

SCOTTISH MATHEMATICAL SCIENCES TRAINING CENTRE

Notes for Teaching Staff (revised September 2019)

1 Introduction

These notes are intended as an aide-mémoire for current Lecturers, Module Leaders (MLs) and Theme Heads (THs) and as an introduction for those new to the job. The job of the module teams, and particularly of the TH, is to ensure that appropriate teaching and assessment takes place, and that results are reported to the students as soon as reasonable and to ICMS when requested at the end of the academic year.

Many students take three SMSTC modules at one time, so a typical student on your module will not be working in that research area. Please bear in mind that the module is as much for such students as it is for students specialising in the area of the module, and that the overall aim of SMSTC is to provide broadening training for first-year PhD students.

SMSTC is a very large joint venture, which relies on your individual contributions. Thank you for all your help with it!

David Pritchard (Director)

on behalf of the Academic Steering and Management Group (ASMG)

2 Teaching and Assessment

2.1 Themes and modules

SMSTC modules are organised in four themes: *Analysis (ANA)*; *Applications of Mathematics (AOM)*, *Probability and Statistics (PAS)*; *Structure and Symmetry (SAS)*. Each theme contains four self-contained core modules, which may have different prerequisites. Each module is assessed independently using either one or two assignments. The **Theme Head** has overall responsibility for the theme, but may wish to devolve some duties to one of the lecturers in a module; this lecturer should then be designated as the **Module Leader** on the website.

2.2 Theme and module overview document and module pages on the website

From the beginning of each session, each theme should have an attractively presented overview document. This should be placed on the website and will also be handed to students at the Opening Symposium. For each module it should contain details of prerequisites, assessments (including deadlines), a reasonably detailed syllabus, and the teaching team. It is also helpful to provide suggested **background reading** for students who may wish to take the module but lack some of the prerequisites.

The TH is also responsible for maintaining the **module pages** on the SMSTC website, including information about the modules and the **staff list**.

2.3 Opening symposium

This takes place in late September or early October. The TH (or a substitute) will give a short (c. 30 min) **presentation** on the modules in his/her theme. 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 come to a decision.

Another purpose of the Symposium is for participants to get to know each other, so it is strongly encouraged that you (or your nominee) arrange to stay overnight. There is a dinner for everyone attending and a social activity such as curling. A meeting of lecturers and THs may be held during the symposium, and informal discussion will take place.

2.4 Weekly schedule

We run two ten-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.)

Time	Monday	Tuesday	Wednesday	Thursday
1300–1500	SAS	PAS	AOM	SAS
1530–1730	PAS	ANA	ANA	AOM

2.5 Lecture notes and slides

Lecturers are encouraged to upload notes and slides to the SMSTC website after each lecture. Please label lectures, slides etc. from 1–10 within each module. It is also helpful to include the academic session in each filename, e.g. “AlgTop_Lecture1_1819.pdf”.

For conventional lectures it is usual to upload full notes at least a week before the lecture; for other forms of teaching such as “flipped” classes, this may not be appropriate. LaTeX templates are available on the website for writing the lecture notes and slides. Books may be used as supplementary material. It is good practice to highlight common ideas and links to material from other modules where possible.

2.6 Lecturing and video conference technology

Lecturing duties should be spread around the module team. Theme Heads are asked to ensure that the lecturers in their modules familiarise themselves with the video conferencing technology well in advance of their lectures. Technical support staff at individual universities are normally happy to provide training in use of the equipment.

Engaging with students at remote sites can require more effort than in standard classroom settings. We encourage lecturers to experiment, learn from colleagues, and find something that they are comfortable with. There is no uniform SMSTC teaching approach, and we recognise that different subjects require different approaches. If you try something new then please share the outcome (via the TH and/or Director in the first instance).

Approaches that have worked in the past include the following.

- Ask everyone (or at least a spokesperson from each site) to **introduce** themselves at the start. (This also checks that the microphones are working.)
- Ask questions, perhaps for students to **discuss** at their local sites, and ask them to report at different points during the lecture.
- Have one or more short **breaks** during the lecture.
- Provide **partial slides** in advance, which you annotate and fill in as you go.
- Spend the first hour giving a traditional lecture and the second doing exercises.
- Provide an audio recording (**podcast**) explaining the key points in advance. There is apparently very good free software for doing this.

- Have a **guest lecturer** in one of the sessions, e.g. speaking on the “big picture”, “current research topics”, or “the future of the subject”, rather than on the material one would normally encounter in a taught course.
- Get the students to read the material or tackle problems in advance, and run the class as an **interactive tutorial** or “**flipped**” class. (Note that “flipping” does not have to involve pre-recorded videos, although these are fashionable.)
- Ask students to work in groups on a problem over the week and give a short (e.g. 15 minute) presentation on it at the end of the following week’s lecture.

We strongly encourage interactive approaches. For help making interaction work with the VC technology, please contact your local IT support and/or the SMSTC Administrator.

Display equipment:

- **Document camera:** allows you to write on paper and have that broadcast (live) to the other sites. This can work well with partial slides.
- **Electronic whiteboard** or **writing tablet:** as above, but all electronic. A writing tablet may be a monitor-type device on the lecturer’s desk, or something you bring yourself. (Connect to laptop input.)
- **Laptop:** slides and other computer output, usually without ability to annotate.
- **Camera pointed at chalkboard:** this needs very good lighting and careful experimentation with other sites in advance of the class to get acceptable results.

2.7 Tutorial exercises

Tutorial-style **problems** should be provided for the students via the SMSTC website. Please ensure that your modules provide at least outline **solutions** for these problems.

Module teams are not responsible for running **tutorial classes**: this is the job of the local university. However, people running tutorials in support of students on your module in other universities may also request tutorial problems and solutions in advance, so please be prepared to help with this.

2.8 Assessment of modules for consortium PhD students

This section applies to PhD students of the partner departments only.

- The modules within each theme are assessed independently of each other.
- Each module’s assessment regime should consist of one or two **assignments**, typically taking a total of 10–12 hours of work.
- Students should be given advance warning of the number of assignments and their deadlines, and usually given at least two weeks to complete each one, with a final deadline no more than four weeks after the end of the semester.
- The preferred mode of submission is by **upload to the website**, but some lecturers may prefer to ask for hard copies to be sent by post.
- Marks and comments should be returned shortly after the assignments are submitted, and preferably within four weeks, with **feedback** such as comments or a copy of model solutions. Individual feedback can be supplied by returning hard copies of marked scripts or by uploading files or comments to the website. PhD supervisors can view their students’ marks and feedback on the website.
- Students can be encouraged to **work collaboratively** to learn the topic, but they should produce their own assignment solutions. The submission cover sheet asks them to sign a declaration that it is their own work.
- Identical scripts are not acceptable and **suspected plagiarism or misconduct** of

any kind should be reported to the TH and the Director. In the rare event that this happens, the evidence will be presented to the student's own department and their disciplinary procedures take over.

Some practical assessment matters:

- Please label the assignments "1" and "2", starting afresh with "1" each semester, and not continuing the sequence into a second module.
- Avoid recycling assessments too early – remember that current first-year students may still be around in three or four years time.
- Individual assignments can be awarded either a **percentage** or **letter grade**.
- The **overall result for the module** should be a **letter grade** from the list below. It is up to the TH or ML to decide how to convert marks to grades. The grades are:
A = excellent (e.g. more than 75%);
B = good (e.g. 60–74%);
C = satisfactory (e.g. 40–59%);
U = unclassified (e.g. below 40%).
Do not leave any mark or grade blank, and enter when appropriate:
NA = not taken for assessment / no work submitted;
MC = medical or similar problems notified.
- It is the TH's or ML's job to **upload the marks/grades as soon as possible** after they are decided. These are then available immediately to the student's home department who can monitor their progress.

2.9 Assessment for other students

The SMSTC consortium departments have an agreement which allows students registered for credit-bearing courses such as MSc and MMath to use SMSTC material and attend the video-conference lectures. **Formal assessment of these students is solely the responsibility of their home department.** Module teams are neither required nor expected to mark SMSTC assignments for such students, but may do so informally if they want to. It is good practice to explain to such students in advance what your policy is.

If students who are assessed externally to SMSTC ask for guidance for their preparation for these assessments, the only sensible advice the TH or lecturer can offer the student is to consult the Director of their programme in their own institution. Uncomfortable though that may be, there's no other option.

2.10 Annual theme report

Theme Heads are asked to prepare a brief **annual report**, in consultation with their module teams, on the activities of the theme in the session just past. This report feeds into the annual ASMG meeting in May.

2.11 Key dates

Module overview document uploaded	One week before Perth Symposium
Semester 1 final assignments due	Start of Semester 2
Semester 1 marking done and marks entered	Week 3 of Semester 2
Semester 2 final assignments due	Four weeks after semester ends
Semester 2 marking done and marks entered	First week in May
Annual theme report	Second week in May
Team and plan in place for next year	May/June

3 General

3.1 *Communication with students*

SMSTC provides each module with a list of students registered and their email addresses early in the session. You can use these circulation lists to discuss matters within the module and its students. For example, lecturers could ask students in advance of each lecture if there are any particular points needing emphasis.

3.2 *Module teams*

The module team collectively prepares the materials and delivers the module.

Theme Heads should email the SMSTC administrator at ICMS with details of who will be lecturing in which weeks, as soon as this is known. Remember to have contingency plans in place in case of illness. It would be very helpful if THs could finalise (as much as is possible) their module teams for the coming session by May/June, because consortium departments need to know how many lecture hours individual staff members will be contributing in order to build them into their workload models for the coming year. Once the plan is finalised, THs should email their module teams with this information and the individual lecturers should let their departments know.

It is recommended to hold **theme or module meetings** on an occasional basis, either in the flesh or by video conference. Lecturers should be given/alerted to feedback from the annual student feedback questionnaires. The Theme Head should endeavour to inculcate the culture of the theme in its team members.

3.3 *Renewal of module teams*

It is important to bear in mind the need for renewal of module teams and the desirability of involving new people in SMSTC activities. Your consultations on recruitment should be broad and take into account various diversity issues. When a Theme Head wishes to step down, it is expected that he/she will consult widely in the Scottish community associated with the theme on his/her potential successor.

New team members are expected to familiarise themselves with the recent workings of their modules, in part by consulting recent theme reports, by consulting recent student questionnaires, and by taking account of any issues relating to the module which have been raised by the ASMG.

3.4 *Academic consultation*

Sometimes the ASMG will bring substantial matters of an academic nature to the attention of a Theme Head, usually in response to the **annual feedback exercise**. In such a case the TH is expected to consult widely in the Scottish community associated with the theme on how to respond and implement any changes. THs are expected to genuinely take into account any substantial issues arising from the annual feedback process and to report in the next annual theme report on what was done and the outcome.

4 Administrative and Legal Issues

4.1 *Local workload reporting*

It is the responsibility of individual lecturers (not the TH or SMSTC management) to let

their own departments know about and agree their SMSTC commitments, and to deal with local workload and timetable issues.

4.2 Student transcripts and certificates

SMSTC cannot award any formal qualifications, or make progress decisions. We return students' final grades to their departments, who may then use them as part of a formal appraisal or credit system. (This point is not always well understood by students and their supervisors.) We therefore cannot provide official transcripts of students' results. However, at the end of each year we email each student a **letter** confirming their grade for each module, which they may use to demonstrate to their supervisor or a funding body that they have taken these modules.

4.3 Recording of lectures

SMSTC does not have the resources to systematically record and archive all the lecture presentations. In fact, we cannot obtain the correct permissions to do this via the Janet booking system software, and so we cannot do it at all.

If you arrange for recording to take place yourself, then you must be aware of the legal requirements, comply with the law, and make it clear to the participants and audience that it is an unofficial recording and not an SMSTC-endorsed activity. This should also be made clear on any such recording if it is placed on a web site for public viewing. In other words, **SMSTC takes no responsibility for such recordings.**

The **legal requirements are non-trivial** and must be complied with under all regimes of video recording and in all circumstances. A description can be found at

<https://www.jisc.ac.uk/guides/recording-lectures-legal-considerations>.

In common with various laws on recording (e.g. CCTV), advance permission has to be sought and given by all the students and lecturers involved for the session to be recorded. This includes all participants at remote sites whose presence may be captured by the video. It is not sufficient to ask those who actually appear for consent after the event.

4.4 Website, data protection, and copyright

The website (www.smstc.ac.uk) is a combination of a student record system and virtual learning environment, with the additional complication for data protection of having eight different universities involved.

The basic rules we use for **data protection** are that:

- students can see only their own assessment results, feedback, and data;
- lecturers, MLs and THs can see only the results and feedback for students on their modules;
- PhD supervisors and universities can see only results and feedback for their own students.

The official **privacy policy** is linked to from the bottom of each page on the website.

The teaching materials on the web site are accessible only to registered users. This is the standard position for most university VLEs, and protects the **copyright** of the owners of the materials posted there. If you want to make materials you produce yourself publicly available, then please use a different platform.