18.966 IN SPRING 2018
RIEMANN MODULI SPACES, FROM THE GROUND UP
MESSAGES

RICHARD MELROSE

ABSTRACT.

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INTRODUCTION

This is the message archive for 18.966 in Spring 2018.

1. 4 FEBRUARY, 2018

I am still working here from the pre-registration list for 18.966.

I did not have much time to work on the notes while I was away in Australia and in particular did not get out a second message earlier.

The first 'lecture' is now in a state to be read (I hope). See the first message (messages are also in a file in the repository) about 'git' – to get access you should send me, attached to an email message, your 'public ssh key' (which you almost certainly have even if you do not realize it). If you use more than one computer you will need to send me a key for each. You clone the repository with

git clone git@mellin.mit.edu:18-966-S18

in a terminal, or use a 'gui'. This should work in any of the standard operating systems and will produce a directory '18-966-S18' containing everything. Note that you can edit all the files and change them – and indeed are very much encouraged to do so. What power! Don't worry too much, it is possible to restore things if you mess up.

There is also a website which I will finally put up today, but the repository will be much more important. I made a piazza page but I'm not sure this will be useful (it allows you to annotate pdf files and have cross-discussions) – I look for guidance on this as on other things.

On Tuesday, Feb 6, I hope everyone will have looked at the first lecture (compile L1S.tex or 18-966-S18.tex or just run 'latexmk' in the directory you get by cloning the repository) so that we can discuss how much background I should go into and so on. I plan only to deliver some version of the 'short lecture' – that will be the general plan. It may well be that these 'lectures' are topics taking a bit longer. There are

no problem sets or tests but I will require you to 'sign off' on each lecture/topic but will have some more significant (joint) responsibility for some particular topic(s) – and I very much hope that everyone will play a role in improving the notes to a point that they are useful. Whether we get a 'grader' who can do some of the coordination remains to be seen.

You will need to agree to be video-recorded, if someone objects to this it may be a problem for them to continue with the course. I am not intending the video recordings to be 'really public' (although by the nature of things they cannot be totally private). The intention is more that they can be used to correct things later.

Questions?

See you on Tuesday!

Richard

2. 4 January, 2018

Preliminary message – to the pre-registration list for 18.966 for Spring 2018.

I just wanted to let you know about 18.966 this Spring, I will send out another message next week, and probably weekly, with some more details.

My plan for this course is to cover

'Riemann moduli spaces, from the ground up'

– doing whatever is necessary to get a decent understanding of the spaces I will call $\mathcal{M}_{g,n}$ and beyond, as time permits. As you might well appreciate, this involves a mixture of Algebtraic Geometry, Differential Geometry, Differential Topology and Analysis. The approach will be through Differential Geometry but there is something for every one to hate here!

I want to produce a set of notes from this course – I do not anticipate teaching it again! In doing this I want to involve everyone who is registered, and quite likely some who are not, in the process; there may be some people taking part from outside. There should be 26 classes, more or less, and each will be devoted to a specific topic, I hope to have a preliminary version of that list by next week but it will likely evolve. I plan to write up notes for each meeting before hand (and try to keep a week ahead) and then we will collectively decide precisely what I (or with luck other people) will talk about based on that. My expectation is that each of you will be responsible (in collaboration) for around three of these topics, in the sense that you will need to read the notes critically, revise them, find references, etc.

This is a somewhat daunting task to organize and one reason I am sending this note out is to warn you of this and that the lectures, such as they are, will be video recorded – so each of you will need to agree to that. I plan to make the files for the notes available to all of you via a 'git repository'. To have access to this you will need to send me your public ssh key (or keys, one for each computer you will use) and to install 'git' (it is probably already there) and learn enough to use it so we can collectively edit documents. That is one thing you can do in advance. The repository will go up next week, so if you want to be an 'early adopter' then send me your ssh key anytime.

I am very open to suggestions at this stage since this is rather new territory for me. We should likely have an extra discussion meeting: When? I hope you will give some feedback, after I get some notes up, on where we should start.

Richard

PS. This message file will be, in fact is, in the repository.

It turns out that the registrar's mailer only allows shorter messages than this so I have had to compile a separate mailing list. I will probably remember to remove people who opt out from this list, but if you want to be taken off just let me know. Converely, if you know of anyone who wants to sign up without actually registering, suggest to them that they should send me a message.

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