CIR-RPG

香港城市大學
City University of Hong Kong

Curriculum Information Record for a Research Degree Programme

Department of Materials Science and Engineering
Effective from Semester A 2021/22
For Students Admitted with Catalogue Term
Semester A 2019/20 to Semester B 2022/23

This form is for completion by the College/School for research degree programme. The information provided on this form is the official record of the Programme. It will be used for City University's database, various City University publications (including websites) and documentation for students and others as required.

Please refer to the *Explanatory Notes* attached to this form on the various items of information required.

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Part I

Programme Title (in English) : Master of Philosophy

(in Chinese) : 哲學碩士

Award Title (in English) : Master of Philosophy

(in Chinese) : 哲學碩士

Programme Aims

This programme aims to train and produce graduates who can contribute to the extension of knowledge in their chosen subject areas, preparing them for advanced research at the PhD level or professional careers in science and engineering.

Programme Intended Learning Outcomes (PILOs)

(state what the student is expected to be able to do at the end of the programme according to a given standard of performance)

Upon successful completion of this Programme, students should be able to:

1. master the content and methods of their chosen subject areas;

2. apply research methodology/tools to conduct independent research for discoveries;
3. formulate and carry out research in their chosen subject areas for discoveries;
4. communicate effectively with the learned community about the research process and discoveries;
5. contribute to knowledge and discoveries through the process of research;
6. build up ethical and social responsibilities;
7. perform multi-disciplinary research with new ideas;
8. strengthen independent learning and researching abilities to suit future versatile employment requirements;
9. enhance proficiencies in scientific language and skills in numerical and IT solutions;
10. collaborate effectively and healthily with colleagues.

Part II Programme of Study

1. Research Area(s) in which research students will be admitted to:

- Devices and Systems
- Laser/Opto-electronics/Condensed Matter Physics
- Materials Science and Engineering
- Nanomaterials and Nanotechnology
- Biomedical Physics and Engineering.

2. Programme Core Courses:

Nil

3. Research Methodology and Ethics Course: (2 credits)

Course Code	Course Title	Level	Units Worth	Remarks
MSE8001	Survival Skills for Research Scientists	R8	2	

4. Programme Electives: (5 credits)

Course Code	Course Title	Level	Units Worth	Remarks
MSE8011	Thermodynamics of Materials	R8	3	
MSE8012	Electronic Properties of Crystalline Solids	R8	3	
MSE8013	Crystallography, Symmetry and Defects of Materials	R8	3	
MSE8014	Phase Transformation in Materials	R8	3	
MSE8015	Theory and Practice of Transmission Electron Microscopy and Related	R8	3	

	Spectroscopy			
MSE8016	Materials Characterization Techniques	R8	3	
MSE8017	Materials Chemistry	R8	3	
MSE8018	Mechanics of Materials	R8	3	

5. Other Requirements:

Please provide a general description *OR* fill in additional rows in the following table, as appropriate.

Course Code	Course Title	Level	Units Worth	Remarks
SG8001	Teaching Students: First Steps	R8	1	
--	Collaborative Institutional Training Initiative (CITI) programme	n/a	n/a	An online training course on research integrity. Compulsory for RPg students who admitted in 2018/19 and thereafter. To be completed in the first year of study. Details are available in SGS website.

6. Qualifying Examination (for PhD only):

Nil

7. Qualifying/Annual Report Submission:

Students must submit a qualifying report (typed in English) within the specified qualifying period as follows:

- Full-time: Within 6–12 months from start of study
- Part-time: Within 9–18 months from start of study

A qualifying report should include a survey of the relevant literature, an identification of a specific research topic, the research methodology and a discussion on possible outcomes.

After the qualifying period, students must submit progress reports (typed in English) on an annual basis until they have submitted the final version of their thesis for oral examination and completed any other academic requirements.

8. Thesis:

The thesis is the most important part of the MPhil study. The thesis demonstrates the student's research capacity and independent research work, and shows his/her ability to design and conduct experiments, analyze and formulate physical and engineering problems, correlate and verify data, explain problems lucidly and reach sound conclusions. The output of the thesis is based on the student's original ideas. The MPhil thesis has to represent evident contribution to the field of study.

Normally, students are expected to submit their thesis not earlier than three months before the end of the (normal) study period. Early submission of a thesis requires special approval from the College/School.

Students must submit a thesis for examination by the end of their maximum study period or the stipulated study period.

9. Additional Notes:

Students are also required to complete a compulsory 1 credit unit course "Teaching Students: First Steps" (SG8001). The credit unit earned from SG8001 will not be counted towards the minimum coursework requirement.

The student's research project is normally supported by RGC projects or other projects acquired by a supervisor. Therefore the research interest of the student is aligned with the research project of the supervisor. In accordance with the topic of the thesis, a qualifying panel (supervisor and two other experts in the field) prescribes the elective courses taken by the student. The qualifying panel monitors the research progress and annually evaluates it based on the written progress report, oral presentation and oral examination. As coordinated by the SGS, the final research output presented in the form of thesis is assessed by an internal examiner and an external examiner who may recommend thesis for oral examination if it meets the standard required for MPhil theses. Other details can be found in the Guidebook for Research Degree Studies published by the SGS.

Prepared / Last Updated by

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Explanatory Notes for Completing CIR-RPG

1. Research Area

This refers to the research area(s) in which the University offers MPhil and PhD studies.

2. Programme Title

This is the full title of the programme in both English and Chinese. One copy of CIR-RPG should be filled in for each research degree programme (i.e. MPhil or PhD) in each research area which is defined by the name of the Department/School.

3. Award Title

This is the title in both English and Chinese granted by the University upon successful completion of the programme.

4. Number of Credit Units Required for the Award

This specifies the number of credit units required to obtain an award. Students will need to accumulate credit units at or more than this level in order to gain an award.

5. Programme Aims

This is a brief description of what the programme is about and what it intends to achieve.

6. Programme Intended Learning Outcomes (PILOs)

PILOs state what the student is expected to be able to do at the end of a programme according to a given standard of performance. The outcomes statements should be written in a manner which is clearly understood both by students and staff. The outcomes should be achievable and assessable. PILOs should address a number of areas, e.g. subject area, requirements of professional bodies, if any, graduate outcomes of CityU's research degree graduates provided below, etc.

Graduate Outcomes of CityU's Research Degree Graduates:
On graduation, City University research degree graduates will be able to:

- *Apply a thorough understanding of the fundamental concepts of their research areas;*
- *Adopt excellent methodological, and relevant ethical principles in the generation of independent and innovative research;*
- *Generate strategies to develop internationally competitive research in their fields of expertise;*
- *Apply effective communication skills in relation to research.*

7. Programme of Study

This consists of three main parts – Programme Core Courses, Programme Electives and Thesis. Students are required to fulfil the criteria stipulated in each part so as to obtain an award.

Please refer to the following programme structure for research degree programmes for filling in this section:

MPhil

	Coursework Structure applying to 2019/20 intake cohort and thereafter
Core Courses	N/A
Elective Courses	At least 2 CUs of research methodology[#] and ethics course at postgraduate level and other postgraduate courses so as to satisfy the minimum coursework requirement of 7 CUs
Total	**7 CUs**
Other Requirement *(not counted towards the University's coursework requirement)*	Teaching Students: First Steps (SG8001) (1 CU)

CU = credit unit

PhD

	Coursework Structure applying to 2019/20 intake cohort and thereafter
Core Courses	At least 9 CUs at research level[@]
Elective Courses	At least 2 CUs of research methodology[#] and ethics course at postgraduate level and other postgraduate courses so as to satisfy the minimum coursework requirement of 14 CUs
Total	**14 CUs**
Other Requirement *(not counted towards the University's coursework requirement)*	Teaching Students: First Steps (SG8001) (1 CU)

CU = credit unit

[#] College, school or departmental seminars related to research methodology are not considered as equivalent to the Research Methodology course if they consist of student presentations only, without a teaching component.

[@] All core courses should be assessed in gradable mode (A+, A, …F), instead of pass-fail mode.

8. Programme Core Courses

These are the compulsory courses as required by the relevant faculty or school.

9. Programme Electives

These are courses from which students select courses based on their interests.

10. Additional Notes

This may consist of information on any special features of the programme.

11. Amendments/Revisions to CIR-RPG

Amendment or revisions to the information provided in CIR-RPG are subject to the procedures outlined in the University's guidelines on approval authorities for academic and research matters. College and School Boards should consider delegation of authority to C/SGSC as necessary to facilitate innovation and change as appropriate.