

Introduction to Information Security
Prof. V. Kamakoti and
Prof. Dilip. Ayyar
Department of Computer Science and Engineering
Indian Institute of Technology, Madras

Lecture – 01

Ladies and Gentleman! Welcome to the information security, introduction course; level one. Myself V. Kamakoti, Professor in department of Computer Science and engineering along with Dilip Ayyar from Deccan Infotech, will be jointly offering this massively open online course. I am sure that you would have seen the introductory video and also the introductory materials that we had put along with the syllabus. This course will run for a six week duration. We will have two assignments and an exam. We will ensure you that it will be a very very technically satisfying journey.

This course specifically is intended for students who want to explore the field of information security, students who currently are undergoing a course in information security, IT professionals who wish to explore the nuances of information security, security professionals who want to revisit the fundamentals, top management and senior management of corporate companies who wish to learn the concept of information security and implement them in their companies, professionals from BFSI segment who wish to understand the depth and average of information security and of course anyone with an aptitude to learn. This course is very important as today's computers are driven by security.

Computers have penetrated into our life so much that we cannot dispense with them easily. We need to work with them with a confidence in them. We need to build a trust on them. Building a trust is more a social problem or a cultural problem, than a technical problem.

Just to give you an analogy, it is like building a dam and filling that with water. Constructing a dam has lot of civil engineering, mechanical engineering, structural study, and etcetera. It is very technical. Filling it with water is conceptually more simpler than building the dam. Security is also like this. Lot of software, lot of hardware, lot of firmware are all put; they are all building blocks. They are like the dam. The users who use them, the system administrators who administer them, they need to administer or use it properly with discipline, so that the dam is properly filled with good water.

So, the problem in my opinion is eighty percent of culture rather than technical. So, we have actually split this course into two parts. The first part will be on the cultural side; what we expect the user to do, what we expect the system administrator to do, what sort of discipline should be in the organization to ensure a secure trusted computing framework. And that will be covered by me. The next part is the technical part. What are all the technical building blocks that will enable you to implement certain policies that come out of this culture, and that part will be offered by Dilip.

Now to tell you another interesting analogy, we all know that if we practice yoga our health will be good, we will maintain good health. But, how many of us practice it sincerely? We have several reasons for this. Why we are not doing it? We say stress of work, commitment, that, this and other things. But, the reason why we do't take it like half an hour a day, we are not able to spare for our good health is that we lack discipline. And when it starts pinching our health, then we go back and that day will not be a very very effective day for starting yoga. If you have done from childhood and probably you will not land up with certain health problems. Security is also exactly like this.

In an organization when you do not have the discipline, then security breaches start happening. And, some day it will start pinching you and that day it will not be very easy to bring back security as a discipline. Security should grow with the organization. As an organization grows, the security should also grow. It can't just be at any point of time fitted in to the organization. And that is something; that discipline has to come up. And that is what this course will basically deal about.

The most important thing is the difference between the yoga analogy and the security analogy that I gave is, in yoga if you do not practice yoga you are the only person who is affected; but, in security if you do not practice security you expose one of your desktop systems and you install a malware. This can havoc; it can create havoc on the entire network within your company. It can kill the confidentiality of your company. It can remove the trust your customers have on the company. So, if one person in the entire employee segment does not have this discipline, he can potentially be a security vulnerability. And that makes this problem much more complex than the other analogies that we see in life.

So, ladies and gentleman welcome to this course, the level one course. We will have five more courses following this. And here as I have told in the introductory video, we will

expose you to the fundamentals of information security. Now I request Dilip, my co-teacher to talk about this course.

Greetings all! I thank Dr. Kamakoti for giving this opportunity to conduct this course. Welcome to all for this introductory course on information security. And, it is indeed a privilege and honor to co-present this course along with Dr. Kamakoti at IIT Madras, Chennai. As you would have seen in the introductory video from Dr. Kamakoti, the course is designed to impart the basics of information security. There are six modules in this course and each level is an ocean by itself. Our primary objective was to bring to you the concepts, which are essential and required in the field of information security. The areas of interest; differ among different people. For example, a non-technical professional may be more interested in the administrative aspects of information security. So, he or she may choose to concentrate on modules that are appropriate to him or her. Information security learning requires a lot of patience, perseverance and practice.

So, there are a lot of resources available on the internet. From the industries stand point, this course is very useful or it is like a dictionary for information security or you can call it as an abridged version of a vast subject. As the course level keeps advancing, this is apparently the level one course. So, as the course level keeps advancing more in depth explanation on each area will be taught. Lot of practicals will be there, hands on will be there in the forth coming courses. The special emphasis also has been given on these slide decks for the simple reason that it has to be broken down in to plain and simple language and areas that require jargons have the required jargons. The remaining is plain, simple, self -explanatory and understandable. So, information security today is of a big concern for the nation itself. And, knowledge of information security means protect your society, protect yourself, protect the environment and protect the nation from cyber warfares and increase awareness, a more robust computing environment. So with this, we will start the course. We once again welcome you to this course and sincerely hope that you have a knowledge enriching experience.

Thank you.

(Refer Slide Time: 09:19)

Reference and Research materials

- ▣ We sincerely thank and acknowledge the works of the authors, Universities, Open Source communities, etc for the materials sourced.
- ▣ Many of the materials have been sourced from the sites / books appended in this document in order to present the concepts in an understandable fashion and reduce redundancy of effort.