ICE-EM Access Grid Room Project

Subject Information Form

Administration

1. Department and institution

   School of Mathematics and Applied Statistics

   University of Wollongong

2. Subject name and code

   Measure Theory and Lebesgue Integration

3. Handbook entry URL, subject homepage URL, host honours student hand-out URL

   - Handbook entry URL

     N/A

   - Subject homepage URL

     N/A

   - Host Honours student hand-out URL

     TBA

4. **Lecturer** name and contact details

   Name: Nathan Brownlowe and Michael Whittaker

   Phone: 02 4221 5150 and 02 4221 4241

   Email: nathanb@uow.edu.au and mwhittak@uow.edu.au

   Homepage: http://www.uow.edu.au/~nathanb/ and www.michaelwhittaker.ca

5. **Honours coordinator** name and contact details

   Name: Xaioping Lu

   Phone: 02 4221 3840

   Email: xiaoping_lu@uow.edu.au

6. Start date, end date, number of teaching weeks

   Start date: 27 February

   End date: 9 June

   Number of teaching weeks: 13

7. Contact hours per week

   2 hours

8. Description of electronic access arrangements for students (for example, WebCT)

   AGR lecture delivery if local student numbers do exceed the capacity of the UOW Access Grid room. Board notes available by request where circumstances warrant this.

Academic

1. Overview of subject content

    We will look at the problems with the Riemann integral, and introduce a new integration theory called Lebesgue integration. We will examine its advantages over Riemannian integration, and we will cover a number of topics as listed below.

2. Detailed syllabus, preferably week by week

    Topics covered are:
    - Review of the Riemann Integral
    - Measure and measurable sets
    - Measurable functions
    - The Lebesgue integral
    - L^p spaces
    - Product measures
    - Fubini's Theorem

3. Detailed breakdown of assumed prerequisite knowledge, including host prerequisite subject URLs

    Basic real analysis such as UOW's MATH222 Continuous Mathematics

    https://sols.uow.edu.au/owa/sid/CAL.SUBJECTINFO?p_subcode=MATH222&p_year=2004&p_source=UgInfCourse

4. Assessment

    (i)   Exam/assignment/class work breakdown

            Exam   50 %

            Assignment   50 %

    (ii)   Assignment due dates

            TBA

    (iii)   Approximate exam date

            20 June

5. Required student resources

- Text/printed notes

  None

- Software (local access)

  None

Institutional Honours Details

1. Weight of subject in total honours assessment at host department

   XXXX

2. Thesis/subject split at host department

   XXXX

3. Honours grade demarcators at host department

   - H1 = range %

   - H2a = range %

   - H2b = range %

   - H3 = range %