FACULTY OF SCIENCE

DEPARTMENT OF PHYSICS

PHYSICS WITH ADVANCED RESEARCH

Master of Physics in Physics with Advanced Research
Bachelor of Science with Honours in Physics
Bachelor of Science in Physics
Diploma of Higher Education in Physics
Certificate of Higher Education in Physics

These regulations are to be read in conjunction with General Academic Regulations – Undergraduate, Integrated Master and Professional Graduate Degree Programme Level.

Credit Transfer and Recognition of Prior Learning

1. See General Academic Regulations – Undergraduate, Integrated Master and Professional Graduate Degree Programme Level.

2. In addition, direct entry to year 4 of the programme may be granted to applicants who possess:

    i. a first cycle Bologna degree in Physics meeting an approved standard of performance with regard to level of study and academic attainment; or
    ii. a qualification deemed by the Head of Department (or nominee) to be equivalent to (i) above; and
    iii. an approved standard of performance in a recognised test in English as a foreign language.

3. Such applicants will be deemed to possess 360 credits.

Place of Study

4. The optional Industrial Placement, normally taken during the summer vacation following third year, is expected to be completed off campus.

Curriculum (Full-time study)

5. All students shall undertake an approved curriculum as follows:

First Year

All full-time students shall undertake modules amounting to 120 credits as follows:

Compulsory Modules

Module Code	Module Title	Level	Credits
PH180	Experimental Physics	1	20
PH181	Mathematics for Physics 1A	1	20
PH182	Mathematics for Physics 1B	1	20
PH183	Mechanics and Waves	1	20
PH184	Quantum Physics and Electromagnetism	1	20

PH185	Computational and Physics Skills	1	20

Or other such modules as approved by the Advisor of Study

Second Year

All full-time students shall undertake modules amounting to 120 credits as follows:

Compulsory Modules

Module Code	Module Title	Level	Credits
PH280	Experimental Physics	2	20
PH281	Mathematics for Physics 2A	2	20
PH282	Mathematics for Physics 2B	2	20
PH283	Mechanics and Waves	2	20
PH284	Quantum Physics and Electromagnetism	2	20
PH285	Computational and Physics Skills	2	20

Or other such modules as approved by the Advisor of Study

Third Year

All full-time students shall undertake modules amounting to 120 credits as follows:

Compulsory Modules

Module Code	Module Title	Level	Credits
PH384	Quantum Physics and Electromagnetism	3	20
PH386	Condensed Matter Physics	3	20
PH387	Gasses, Liquids and Thermodynamics	3	20
PH389	Mathematical Physics	3	20
	AND EITHER		
PH380	Experimental Physics I	3	40
	OR		
PH390	Experimental Physics II	3	20

Optional Modules

If a student has selected PH390 above then they are required to select 20 credits from the list below to bring the credit total to at least 120.

Module Code	Module Title	Level	Credits
PH385	Communicating Physics	3	20
PH388	Computational Physics	3	20
PH465	Industrial Project*	4	20

Other such modules as approved by the Advisor of Study
*PH465 is also available as an optional module in Fourth Year and may only be taken once.
Not all optional modules on this list will necessarily be available in each academic year.
Please check your programme handbook for confirmation of which optional modules will run.

Fourth Year

All full-time students shall undertake modules amounting to 120 credits as follows:

Compulsory Modules

Module Code	Module Title	Level	Credits
PH498	Physics with Research Specialisation*	4	120

*PH498 Physics with Research Specialisation comprises of PH450 Project (40 credits) along with 80 credits of Optional Modules.

Optional Modules

Not all optional modules on this list will necessarily be available in each academic year.
Please check your programme handbook for confirmation of which optional modules will run.

Module Code	Module Title	Level	Credits
PH452	Topics in Physics	4	20
PH453	Topics in Solid State Physics	4	20
PH454	Topics in Nanoscience	4	20
PH455	Topics in Photonics	4	20
PH457	Topics in Theoretical Physics	4	20
PH459	Topics in Atomic, Molecular and Nuclear Physics	4	20
PH422	Topics in Quantum Physics	4	20
PH421	Applied High Performance Computing	4	20
PH423	Topics in Complex and Nonlinear Systems	4	20
PH465	Industrial Project*	4	20

Other such modules as approved by the Advisor of Study
*Students may, with the approval of the Advisor of Study, also undertake this module during the summer vacation following Fourth Year provided they have not taken the module previously.

Fifth Year

All full-time students shall undertake modules amounting to 160 credits as follows:

Compulsory Module

Module Code	Module Title	Level	Credits
PH598	Physics*	5	160

*PH598 Physics comprises of PH570 Project (100 credits) along with 60 credits of Optional Modules.

Optional Modules

Not all optional modules on this list will necessarily be available in each academic year. Please check your programme handbook for confirmation of which optional modules will run.

Module Code	Module Title	Level	Credits
PH551	Research Skills	5	20
PH552	Advanced Topics in Physics	5	20
PH553	Advanced Topics in Solid State Physics	5	20
PH554	Advanced Topics in Nanoscience	5	20
PH560	Advanced Topics in Electromagnetism and Plasma Physics	5	20
PH562	Advanced Topics in Quantum Optics	5	20
PH504	Advanced Topics in Quantum Physics – Quantum Technologies	5	20
PH510	Advanced Topics in Computational Physics	5	20

Other such modules as approved by the Advisor of Study

Curriculum (Part-time study)

6. Students studying on a part-time basis will normally take modules amounting to 60 credits in each year.

Progress

7. To progress to the second year of the programme, see General Academic Regulations – Undergraduate, Integrated Master and Professional Graduate Degree Programme Level.

8. To progress to the third year of the programme, see General Academic Regulations – Undergraduate, Integrated Master and Professional Graduate Degree Programme Level.

9. To progress to the fourth year of the programme, see General Academic Regulations – Undergraduate, Integrated Master and Professional Graduate Degree Programme Level.

10. To progress to the fifth year of the programme, see General Academic Regulations – Undergraduate, Integrated Master and Professional Graduate Degree Programme Level.

Progress (Part-time study)

11. See General Academic Regulations – Undergraduate, Integrated Master and Professional Graduate Degree Programme Level.

Final Assessment and Classification

12. The final classification for the degree of MPhys in Physics with Advanced Research will normally be based on the first assessed attempt at compulsory and specified optional modules at Levels 4 and 5.

13. The degree in MPhys in Physics with Advanced Research will be classified in accordance with the General Academic Regulations – Undergraduate, Integrated Master and Professional Graduate Degree Programme Level.

Award

14. **MPhys in Physics with Advanced Research:** Notwithstanding the General Academic Regulations – Undergraduate, Integrated Master and Professional Graduate Degree Programme Level, in order to qualify for the award of the degree of MPhys in Physics with Advanced Research, a candidate must have accumulated no fewer than 640 credits from the programme curriculum together with a pass in PH570 Project.

15. **BSc Honours in Physics:** See General Academic Regulations – Undergraduate, Integrated Master and Professional Graduate Degree Programme Level.

16. **BSc in Physics:** See General Academic Regulations – Undergraduate, Integrated Master and Professional Graduate Degree Programme Level.

17. **Diploma of Higher Education in Physics:** See General Academic Regulations – Undergraduate, Integrated Master and Professional Graduate Degree Programme Level.

18. **Certificate of Higher Education in Physics:** See General Academic Regulations – Undergraduate, Integrated Master and Professional Graduate Degree Programme Level.

Transfer

19. A candidate who fails to meet the progression requirements in any of years 1 – 4 (75% CWA) will normally be transferred to the MPhys in Physics. If a candidate fails to achieve a CWA of 55% they will normally be transferred to the BSc in Physics. See General Academic Regulations – Undergraduate, Integrated Master and Professional Graduate Degree Programme Level.