CLASS DESCRIPTION FORM

CL951 Groundwater Flow Modelling

Class Registrar: Prof Robert M Kalin  
Taught To (Course): MSc & Level 5

Other Lecturers Involved: British Geological Survey Staff  
Credit Weighting: 10  
Semester: 2

Assumed Prerequisites: Compulsory/ optional/ elective class  
Academic Level: MSc & Level 5

Class Format and Delivery (hours):

<table>
<thead>
<tr>
<th>Lecture</th>
<th>Field</th>
<th>Laboratory</th>
<th>Project</th>
<th>Assignments</th>
<th>Private Study</th>
<th>Total</th>
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<tbody>
<tr>
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<td></td>
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Educational Aim

This class aims to

Provide the student with an understanding of:

• Groundwater Flow Modelling Principals
• Well Hydraulics and Pumping Tests Analysis using Groundwater Flow Models
• Contaminant Transport Modelling
• Geochemical Modelling

Learning Outcomes

On completion of the class the student is expected to be able to

Develop conceptual and computer based models of groundwater aquifer systems
Synthesise real-world data and undertake predictive evaluation of impacts on groundwater quality
Be conversant in the interpretation of modelling practice and evaluation of groundwater flow model use

Syllabus

The class will teach the following:

Introduction the groundwater flow modelling and GIS/GUI Interface
2-Day Hands-On Workshop by British Geological Survey staff on ZOOM (GW Flow Model)
1-Day Workshop on Geochemical Modelling of Groundwater
Computer Laboratory development of a working groundwater flow model.

Assessment of Learning Outcomes

Criteria

For each of the Class Learning Outcomes the following criteria will be used to make judgements on student learning:

Students will be assessed on the development of conceptual and computer based models of groundwater aquifer systems (Coursework 1 25% and Coursework 2 40%)
Students will be assessed on their skills to synthesise real-world data and undertake predictive evaluation of impacts on groundwater quality and show they are conversant in the interpretation of modelling practice and evaluation of groundwater flow model use (Coursework 3 35%)

The standards set for each criterion per Class Learning Outcome to achieve a pass grade are indicated on the assessment sheet for all assessment.
12 Principles of Assessment and Feedback

Students will be encouraged to engage during hands-on workshops and will be provided one-to-one feedback and tutoring during computer modelling sessions throughout the semester. Informative Feedback on coursework one within two weeks of submission will help to guide the students in the preparation of the second two coursework assignments.

Assessment Method(s) Including Percentage Breakdown and Duration of Exams

<table>
<thead>
<tr>
<th>Examinations</th>
<th>Courseworks</th>
<th>Projects</th>
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<tbody>
<tr>
<td>Number</td>
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<td>Weighting</td>
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Indicate which learning outcomes (L01, L02 etc) are to be assessed by exam/coursework/project as required.

Coursework / Submissions deadlines:

Week 10, Week 11 (after Spring Break), Week 15

Resit Assessment Procedures:

All Coursework must be submitted

PLEASE NOTE:

Students need to gain a summative mark of 40% / 50% (please delete as appropriate) to pass the class. Students who fail the class at the first attempt will be re-examined during the August diet. This re-examination will consist entirely of exam / coursework / viva (please delete as appropriate).

Recommended Reading

All information required for the module is provided on MyPlace

Additional Student Feedback

(Please specify details of when additional feedback will be provided)

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<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Room No</th>
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<tr>
<td>24th Feb</td>
<td>4pm</td>
<td>GH6.13</td>
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Session: Feedback session for Coursework and Module

Approved:

Course Director Signature:

Date of Last Modifications:

(Updated November 2010)
CLASS TIMETABLE

Class Code: CL951  Class Title: Groundwater Flow Modelling

Brief Description of Assessment:

Three Coursework Assignments provided on day one of module, deadlines reflect need of student to become proficient in groundwater flow modelling before completing the assignments.

Assessment Timing:-

Indicate on the table below the Start/Submission dates for each Assignment/Project and the timing of each Exam/Class Test(s).

<table>
<thead>
<tr>
<th>Semester</th>
<th>WK1</th>
<th>WK2</th>
<th>WK3</th>
<th>WK4</th>
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<th>WK6</th>
<th>WK7</th>
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<th>WK11</th>
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