

# Graduate Programme in Mathematics by Research (PhD)

## Graduation Requirements for students admitted from AY2023/24 onwards

1. Pass the PhD Qualifying Examination (QE) by the 24<sup>th</sup> month of the candidature, and
2. Pass MA5198 Graduate Seminar Course in Mathematics, and
3. **For those with a Master of Science (MSc) in Mathematical Sciences from a reputable university (subject to departmental approval):**
  - May apply to transfer credit of up to 3 courses or 12 Units, whichever comes first, to their current candidature;
  - Pass five other MA courses at level 5000 or higher, with at least two from the Basic Course List and a minimum of 20 Units;

### **For those without MSc qualification:**

- Pass eight other MA courses at level 5000 or higher, with at least four from the Basic Course List and a minimum of 32 Units;

### • **Basic course list for the 2 student categories:**

- *MA5203 Graduate Algebra I\**
- MA5204 Commutative and Homological Algebra
- MA5218 Representation Theory
- MA5205 Graduate Analysis I
- MA5206 Graduate Analysis II or MA5217 Graduate Complex Analysis
- MA5209 Algebraic Topology
- MA5210 Differentiable Manifolds
- MA5213 Advanced Partial Differential Equations
- MA5232 Modelling and Numerical Simulations
- MA5233 Computational Mathematics
- MA5241 Computational Harmonic Analysis
- MA5243 Advanced Mathematical Programming
- MA5245 Advanced Financial Mathematics
- MA5248 Stochastic Analysis in Mathematical Finance
- MA5249 Stochastic Processes and Algorithms
- MA5259 Probability I
- MA5260 Probability II
- MA5269 Optimal Stopping and Stochastic Control in Finance

*\* Department will not offer this course in the upcoming AY and is subjected to availability.*

4. Obtain satisfactory grade in Advanced English course, for a foreign student who is not exempted from it, and
5. Obtain a minimum Grade Point Average (GPA) of 3.50 or an average grade of at least B, and
6. Complete a thesis to the satisfaction of the examination panel.

## Notes on the PhD QE

There are two components for the PhD QE and a student has to pass both components to be considered to have passed the PhD QE.

1. A student must pass the comprehensive (written) examination, not later than week 2 of the fourth semester of the candidature, before he/she is allowed to sit for the qualifying (oral) examination.
2. A student must pass the qualifying (oral) examination by the fourth semester (24th month of the candidature).
3. To be eligible to sit for the qualifying (oral) examination, a student must have passed the comprehensive (written) examination, and passed at least three of the courses mentioned in points 3 above, and obtained a minimum GPA of 3.50 in at least two of the courses passed