GIS with industry (on successful completion of the project/thesis component).

p. Students will be expected to keep a log-book recording their training and experience which is to be presented for approval to the industrial partner and the University. This is similar to other MSc programmes elsewhere at the University of Leicester (e.g., that used by the Computer Science Department and Engineering Department), as part of the 'placement handbook' supplied to each student. Satisfactory completion of this log-book is required in order to pass the placement assessment as if the return of forms/associated paperwork.

q. After the placement, the student will produce a report detailing their work, explaining how their skills fit into the team in which they worked, how this team serves the overall company, and how the company fits into the industrial sector. This report is the only assessment concerned with the industrial placement, and will be assessed on a pass/fail basis, with no credit weighting towards the MSc similar to other MSc programmes with industry at the University of Leicester (e.g., Computer Science and Engineering). The report will be assessed in terms of the professional quality displayed and evidence of engagement of the student with the placement opportunity. Appropriate evaluation feedback will be obtained from the industrial partner.

r. Any intellectual property generated during the placement will belong to the industrial partner.

s. Students who do not satisfactorily complete their industrial placement will receive an ordinary MSc in GIS without industry on successfully completing the dissertation component. They would be eligible for a diploma if the project was not passed.

t. In the second semester of the course students will participate in module GY7024 which includes elements of dissertation preparation. Once returned from their placements, students will spend a period of 3 months doing their dissertation in the Department, as per the MSc in GIS without industry. The project will be supervised and assessed within the Department. Appropriate contact with the student whilst on their placement will take place to ensure the process of the student rejoining the course to do their dissertation is as seamless as possible.

11. Indications of programme quality:

The Course has been accredited by the Royal Institute of Chartered Surveyors (RICS).

12. Scheme of Assessment

The programme will follow The University of Leicester's Regulations governing Taught Postgraduate Students (Senate Regulation 6)

13. Progression points

This programme complies with Senate Regulation 6 governing taught postgraduate programmes. In addition any student failing to obtain an average merit standing in the taught component of the MSc as per10c above will be disqualified from the "with industry" variant and invited to re-register for the MSc GIS without industry. For overseas students, the UKBA will also be informed accordingly. This may happen in June of the first year, although it could happen as late as September of the first year. Companies offering placements will be warned of this eventuality at the outset, and any contract of employment shall be made subject to satisfactory completion of the taught part of the MSc. Additionally, a candidate who does not pass their dissertation proposal at the second attempt will not be able to progress to the dissertation component of the Degree and therefore can only, at best, graduate with a PG Diploma.

Award

In order to avoid students waiting no more than 3 months there will be an additional awarding board in at least May/June of the second year when we would normally hold an MSc Board. This would be 5 or 6 months in advance of the existing board in November and would cater for those students on 6 month placements.

14. Rules relating to re-sits or re-submissions:

This programme complies with Senate Regulation 6 governing taught postgraduate programmes. In addition students would have the right to resubmit a failed placement report.

15. Additional information [e.g. timetable for admissions] Admissions

will only take place in October each year.

16. External Examiners

The details of the External Examiner(s) for this programme and the most recent External Examiners' reports can be found here.

MSc in Geographical Information Science with Industry

SEMESTER 1

Core Modules			**Credits**
GY7000	INDUCTION		0
GY7051	DISSERTATION TUTORIAL		0
GY7021	INTRODUCTION TO GIS		20
GY7022	PROGRAMMING IN R		20
GY7028	EARTH OBSERVATION AND REMOTE SENSING		20
		Semester Total	**60**

SEMESTER 2

Core Modules			**Credits**
GY7050	GIS RESEARCH METHODS IN THE FIELD		20
GY7023	SPATIAL INFORMATION SCIENCE		20
GY7027	GEOGRAPHICAL VISUALISATION		20
		Semester Total	**60**

SUMMER

Core Modules			**Credits**
GY7029	MSc DISSERTATION		60
		Total Credits	**180**

YEAR LONG

EG7081	EMPLOYABILITY	0

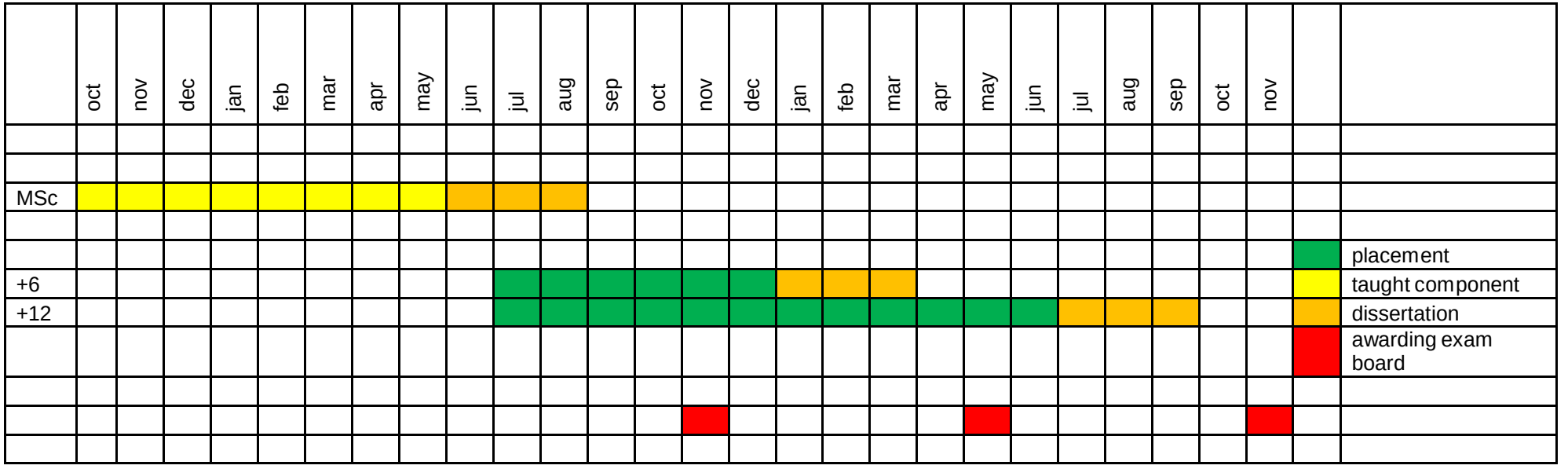
Year 1-2
Compulsory Industrial placement

Year 2 (part of)
Compulsory

GY7029	DISSERTATION*	60

Appendix 1: Programme structure (programme regulations)

*of a 3-month duration on completion of the industrial placement



Appendix 2: Module Specifications

See module specification database http://www.le.ac.uk/sas/courses/documentation