

MSc in Information Processing and Neural Networks
King's College London
Programme Regulations 2001/2002

September 12th, 2001

The M.Sc. in Information Processing and Neural Networks (IPNN) is an interdisciplinary degree with contributions from the Departments of Mathematics, Physics, Electrical and Electronic Engineering, and Computer Science at King's College London, and from the London School of Economics.

It was accepted as an MSc course of the University of London by the Boards of Physics, Engineering and Mathematics in 1989, and approved in 1990 by the Senate of King's College London as a course leading to the award of an MSc degree in the Faculty of Science (presently: the School of Physical Sciences and Engineering).

The regulations were revised in September 2000, to comply with the 'Core Marking Scheme for College-Based Masters Degrees' of King's College London, and in September 2001, to unify MSc regulations within the Mathematics Department. Examination procedures are laid down in the 'Regulations for the Conduct of Examinations for College-Based Masters Degrees' of King's College London.

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1 Additional Entry Requirements

Normally a first class or upper second class honours degree (or equivalent) in Mathematics, Physics, Computer Science or an approved related subject. A sound background in basic mathematics, in particular familiarity with standard concepts of calculus, linear algebra, differential equations and elementary probability theory.

2 Modes of Attendance & Programme Duration

The programme may be taken on a full-time or part-time basis.

Full-time duration: one calendar year. Part-time duration: two calendar years.

3 Curriculum

3.1 General Programme Structure

Each student must attend the two one-semester core courses of the programme (see below) and six further one-semester courses, chosen from the list of approved optional courses (see below) in consultation with the course advisor ¹:

semester I:	core course:	CM451Z	Neural Networks †
	options:	NN5/EEM210	Communication Theory
		ST410	Basic Time Series (LSE)
		NN6/EEM345	Digital Signal Processing
		CMFM01	Applied Probability and Stochastics
		CMFM02	Introduction to Derivatives Pricing
		CSMNAN	Numerical Analysis
semester II:	core course:	G30	Advanced Neural Networks
	options:	MA314	Theory of Algorithms (LSE)
		G31/NN4	Information Theory in Neural Networks
		CM335Z/352Y	Non-Linear Dynamics / Chaotic Dynamics
		G32/NN13	Statistical Mechanics of Neural Networks

Note: A student's course list may not contain courses which he/she has already been examined in earlier as part of any undergraduate or postgraduate programme at the University of London².

A student will also undertake an individual research project, following the written examinations, leading to a thesis of approximately 10000 words.

3.2 Full-Time Students

- In the first semester full-time students normally attend one core course (CM451Z, Neural Networks) and three further optional courses; in the second semester they normally attend one core course (G30, Advanced Neural Networks) and three further optional courses.
- Students may, with the approval of the course advisor, alternatively attend three courses in one semester and five in the other semester.
- Full-time students will carry out their research and write their theses after the summer examination period, during the months June, July and August.

¹This list contains two undergraduate courses, marked †

²If this rule applies to a core course, it must be replaced by one of the selective courses in the above list.

3.3 *Part-Time Students*

- In the first year part-time students normally attend one core course (CM451Z, Neural Networks) and three further optional courses; in the second year they normally attend one core course (G30, Advanced Neural Networks) and three further optional courses.
- Students may, with the approval of the course advisor, alternatively attend five courses in the first year and three in the second year.
- Part-time students normally spread their research and thesis writing over the second year, and are expected to devote to it an amount of time equivalent to that of the full-time students (i.e. three months full-time).

4 **Assessment**

4.1 *Methods and Timing*

- Each lecture course will have one two-hour unseen written examination. Most written examinations will be in May and early June. Dependent on a student's actual selection of optional courses, some first semester courses may be examined in January.
- Each student will write a thesis on an individual research project of approximately 10000 words. The thesis is due early September. The precise deadline for handing in the theses is announced in June. The examiners may conduct an oral examination on the subject of the research project to decide on the final mark of the thesis.

4.2 *Progression Requirements*

In order to progress to the research project, students will be required to have achieved a pass (i.e. 50% or more) in at least five of the written examinations. In those cases where the relevant examination results are available only after June 1st (when the research project will have started), and are found to be insufficient for the student to progress, a student will be asked to terminate the project. In borderline cases the examiners may conduct an oral examination to decide on progression.

4.3 *Marks and Grades for Individual Courses and Project*

- The pass mark for each element of the programme (individual lecture courses and thesis) is 50%. The correspondence between literal marks and percentage marks is as follows:

0-49	F	Fail
50-59	C	Pass
60-69	B	Second Class
70-100	A	First Class

- The student's thesis will be assessed independently by two examiners, the first examiner normally being the project supervisor. Each examiner will assign a numerical grade, as defined above, reflecting the candidate's performance in relation to each of the following four criteria:
 1. Selection of Sources
 2. Original Contributions
 3. Diligence
 4. Presentation

These four specific grades, together with a recommended overall numerical and literal grade, as defined above, are incorporated in a written report. Grade F should be awarded if the material, though correct, is judged to be wholly copied in a mechanical manner.

- For all grades examiners should satisfy themselves that the thesis is the work of the candidate, and should take into account the English style and manner of presentation, the readability and coherence of the report as a whole, the difficulty of the subject matter, as well as the quality of the introduction and reference list and the way the latter is co-ordinated with the text. Reports substantially longer than 10000 words should be penalised.

4.4 *Marking Scheme and Classification Boundaries*

- **Relative Weight of Programme Elements:**
The eight lecture courses each contribute 8% to the overall mark
The research project contributes 36% to the overall mark
- **Requirements for a **P**ass:**
 1. an overall mark of at least 50%
 2. a mark of at least 50% for the project
 3. a pass (i.e. 50% or more) in at least 6 lecture courses
- **Requirements for the Award of **M**erit:**
 1. an overall mark of at least 60%
 2. a mark of at least 60% for the project
 3. a pass (i.e. 50% or more) in at least 6 lecture courses
 4. the above marks were achieved at the first attempt
- **Requirements for the Award of **D**istinction:**
 1. an overall mark of at least 70%
 2. a mark of at least 70% for the project
 3. a pass (i.e. 50% or more) in at least 6 lecture courses
 4. the above marks were achieved at the first attempt

4.5 *Provisions and Conditions for Re-Assessment*

- A candidate who fails to satisfy the written examination component of the requirements for the award of the MSc in Information Processing and Neural Networks may, at the discretion of the Board of Examiners, be re-assessed on one occasion.
- The re-assessment shall consist of resitting, at the next following examination, some or all of those written examinations for the courses which the candidate failed at the first attempt.
- Where a candidate has been permitted by the Board of Examiners to be re-assessed in an element of the written examinations, then the greater of the marks in that element shall be considered when determining whether the candidate has passed the written component of the MSc.
- A candidate who fails the project at the first attempt must re-register for the project in the next academic year. The second attempt must be completed in the time-frame allocated for the project in that academic year.
- A part-time student who fails one or more examinations in his/her first year of study may, at the discretion of the Board of Examiners, be permitted to proceed to his/her second year of study.