Ethics in Engineering Practice
Prof. Susmita Mukhopadhyay
Vinod Gupta School of Management
Indian Institute of Technology, Kharagpur

Lecture - 27
Engineers as Managers Consultants and Leaders

Welcome. Today we are going to discuss about the Role of Engineers as Managers Consultants and Leaders. So, as we understand like we are discussing about ethics in engineering practice, we assume like they are employees of organizations or they are functioning as independent consultants. And as an when the progress up in the organizational hierarchy, they will be like assuming roles of leaders managers, we want only their technical competencies. They need to develop these competencies also because they will be taking up these roles.

So, in playing the role of a manager leader or our consultant, they will be facing number of ethical issues dilemmas, regarding various pockets of a decisions that they need to take in this roles of managers consultants or leaders. The present module focuses on the ethical issues with respect to these roles and what the engineers possible course of actions should be when they are facing dilemma in these regard. That will be the total coverage that will be given in this module. So, let us see what is there in the discussion for this module.

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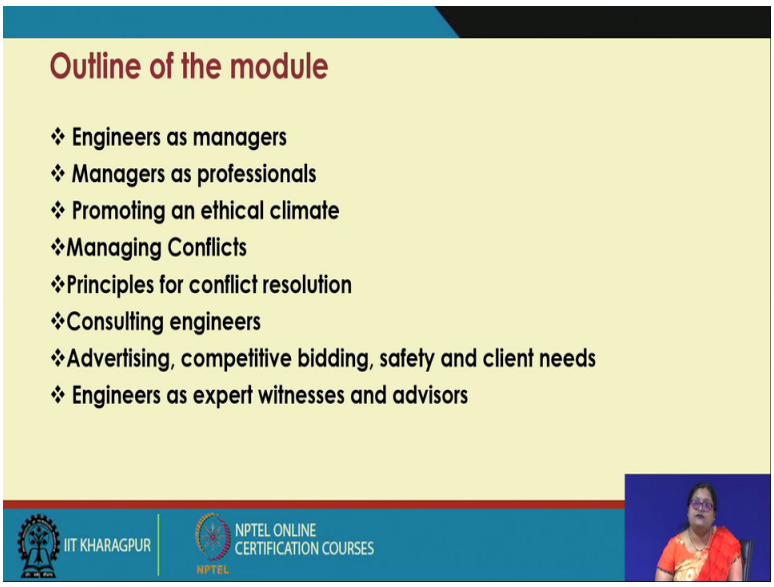

The module will cover the role of engineers as managers, the managers as professionals, promoting an ethical climate, managing conflicts, principles for conflict resolution, consulting engineers, advertising competitive bidding safety and client needs, engineers as expert eye witnesses and advisors.

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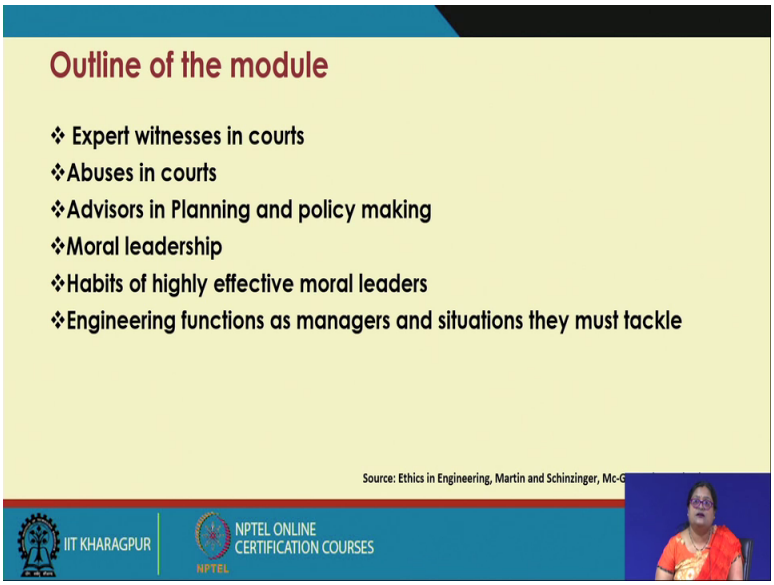

Expert witnesses in courts, abuses in courts, advisors in planning and policy making, moral leadership, habits of highly effective moral leaders, engineering functions as managers and the situations that they must tackle. And we will go for a detailed discussion of all these things.

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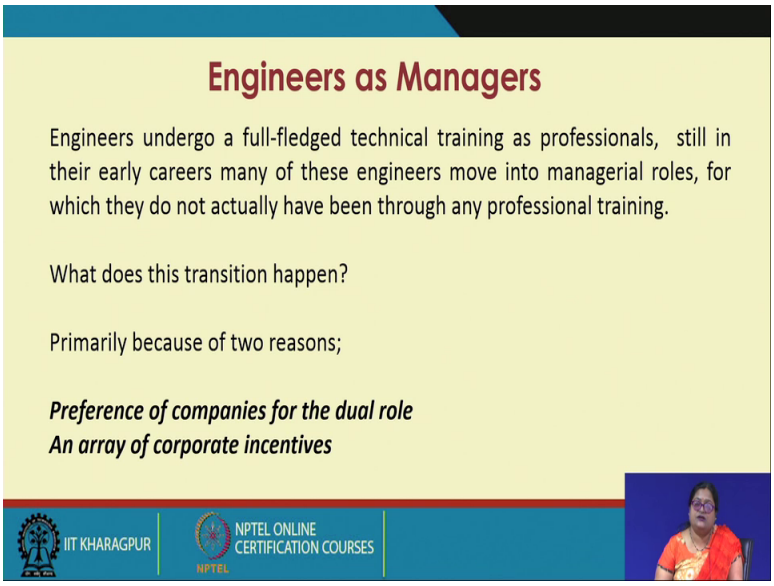

Now firstly, we are going to discuss like engineers as managers. So, what we find like though engineers undergo a full-fledged education as a technical education training as a professional. So, after their completion of their early stages in their career, initial after, some initial years they move into the role of managers; for which they do not get actual any training as a part of the course that they have learnt as engineers.

So, we can we may wonder like why this transition happen. This transition may happen because there are 2 factors. The companies may prefer for dual roles. Because it is always good to have a manager who understands the technical background as the engineer does. And of course, there lot of corporate incentives which may attract the engineer into the domain of management.

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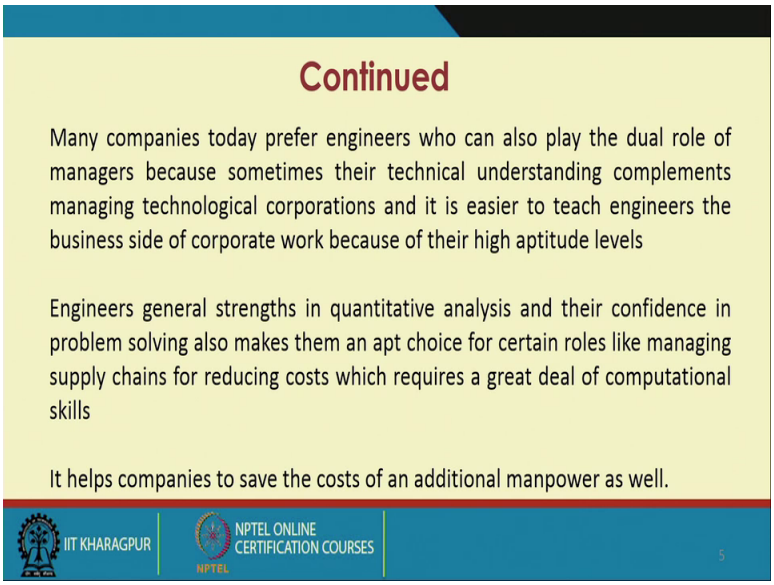

So, what we understand like as we are discussing; many companies now prefer engineers who can play the dual role of managers because sometimes their technical understanding complements the managing the technological corporations. And it is easier to teach engineers the business side of corporate works, because of their generally it is taken their very high aptitude level and it is very easy to teach them about it.

Another thing which is very important is the engineers to have a very high technical and quantitative analysis skill. And they have great confidence in problem solving; which also makes them like more ready for choosing roles like supply chain management for reducing cost. So, because it requires lot of computational skills these helps the organization to save an additional man power. So, because if one person can do both the roles then it is of course, easy for the organization to because it is saving on the role on the cost and also because the person with technical background if he can be trained on the soft skill part on the behavioral aspect part. So, he can do both the jobs very well hm.

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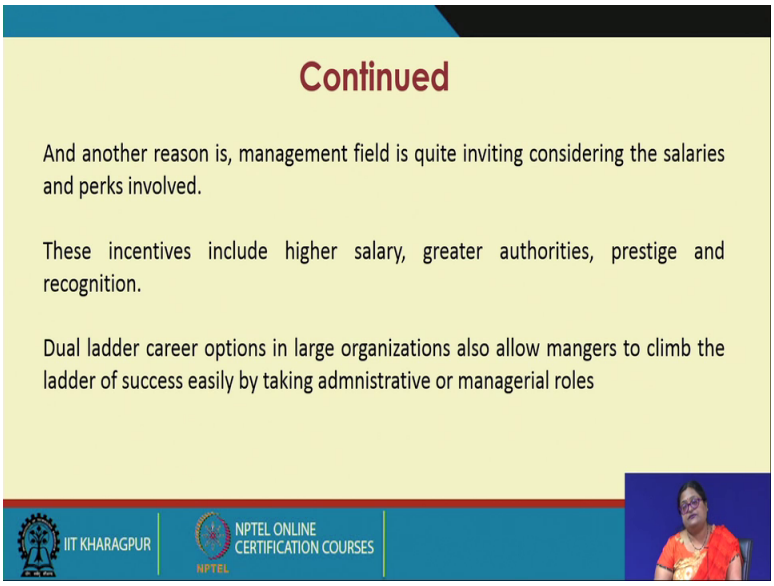

So, another reason for the engineers to so what we have discussed is about the companies like, perspective on going for a searching for person with like who can play dual roles. From the point of attraction for the engineers is of course, high for salaries involved at the for the management cadre and it includes high salary may be greater authorities prestige. And recognition and like dual carrier options in organizations like, it helps the person to raise up the ladder very quickly by taking up administrative or managerial roles.

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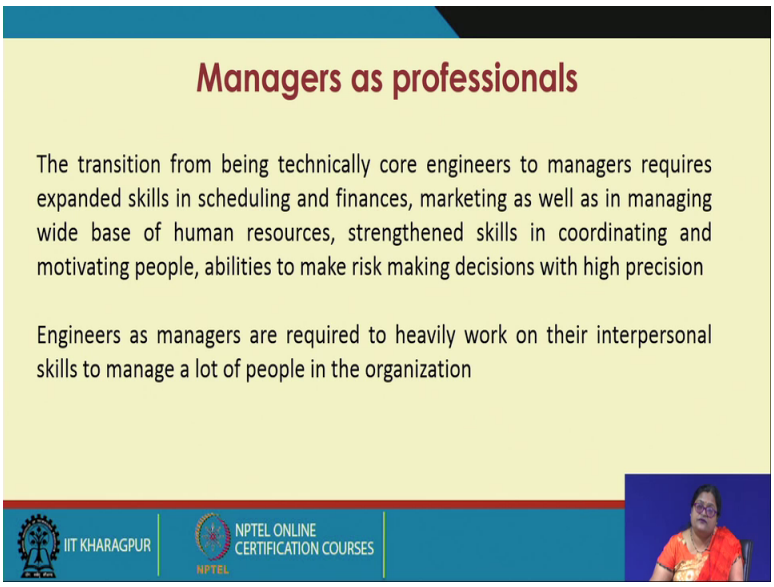

So, these are point of attractions again for the engineers to slowly shift from technical to managerial or administrative roles. So, the transition from being technical core people to mangers requires. Like, it an expansion of skills in like scheduling and finances, marketing managing, human resources then in coordinating and motivating people abilities to make risky decisions and with high precisions. So, an engineer's really have to work for their interpersonal skills, because they have to manage lot of people in the organization.

So, these are the professional requirements of a person who like visualizes himself or herself to be playing the role of a manager.

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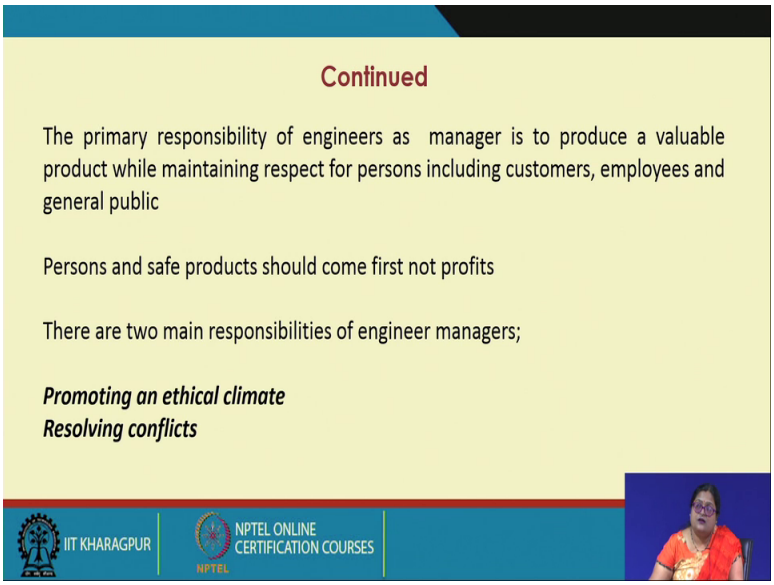

So, the primary responsibility of the engineer as the manager is to not only to produce a product which is valuable in nature, but also definitely to maintain a well balance of relationship with people like the customers employees and general public, and to have a great deal of respect for them. So, and persons and the safe conducts safe products should be the primary concern and not for profits. And as you can see like 2 of the major responsibilities of engineers as managers are promoting an ethical climate within the organization and resolving conflicts.

We will discuss both of them in details.

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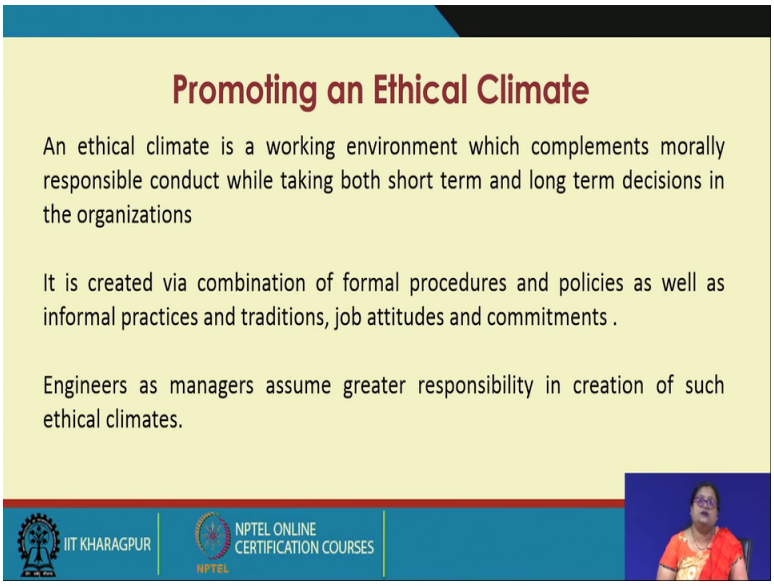

Promoting an ethical promoting an ethical climate; so, what we understand by ethical climate is that, it is an working environment which complements morally responsible conduct; while taking both short term and long term decisions in the organizations.

So, morally responsible conduct should be recognized it should be respected in the organization, and it should be like encouraged while taking short term and long term decisions. So, how it is done? How this morally responsible conduct is encouraged in the organization is by the combination of may be formal policies procedures which is institutionalized, and also may be through informal practices and traditions job at issues a commitments.

Engineers as managers have a great responsibility in creation of such ethical climates because it is in many cases like managing by doing. So, if they themselves as engineer's professionals, they themselves follow these procedures practices and encourages others to do it by themselves following the procedures practices, taking care of the safety of people and being morally responsible for the access. And others are also going to get encouraged and learn from them and slowly the whole organization is going to function like an ethical organization.

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It may so happen like there are different types of ethical climate, and with like that may prevail in different organizations. So, there could be 2 extremes like in one extreme it may be so, like the person the organization is very indifferent to ethics. So, these such discussions may happen only in board room or in meetings.

But the organization is not very serious about like how to institutionalize the ethical practices. How to reframe may be the policies and procedures, how to like seek how to follow up like, it is followed by every employee how to; so, these things may not be there. At other extreme the organization these are organizations which not only imbibe ethical conduct in mission. But how they take lot of interest in understanding? How to make it a part of the daily functions and procedures in the organization?

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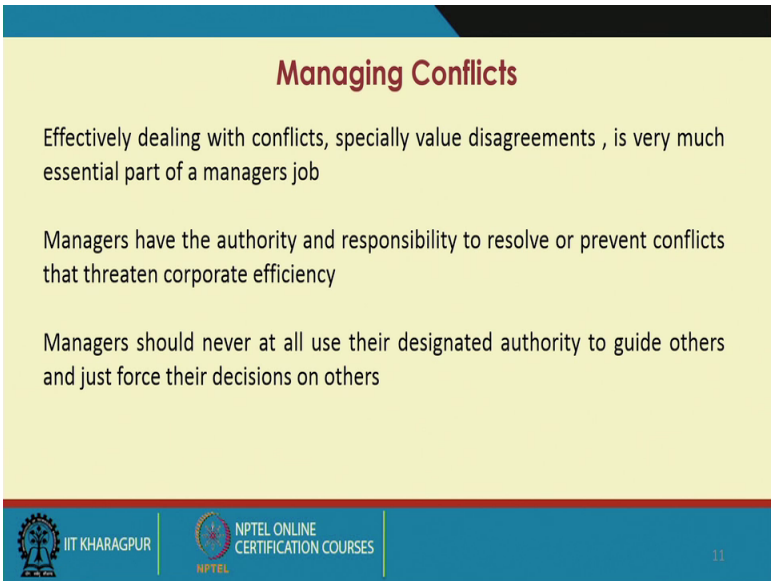

So, that is very important. So, you can find 2 extremes. At one part where staff type of organizations are (Refer Time: 12:47) about the ethical climate and other extreme are organizations which are moral proactively trying to see how ethics can best be incorporative in the organization and taking positive measures for it. So, the second role of as described of like the engineers as managers are dealing effectively with conflicts. So, what we find over here? Like in conflicts means it is a value disagreements disagreement, in what I believe in disagreement in what the other person believes. So, managers have the authority and responsibility to resolve or prevent conflicts that called like threaten corporate efficiency.

So, if the conflict is not an healthy conflict, if it is not a functional conflict, but it becomes a disfunctional conflict in which that it threatens the corporate efficiency. Then the managers have the authority and responsibility, either to result or prevent this conflicts. So, , but it doing so managers should like never use their authoritarian power to guide others. And like decisions should like never be trusted on others. So, I (Refer Time: 14:44) as suggested should be like managing by doing leading by examples. So, you have to encourage in people in order to build an ethical climate environments. And the importance of these things and voluntarily participate in it by following certain practices.

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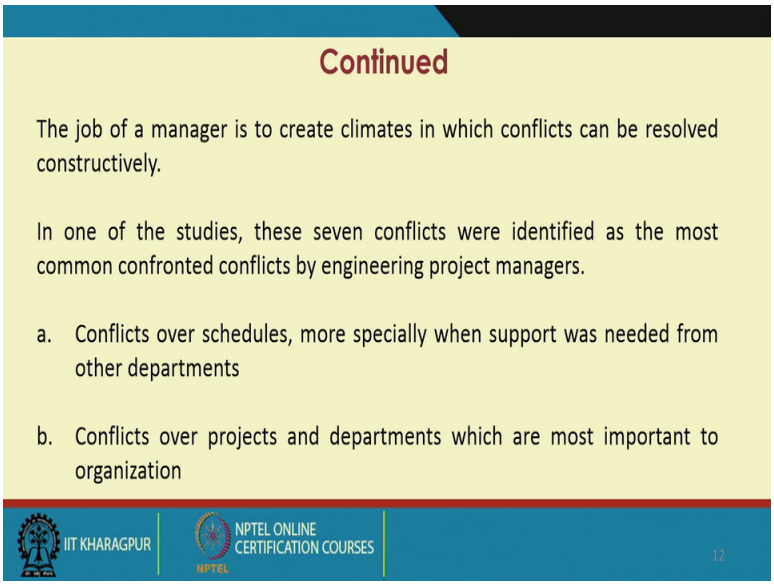

So, what we understand like the job of a manager or a engineer, who is functioning as a manager is to create climate in which conflicts can be resolved constructively. So, to understand that in order to create a climate in which conflicts can be resolved constructively, we must first understand like the what are the different types of conflicts that may arrive or that in engineer manager will be facing in a particular organization.

So, what we find like, engineering project managers have sound 7 different kinds of conflicts as they may face. So, first is of course, conflicts over schedules, where they more when more specifically when support is needed from other departments; conflicts over projects and departments which are more important to the organization.

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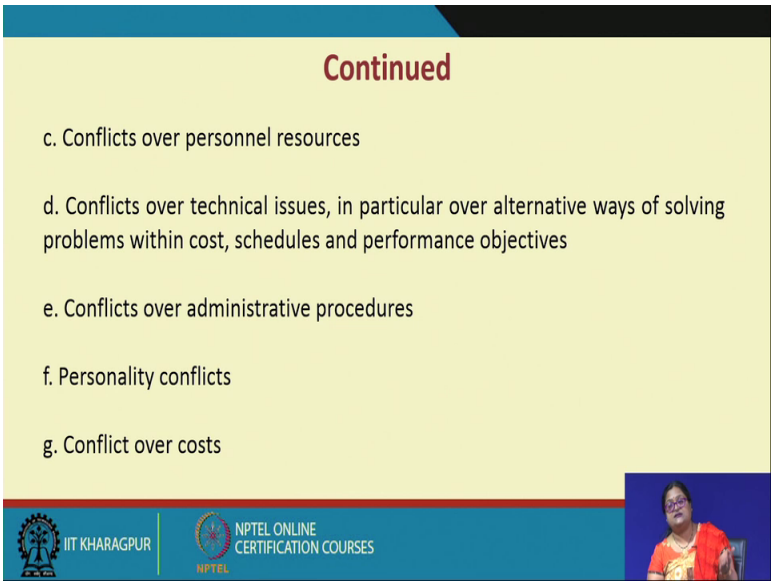

So, is more closer to the power that who is more important for the main output of the organization. So, because in that way there will be the allocation of resources and centralization of power like which department is more powerful than the other. It will be conflicts over personnel resources also, conflicts over technical issues like, alternative ways of solving problems within particular cost schedules and performance objectives. Conflicts could be also over administrative procedures. Conflicts could be personality conflicts and conflicts will be over costs also.

So, what we find as many different interfaces are there with the other interested parties, similarly interested parties? So, these could be the zones where like conflicts may arise.

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So, as result of doing that as a way of solving this conflicts, what could be the ways in which this conflict can be solved? There are 4 widely accepted principles for conflict resolution. First is people separate, the people from the problem, then interest focus on the interests not positions. Options generate a variety of possibilities and criteria, insist that results be based on some standard criteria.

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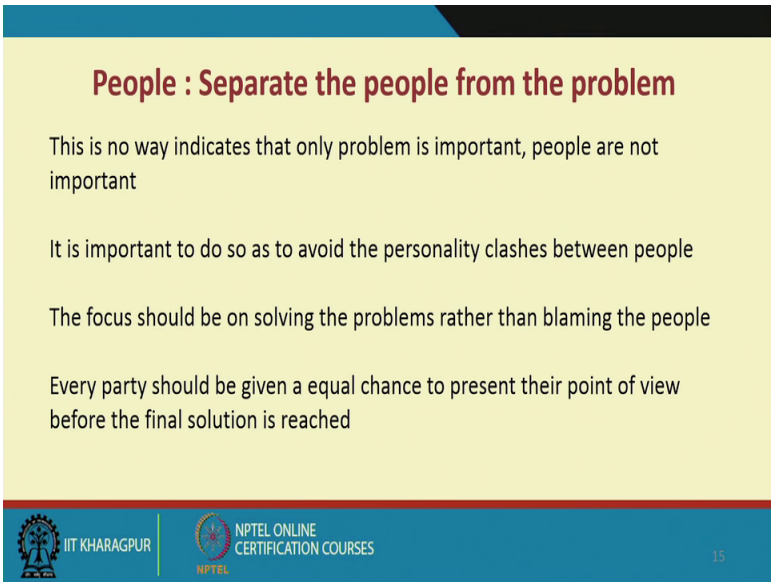

So, first we will look into the separate people from the problem how it can be done. So, this is no way indicates like only the problem is important, but at not the people are not

important is not focusing into that, it is trying to discuss like how we can avoid personality clashes between people, whatever we are like debating about should be about the task at hand.

And may be this debate gives rise to very healthy discussion which brings out more improvement in the task. But if that takes turn into like blaming people and like finding out force with each other, then it takes a different perspective. And that is why what happens in many cases people just forget the original issue of discussion and go on blaming each other which is a kind of disfunctional conflict.

So, here it is told the focus should be on solving the problems rather than blaming the people. Every party should be given an equal chance to present their point of view before the final solution is reached.

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So, next is whenever we are talking of interests, then focus on interests not on position. Sometimes what happens like due to the positional power, people may like terminate and make others accept certain things. But if a conflict needs to be reduced, there is sometimes we need to focus on the interest and not on the positions like from where it is coming the suggestion is coming from where and at what level of hierarchy that the person is in.

Positions here refers to stated views not only those who are a party to the bargaining employees, but who can think correctly. So, the focus while resolving the issues like, it should be on meeting the interests like, of those who are in the positions of authority. But again, the focus should also be coming up with solutions for the interest the all parties.

So, it may not so happened like the person who is in positional authority by using that power may try to get the only the benefit of the resolution of the issues and getting a favorable conclusion for himself or herself. So, and the solutions should not be geared towards the interests of only those who are in positions of authority. But we should try to come up with a solution like which is of interest to all the parties who are concerned in a particular like things to be done.

So, what we find like the interests of every one of all the parties needs to be taken into consideration, while we are trying to find out what could be the best possible solution.

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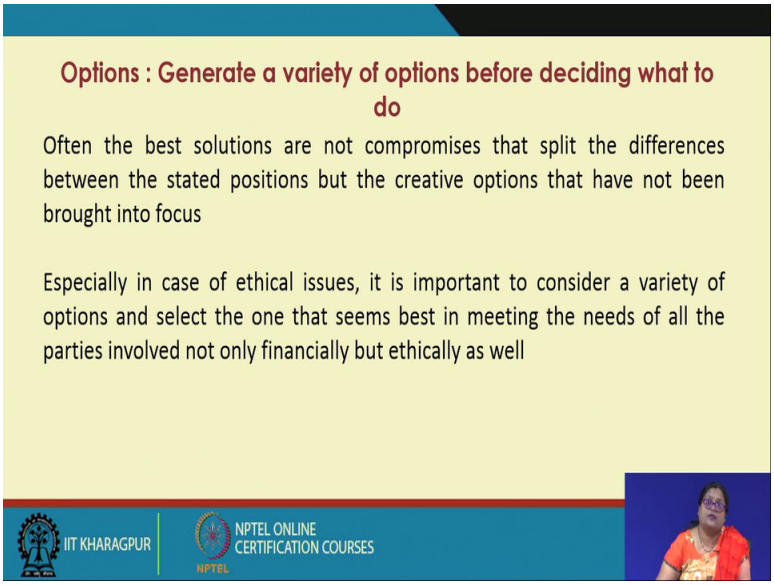

So, if we are to do that, if we are to look into the interests of all the parties involved, and not only those who are may be the positions of authority, and we have to come up with solutions which will map to the interest of mostly all the parties involved.

Then what we need to do is to like for one particular problem, we need to develop how variety of options for brainstorming to find out their acceptability, applicability for serving the interest of all the parties involved. And so, it means a variety of options need

to be generated before it is finally, decided what to do and those options should be generated keeping into like when a back of the mind the interest if all the parties involved.

So, often the best solutions are not compromises that split the differences between the stated positions, but the creative options that have not been brought into focus. So, what happens like there should not be solutions which will try to make a divide between the creative options or the like stated positions? But we should try to come up with solutions which with more options; where we are going to select that one which is trying to meet the need of all the parties involved and not only those who are financially but like ethically well.

So, what we find as a caring perspective. So, we need to give a coverage to the interest of all the interested particles. It may or may not be possible to answer to the needs in a similar way to of all the parties, but we cannot always do a rank ordering in terms of based on their expressed needs and what they have approved then the resources of the constraints that, we have we can do it in a rank ordering needed. This is the most important this is the party for which the meeting the need is most important followed by the second and the third one.

So, we have to find out options we have think of ways in which we can try to meet the need of the all the parties so that nobody feels like we have been derived my voices not been represented or heard.

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So, that type of balancing nature attitude the engineer must try to develop within himself or herself, if he or she is visualizing himself or herself as a manager, who is responsible for conflict resolution.

Now, if we again going for this discussion where there were different options and people have to expand on the options and think of what is right and what is wrong, then of course, there should must be some yard stake standard to tell like this is right and this is wrong. And everything cannot be left to the subjective decisions, because the raters may vary also in their evaluation of what is right and what is wrong.

So, the next important focus of the discussion should generally be focused towards the criteria. So, what is the objective standard they needs to be followed to show like, the standard has been met. And so, this is or it needs to be developed the solutions. So, criteria is the result should be based on some objective standards. So, in like often in a corporate criteria that must be followed while solving problems are clearly defined.

It is important so to develop sense of fairness before these criteria are met. Otherwise, disagreements may develop into the contests of will. So, if we are growing to as we were telling like it is as manager's leaders, it is not always just dictating people telling them to do things. But it is also like myself doing and then you observe and motivate to get to the way that I am doing which is called self like leading by doing. So, in that case again like when we have to arrive at a criteria. It is very important that we discuss with others and

come to a consensus what is the standard needs to be followed in the particular departments. So, it develops a sense of fairness amongst all.

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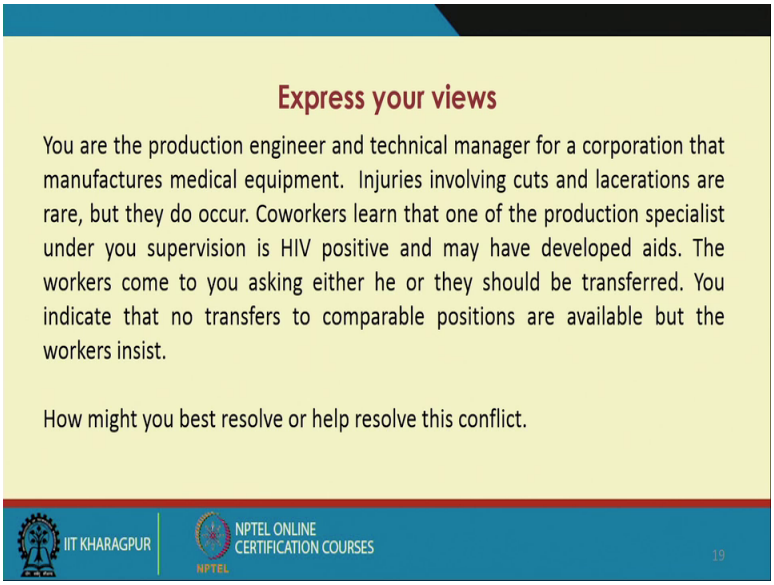

So, we will try to take a small cases like, as we see over here in expressive views. Like, you are the production engineer and technical manager for a corporation, that manufactures medical equipments. So, injuries like cuts and lacerations are rare, but we cannot tell like they do not happen they happen. So, this engineers are also happening.

So, coworkers sometimes come to know like may be one of the production specialist is in is under my supervision is working is HIV positive, may have developed aids. The workers come to you asking either he or they should be transferred you indicate that no transfers, but to the comparable positions are available, but the workers insist. So, how you may best resolve this conflict is a point of discussion?

So, what we find over here like, in this particular things 2 3 things are coming to conflict. First is the sharing of information of personnel information like, if this person is HIV positive to the organization know about it or do not know about it. And next is the outcome of the person in terms of stereo type like, I will be functioning with people who poses certain qualities. I will not be working with people who do not who poses some qualities like here.

What you find like the workers were not interested to work with the person having HIV positive. Now we are in a as a decision maker as mentioned in this case, people in many times will be dilemma because whether to listen to the greater number of workers and take some actions. But again these actions will violating the right for work for the person who is HIV positive.

So, what you do in this is like again, you can lead by doing means you can whether you accept the person with having aids for your type of worker not depends on like whether it is an like necessary criteria for performing whichever rejecting the particular person. So, if it so like this is not an essential quality, and thus it is relating to a tragedy it is a stereo type. Then what happens you may show a positive step by embracing the person and putting him in a organization; where truly the person do not lose a job due to his health issues and if this health issues are not directly connected with the nature of the performance of the employee in that particular job.

So, and if this is done and if the other see, like your positive mind set and support and how you are trying to act on these. And if you also try to remove the wrong ideas, than may be fear in the mind of the other people and make them interact with this person suffering from HIV, may be this will better try to answer the conflict. So, one side you need to see whether possessing this disease is going to hamper the performance of the person who is in point case point over here.

If it is not, then we cannot discriminate a person and like deprive him of certain benefits like which the other employees are having. But given said that because the safety of the other workers who stay food is not may be one to interact with this person due to some stereo type in their mind. So, you have to think of the safety of those individuals also, and maybe it is more important to generate an awareness camp about it and to find out like in what cases what the do's and do not's type. So, that they get to know this is in a better way. Sometimes because they are ignorant, they try to for judgments about some cases which may be a wrong interpretation. So, that needs to be like relooked in to.

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So, what we find like this will lead to, this discussions will be based on the criteria and which is based on objective standards. So, the criteria should be followed while solving problems. So, it is important to develop a sense of fairness before this criteria met. And like, otherwise like if the people do not feel like they have been consulted like before fixing up any criteria which everyone is going to adhere to then it may lead to disagreements and develop contests of will.

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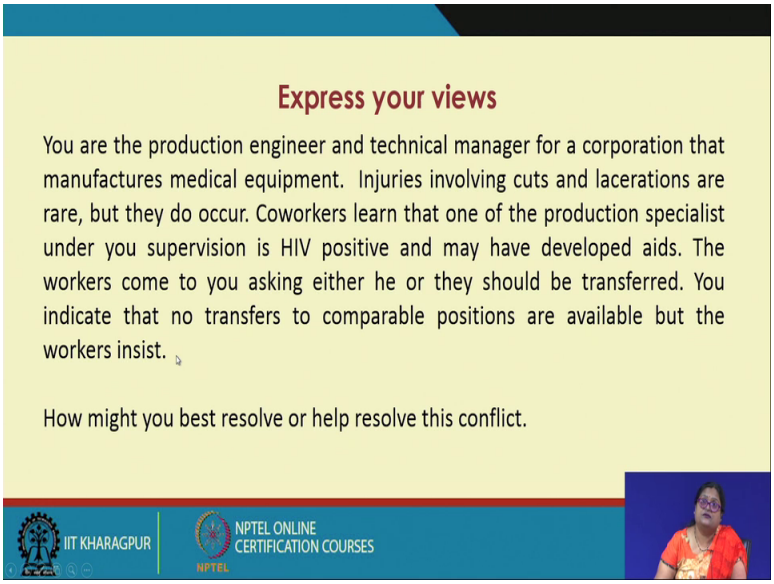

So, going back to that, but we find for them, in this particular case is you may also try to find out like. Because here in this case a no transfers to comparable positions are available then what you do is like following this is a like a sense of fairness.

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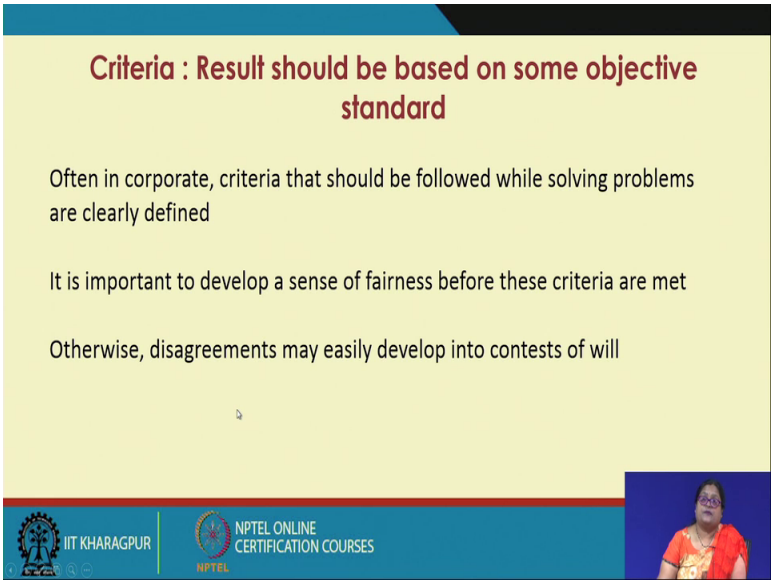

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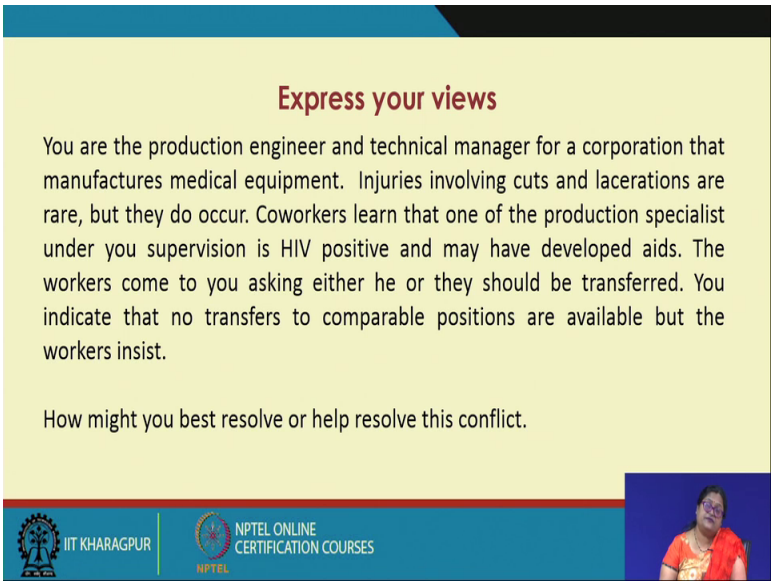

So, the treatment like the judgment is to remove or transfer this person would be against the could be discriminating for the person. And not like a fairness to that person. So, while we are taking any decision to resolve this conflict, when we because this we may

have developed a these are all assumptions which may or may not be true, if you are going to go for an in depth learning about it.

So, the first and foremost part of responsibility of the like you as a production engineer in this case the technical manager, to develop proper awareness in the mind of people to develop a proper responses and to remove the fear part, may be you take one step forward in like accepting the person in your organization and your life. And if the others observe and see like you have not faced with any adverse consequences due to being in contact with this HIV person may be others are going to change their views also.

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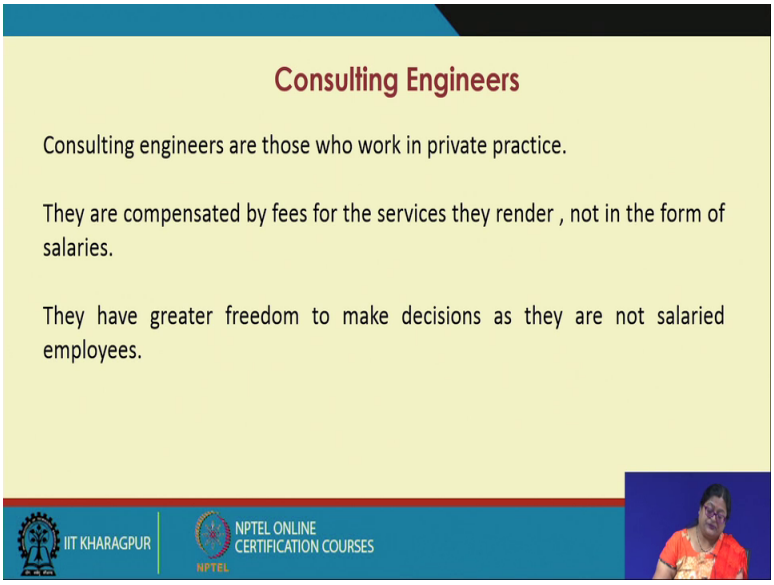

So, next we will discuss about the from the role of consulting engineers we have discussed about the role of leaders as managers. And next we are going to discuss about a role of consulting engineers. So, we have seen here 3 roles as managers as leaders and this consultant engineers. In this discussion we have discussed about the role of leader's managers. We are going to discuss the role the role as consulting engineers.

Here we are when we are trying to discuss the role of consulting engineers we will be discussing those roles of engineers who are in private practice. And they are not in the form of salaries, they are not salaried employees, but they compensated by the fees for the service that they render. And there could be various conflict in issues related to that which we are going to see in the next module.

Thank you.