1 Introduction

Welcome to the Scottish Mathematical Sciences Training Centre. SMSTC is a large joint venture, relying on contributions from staff and students across Scotland. Some aspects of the system are therefore likely to be unfamiliar, and these notes are intended to provide both an introduction and a source of information that you can refer back to over the coming year.

The overall aim of SMSTC is to provide broadening training for first-year PhD students. In the past, a perceived weakness of the mathematics PhD in the UK was that although students gained a great deal of in-depth knowledge of their subject speciality, this was at the expense of wider mathematical learning. SMSTC courses aim to redress that balance. The courses we run are intended to be useful to students not in that research area, as well as those who are. So, don't hesitate to spread your wings and learn about something different.

We hope you enjoy SMSTC and find it intellectually enriching. Thank you for your participation.

Dugald Duncan and Tom Leinster
SMSTC Director and Deputy Director
on behalf of the Academic Steering and Management Group (ASMG)

2 Streams and modules

There are eight streams (subjects), each of which is split into two self-contained one-semester modules. Students can take both modules, just the first, or just the second. Students should check they have suitable prerequisites. Each module is assessed independently using either one or two assignments.
3 Stream and module overview document
Each stream has an overview document, available on the web site and also handed to participants at the Opening Symposium. It should contain details of prerequisites, assessments, assessment schedule (including timings), a syllabus and the teaching team for each of the modules.

4 Opening symposium
This takes place in early October. A representative of each stream will give a short presentation on that subject. One purpose of the event is to give students a flavour of a wide range of interesting topics in mathematics, and another is to help those who have not finalised their module choices to come to a decision.

Another part of the purpose of the Symposium is for participants to get to know each other, and to meet some of the staff. Everyone is strongly encouraged to stay overnight. There is a dinner for everyone attending and the chance to learn something about curling (or bowls if the ice is not available).

5 Weekly schedule
We run two 10-week semesters, October-December and January-March with the following weekly schedule. This was agreed after extensive consultations at the start of SMSTC in 2007 to avoid clashes with long-standing seminar series etc.

<table>
<thead>
<tr>
<th>Time</th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
</tr>
</thead>
<tbody>
<tr>
<td>1:00-3:00</td>
<td>Algebra</td>
<td>Statistics</td>
<td>Methods</td>
<td>Geometry + Topology</td>
</tr>
<tr>
<td>3:30-5:30</td>
<td>Probability</td>
<td>Applied Analysis</td>
<td>Pure Analysis</td>
<td>Mathematical Models</td>
</tr>
</tbody>
</table>

6 Lecture notes and slides
Lecturers will normally make notes and slides available on the SMSTC web page in advance of the lecture. Books may be used as supplementary material.

7 Lecture and video conference technology
Taking a class via videolink can take a little getting used to. Nevertheless, you are very much encouraged to engage. Questions are warmly welcomed by lecturers.

To avoid stray noise (or unguarded comments!) being broadcast to everyone else, please keep your microphone switched off unless you want to speak to the whole group.

The technology usually works well, but in case of difficulty, there are normally technical support staff at each university available to help. Look out for local documentation about the operation of the video conference kit and who to call for help.

8 Tutorial questions
Tutorial style questions/solutions will be provided for the students on the SMSTC web site. However, SMSTC stream teams are not responsible for running tutorial support; this is organised by each university individually and could be classes or a designated person who will deal with any questions on request.
9 Assessment of modules
This section applies to PhD students of the partner departments.

- The modules within each stream are assessed independently of each other.
- Each module’s assessment regime should consist of 1 or 2 assignments, taking a total of 10-12 hours of work for an “average” student.
- You should be given advance warning of number of assignments and their deadlines, and usually given at least 2 weeks to complete each one, with a final deadline no more than 4 weeks after the end of the semester.
- You may be encouraged to work collaboratively to learn the topic, but you should write out your own assignment solutions. The submission cover sheet asks you to sign a declaration that it is your “own work”.
- Identical scripts are not acceptable, and suspected plagiarism or misconduct of any kind is taken very seriously by both SMSTC management and partner departments.
- Individual assignments may be awarded either a percentage or letter grade, but the overall result for the module will be a letter grade.
  - Letter grades:
    A = excellent/very good (e.g. more than 70% or 75%)
    B = good (e.g. 60-69%)
    C = leaving something to be desired (e.g. 50-59%)
    U = unclassified
- Your marks/grades are visible to the stream leaders/lecturers, your own university staff, and SMSTC staff. They are not visible to other students.

10 Transcripts and certificates of achievement/attendance
For several reasons, SMSTC is unable to issue transcripts or certificates confirming participation. Students who need such documents are advised to contact their own department (e.g. the postgraduate tutor or adviser). Students who have participated in SMSTC may also wish to print out their results from the web site, once they become available.