Engineering Hydrology
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Lecture 83
Closure of Engineering Hydrology Course

Hello, all participants. I welcome you all to the closure session on the course on Engineering Hydrology. We have started our journey four months back, and now it is time for me to wind up this course. So, let us go through the different topics which we have covered in this particular course, very briefly.

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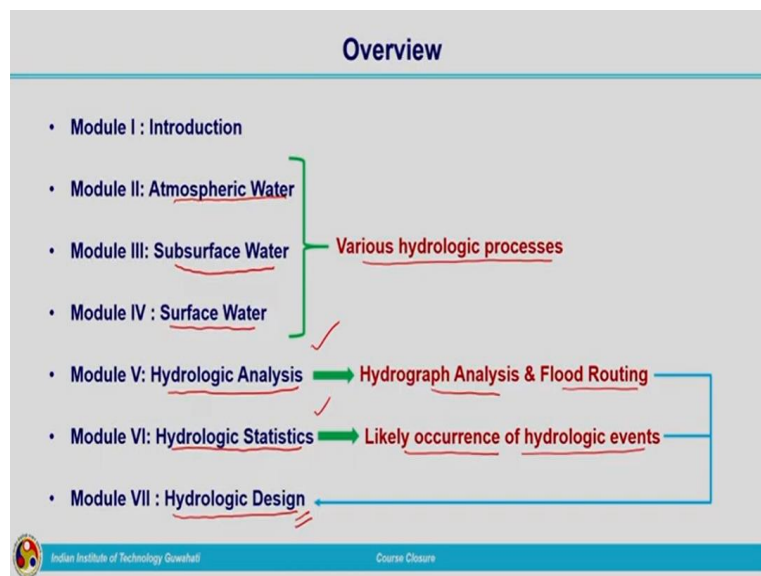
We had total seven modules. Out of that the first module was related to the introduction of the topic. It was giving the preliminary concepts related to engineering hydrology, which was very much essential for a beginner to get an idea what they are going to study under this course. This particular module one on introduction was a foundation for this particular cause on engineering hydrology.

Then we have moved on to second module on atmospheric water, which was dealing with the water which is present in the atmosphere. Module three was dealing with the subsurface water that was related to the water which is present in the subsurface that is beneath the ground surface. Beneath the ground surface, we know we can have two different zones one is the saturated zone and unsaturated zone. Under the topic of subsurface water, we have discussed about water which is present in the unsaturated zone. Then the fourth module was related to surface water, water which is present on the surface of the earth. Under these three modules, module two, three and four, we have covered in detail about different hydrologic

processes related to this, that is hydrologic processes related to atmospheric water, subsurface water and surface water.

Various hydrologic processes we have discussed, all these are interconnected by means of hydrologic cycle we have seen how water can be converted from one form to another. This is an endless process. So, different processes under these phases, different phases of water, we have covered under these three modules. Starting from the mechanism behind the formation, to the measurement estimation, all these we have covered under the modules on these atmospheric water, subsurface water and surface water.

Once we got a knowledge about these different processes related to three different zones, we have moved on to the module five related to hydrologic analysis. This hydrologic analysis module was dealing with hydrograph analysis and flood routing, mainly hydrograph routing. So, under the topic of hydrograph analysis, we have discussed about different types of hydrographs and what is the use of it and once we got understanding related to hydrographs, we have moved on to the use of these hydrographs that we have utilized in the case of hydrologic routing. Hydrologic routing, we have discussed related to channels and reservoir, that is channel routing and also reservoir routing. When we were discussing about routing, I have discussed about two techniques. One is hydrologic routing and the other one is hydraulic routing. We have not touched the topic of hydraulic routing, which is incorporating both the continuity and momentum equations. We have made use of only hydrologic routing in which continuity equation and some function representing the storage is made use.

After completing hydrologic analysis, we have moved on to module six on hydrologic statistics. Under this module, we have covered only the preliminary concepts related to probability and statistics for the determination of the probability and also the magnitude of certain events such as the storm or flood which may occur within a certain lifespan of a particular structure. So, different distributions, different properties, parameters related to distributions these things we have discussed in a very basic way. By making use of that fundamental knowledge, you cannot determine the likely occurrence of a particular hydrologic event.

After that we have moved on to the last module that is the seventh module on hydrologic design. Hydrologic design was making use of information from hydrologic analysis and also hydrologic statistics. So, that is the input to the hydrologic design. So, for carrying out hydrologic design, we need to have an understanding about hydrologic analysis and we need

to get the inputs from hydrologic statistics that is statistical analysis needs to be carried out based on the past data to estimate the possible magnitude of a particular hydrologic event which has to be incorporated while carrying out hydrologic design.

Related to module six and seven, I would like to emphasize one point that is we have covered in this particular course, very minimal required points, required for the field applications. These topics are very vast which has to be studied in detail for a person to have understanding about hydrologic design. So, that you will be studying in the advanced hydrology course.

Here in this basic engineering hydrology course, I just gave you some basic flavor of these topics. But these are very important, those who are interested in this line of hydrology, they should definitely go through different textbooks in the advanced level, in order to make use of these principles for the hydrologic design to be carried out in the field. So, that much about the course on engineering hydrology.

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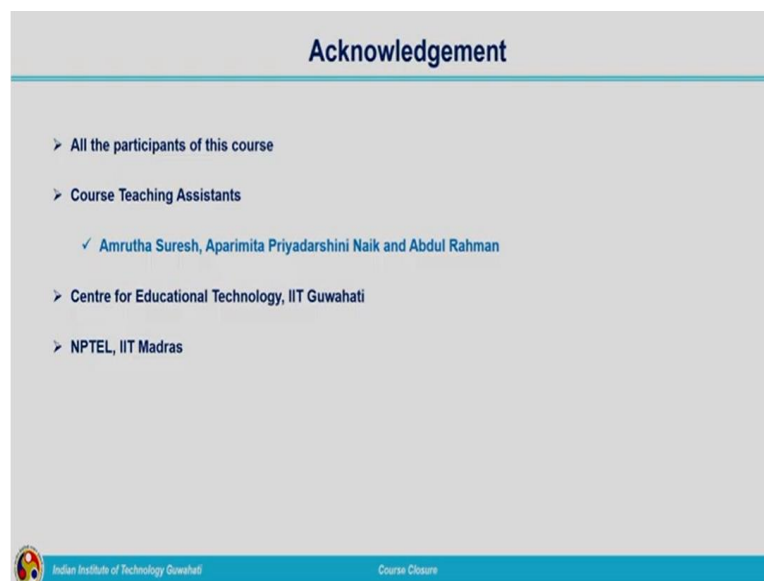
So, before winding up this course, I would like to thank all my participants for your patient listening. I hope some of you might have benefited out of this course. Then coming to my course teaching assistants, Amrutha, Aparimita, and Abdul, I am really thankful to them for supporting me during this entire context of this course and the entire team from Centre for Educational Technology, IIT Guwahati, and NPTEL, IIT Madras, I would really thank to each and every member who has helped me, supported me during the entire period of these four months. Thank you all. I am wishing you all the best for a successful life not only for

engineering hydrology, I would like to wish you all the success for your bright future. Thank you very much.