Advanced Soil Mechanics
Prof. Sreedeep Sekharan
Department of Civil Engineering
Indian Institute of Technology-Guwahati

Lecture-57
Closure of Advanced Soil Mechanics Course

Welcome back participants. So, this is the closure lecture for advance soil mechanics MOOC. In the past 12 weeks we had a journey together trying to advance the concept of soil mechanics. I hope some of you would have got benefited from the lectures which we have seen as part of this course. But I just want to add whatever I have been telling and what I told right at the beginning that please treat this course as a beginning for further advanced learning in geo mechanics.

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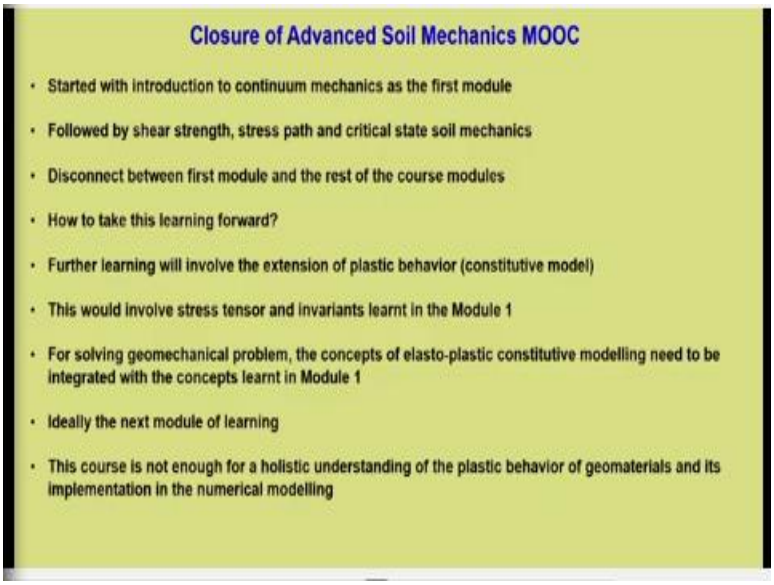

So, in this course basically we have started with introduction to continuum mechanics as the first module. And this was followed by shear strength, stress path and critical state soil mechanics. Now at this stage, you may find a disconnect between first module and rest of the course modules, why I would like to add this point here is while teaching this to students one comment which I use to receive is that the first module is a standalone and there is a disconnect between that with the rest of the course.

In fact they are correct, I fully agree to it, now where the problem is that how to take this course further? That will help us to understand where is the actual connect between module 1 and the rest of the course. So, how to take this learning forward? Now we have stopped here as part of this course because we need to have some sort of understanding and I think with further reading you will be able to have your concepts clear.

Now having done that how to take this course forward. Now further learning will involve the extension plastic behaviour, more into constitutive modelling. Not only Cam Clay, there are various plastic behaviour and the fundamentals of plastic model or geo mechanical behaviour. Wherein we also have to learn more about no associated flow rule, definition of plastic potential and how do we use this for solving a problem?

In this part we have not touched upon. Now if you really want to advance the learning in plastic behaviour, you will see that most of the discussions would involves stress tensor and invariants which you have learnt in module 1. So, now you can see it is more like a circle, we started at a point from module 1 and then we have not completed yet. So, if I would have had module 5 maybe that is going to further turn back and reach module 1.

So, without module 1, we cannot advance further for this particular course. So, for solving geomechanical problem the concepts of elasto-plastic constitutive modelling need to be integrated with the concepts learned in module 1. So, the basics that we have learned module 1 that particular basics they are needed for solving or for understanding the constitutive behaviour in when you talk about the plastic behaviour of the geomaterials.

So, this is how we integrate module 1 with the rest of the courses. But that is further advancing this particular course. Ideally that is the next module of learning. Now let me also tell you that this course is not enough for a holistic understanding of the plastic behaviour of geomaterials and it is implementation in the numerical modelling. Now many of you would have already used some of the very popular numerical modelling softwares like FLAC, PLAXIS, Abaqus, geo-slope kind of.

So, where there are lots of analyses of the structures which are done the slope stability analysis, the stress analysis and we also discussed about the failure states. Now how it is implemented in that particular framework? So, for that we need to complete the other part or we need to know the further extension of what we have learned now. So, with this present learning it is not enough but the stage is set for you to learn further, now that is all about this particular course.

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Now before winding up I would acknowledge all the participants of this course for their valuable support. My TA students Bharat Rattan, Charakho, Vineet, Tharun, Biswajyoti and Jishnu Choudhury who has help me quite a lot. I would also like extend my thanks to centre for Education Technology, IIT Guwahati. And finally to NPTEL, IIT Madras for a very good organization and keeping us updated time to time and for helping us in completing the course**.**

So, that is all, if you find any inconsistency, mistakes in the lectures, please drop an email at srees@iitg.ac.in, why I am very specific about this is that? So, this is my first MOOC and when I am recording the videos, I have seen that I am using some words where it is written may be sigma, maybe I am talking epsilon. So, these kinds of mistakes sometimes it may not be within my notice.

But as a listener, as a participant when you are going through if you find there is some inconsistency or mistakes, please feel free to inform me about that, so that I can get this

corrected. So, with this note let me wind up this course, I wish you all the best to all the participants and thank you for attending this course.