1. **Programme Title(s):** MSc/PGDip*/PGCert* in Embedded Systems and Control
   * Exit Awards only

2. **Awarding body or institution:**
   University of Leicester

3. **a) Mode of study**
   Full time or part-time

   b)   Type of study
   Campus-based

4. **Registration periods:**
   The normal period of registration is 1 year full-time, and 2 years for part-time students.
   The maximum period of registration is 2 years full-time, and 4 years for part-time students.

5. **Typical entry requirements:**
   Candidates should have at least a good second-class honours degree in a relevant subject from a
   British University or its equivalent; or a qualification recognised by the University as equivalent.
   Candidates whose first language is not English will be required to provide evidence of appropriate
   language skills.

6. **Accreditation of Prior Learning:**
   No accreditation of Prior Learning is normally considered.

7. **Programme aims:**
   This course will provide the knowledge and skills required of a professional engineer to design
   Embedded Systems for use in Control, Diagnostics, Monitoring and Communications.

8. **Reference points used to inform the programme specification:**

   - [The Frameworks for Higher Education Qualifications of UK Degree-Awarding Bodies (Qualifications Frameworks)](#)
   - QAA [Master's Degree Characteristics](#)
   - QAA Benchmarking Statement [Engineering (2015)](#)
   - 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		
State-of-the-art knowledge in the area of control, digital signal processing and software design	Lectures, Specified reading, Laboratory classes, Design exercises, Tutorials	Module examinations, Laboratory, design exercise and literature review reports, oral presentations, tutorial performance
Concepts		
Linear and nonlinear robust control paradigms, software engineering and C++ applied to real-time-systems, digital signal processing and hardware interfacing.	Lectures, Practical classes, Tutorials	Module examinations, Laboratory, design exercise and literature review reports, oral presentations, tutorial
Techniques		
State-of-the-art design and simulation software for control system design and off-line signal processing, and scheduling for real-time implementation	Laboratory classes, Individual Project and module design exercise supervision, Practical demonstrations, Lectures	Laboratory and design exercise reports, module design exercise assessment, Individual Project progress and report, Module examinations
Critical analysis		
Critical appraisal of results. Critical review of literature	Laboratory, design exercise and project supervision	Laboratory, module design exercise and literature review reports, Project progress and report
Presentation		
Presentation of scientific results, Participation in scientific discussion	Tutorials, Module seminars, Laboratory classes, module design exercise supervision, Project supervision	Module presentations, Laboratory, module design exercise and Individual project report
Appraisal of evidence		
Experimental methods, Project design	Lectures, Laboratory classes, Project supervision	Written examinations, laboratory and design exercise reports, Project reports
(b) Transferable skills		
Research skills		
Literature review, Experimental design, Laboratory skills, Data analysis	Tutorials, lectures, Laboratory classes, module design exercise work, Project supervision meetings	Module design exercise reports and oral presentations, Course work, Individual project report
Communication skills		
Report writing, Scientific Communication	Project supervision meetings, laboratory and design exercise classes, Tutorials	Laboratory, design exercise and literature review reports, Individual project report
Data presentation		
IT, Analytical and graphical methods, CAD drawings, Statistics	Project supervision meetings, course work (laboratories, module design exercises)	Seminars, Course work reports, Project reports, Module examinations
Working relationships		
Project management, Organization skills, Time management, Working in groups	Project supervision meetings, Group working in modules (laboratories and design exercises)	Module design exercise assessment, Seminar performance

Managing learning		
Study skills, Information management, Developing specialization and interests, Project management	Tutorials and seminars, Library and IT skills sessions, project supervision meetings	Course work, module design exercise assessment, project assessment

10. **Special features:**
    This course has been accredited by IET and InstMC for 5 years from the 2014 intake;

11. **Indications of programme quality:**
    The existing MSc programmes run in the Department have constantly received excellent reports from the external examiners.

12. **Scheme of Assessment**
    This programme follows the Scheme of Assessment for Master degree programmes with a structure of 120 credits of taught modules and a project of 60 credits.

    See: Senate Regulation 6 governing taught postgraduate programmes
    http://www2.le.ac.uk/offices/sas2/regulations/general-regulations-for-taught-programmes

13. **Progression points**
    Students who fail to progress to the MSc in Embedded Systems and Control project or fail the MSc in Embedded Systems and Control Project will be considered for an interim award based on the taught component of the programme.

    See: Senate Regulation 6 governing taught postgraduate programmes
    http://www2.le.ac.uk/offices/sas2/regulations/general-regulations-for-taught-programmes

14. **Rules relating to re-sits or re-submissions:**
    Re-assessment rules for taught postgraduate programmes apply. See: Senate Regulation 6 governing taught postgraduate programmes
    http://www2.le.ac.uk/offices/sas2/regulations/general-regulations-for-taught-programmes

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

16 **External Examiners**

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

Appendix 1: Programme structure (programme regulations)

Semester 1

	Credits	Dates
Induction	0	Week 1 / Semester 1
EG7012 MATLAB and CAD	15	Semester 1
EG7014 High Reliability Embedded Systems	15	Semester 1
EG7015 Robust Control	15	Semester 1

Select one from:

	Credits	Dates
EG7412 Systems Engineering and Spacecraft Systems	15	Semester 1
EG7013 Modelling and Classification of Data	15	Semester 1

Semester 2

	Credits	Dates
EG7016 Design of Discrete Systems	15	Semester 2
EG7017 Real-Time Signal Processing	15	Semester 2
EG7018 Embedded Systems for Condition Monitoring and Control	15	Semester 2
EG7040 Nonlinear Control	15	Semester 2
EG7020 Individual Project	60	Semester 2 / Summer

Appendix 2: Module Specifications

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