JEPPIAAR INSTITUTE OF TECHNOLOGY

"Self-Belief | Self Discipline | Self Respect"

DEPARTMENT
OF
COMPUTER SCIENCE AND ENGINEERING

LECTURE NOTES

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UNIT IV
SAFETY, RESPONSIBILITIES AND RIGHTS

Safety and Risk – Assessment of Safety and Risk – Risk Benefit Analysis and Reducing Risk - Respect for Authority – Collective Bargaining – Confidentiality – Conflicts of Interest – Occupational Crime – Professional Rights – Employee Rights – Intellectual Property Rights (IPR) – Discrimination

4.1 Safety and Risk

Risk is a key element in any engineering design.

Concept of Safety:

"A ship in harbor is safe, but that is not what ships are built for" – John A. Shedd 'A thing is safe if its risks are judged to be acceptable' - William W. Lawrence

- We buy an ill-designed Iron box in a sale-> Underestimating risk
- We judge fluoride in water can kill lots of people -> Overestimating risk
- We hire a taxi, without thinking about its safety -> Not estimating risk
- How does a judge pass a judgement on safety in these 3 cases?

….*So, this definition won't do in real life.*

Then, what is acceptable also depends upon the individual or group's value judgment. Hence a better, *working definition* of *concept of safety* could be,

"A thing is safe (to a certain degree) with respect to a given person or group at a given time if, were they fully aware of its risks and expressing their most settled values, they would judge those risks to be acceptable (to that certain degree)." -Mike Martin and Roland Schinzinger.

A thing is NOT SAFE if it exposes us to unacceptable danger or hazard.

- RISK is the potential that something unwanted and harmful may occur.
- We take a risk when we undertake something or use a product that is not safe.
- Risk in technology could include dangers of bodily harm, economic loss, or environmental degradation.

➢ Some may assume that "safety" is a concrete concept, while "risk" is a vague, hypothetical concept

➢ In fact, its the other way around

➢ Risks always exist. But true safety never exists, except in hypothetical situations

➢ So, risk is *reality*, safety is fantasy.

When a thing or a product is proved to be dangerous or hazardous then it is unsafe.

RISK is the potential that something unwanted and harmful may occur. Risk is the possibility of suffering harm or loss. Risk is defined as the probability of a specified level of hazardous consequences being realized .Risk is thus a product of probability(P) and consequence which is given by the equation R = PxC.

When we undertake something, which is not safe or by using a product which is not safe then we are said to be having a risk. Risk covers various types of undesirable occurrences. On the basis of technology risk includes the dangers of bodily harms or economic loss or even environmental degradation. Good engineering practice has always been concerned with safety. Whenever the society is more influenced by technology there is more possibility of facing risks not only by the users but also by the products.

Engineers and Technology have helped to overcome some ill effects of natural disasters such as droughts and floods. But in some areas engineering and technology have increased our vulnerability to natural dangers such as Earthquakes.
A risk may fall into one of the following categories:

Low consequences, Low probability.
High consequences, High probability.
Low consequences, High probability.
High consequences, Low probability.

Types of Risks:

Voluntary and Involuntary Risks
Short term and Long Term
Consequences Expected
Portability
Reversible Effects
Threshold levels for
Risk Delayed and
Immediate Risk

Risk is one of the most elaborate and extensive studies. The study usually covers risk identification, risk analysis, risk assessment, risk rating, suggestions on risk control and risk mitigation. Interestingly, risk analysis can be expanded to full fledge risk management study. The risk management study also includes residual risk transfer, risk financing etc.

Stepwise, Risk Analysis will include:

• Hazards identification
• Failure modes and frequencies evaluation from established sources and best practices.
• Selection of credible scenarios and risks.
• Fault and event trees for various scenarios.
• Consequences - effect calculations with work out from models.
• Individual and societal risks.
• ISO risk contours superimposed on layouts for various scenarios.
• Probability and frequency analysis.
• Established risk criteria of countries, bodies, standards.
• Comparison of risk against defined risk criteria.
• Identification of risk beyond the location boundary, if any.
• Risk mitigation measures.

The steps followed are need based and all or some of these may be required from the above depending upon the nature of site/plant.

Safety is a matter of how people would find risks acceptable or unacceptable, if they knew the risks, and are basing their judgments on their *most settled value* perspective. So, to this extent, it is *objective*.

Safety is *'acceptable risk'*.

Acceptable Risk

'A risk is acceptable when those affected are generally *no longer (or not) apprehensive* about it.'

Apprehension (i.e. anxiety) depends largely on factors such as

- ❖ whether the risk is assumed voluntarily.
- ❖ how the probabilities of harm (or benefit) is perceived.
- ❖ job-related or other pressures that causes people to be aware of or to overlook risks.
- ❖ whether the defects of a risky activity or situation are immediately noticeable or close at hand .
- ❖ whether the potential victims are identifiable beforehand.

Voluntary risk and Control

Voluntary risks are hazards associated with activities that we decide to undertake (e.g., driving a car, riding a motorcycle, climbing a ladder, smoking cigarettes, skydiving, formula one racing).

'Job related risks'

- ❖ Many workers *are taking risks in their jobs* in their stride like being exposed to asbestos.
- ❖ *Exposure to risks* on a job is in one sense of *voluntary nature* since one can always refuse to submit to the work or may have control over how the job is done.
- ❖ But generally workers have *no choice* other than what they are told to do since they *want to stick to the only job* available to them.
- ❖ But they are *not* generally *informed* about the exposure to toxic substances and other dangers which are *not readily* seen, smelt, heard or otherwise sensed.
- ❖ Occupational health and safety regulations and unions can have a better say in correcting these situations but still things are far below expected safety standards.
- ❖ Engineers while designing work stations must take into account the casual attitude of workers on safety (esp. when they are paid on piece rate).

4.2 Assessment of Safety and Risk

Risk assessment is the determination of quantitative or qualitative value of risk related to a concrete situation and a recognized threat (also called hazard). *Quantitative risk assessment* requires calculations of two components of risk *(R)*:, the magnitude of the potential loss *(L)*, and the probability *(p)* that the loss will occur. **Acceptable risk** is a risk that is understood and tolerated usually because the cost or difficulty of implementing an effective countermeasure for the associated vulnerability exceeds the expectation of loss.

Fig. 4.1. Steps in the assessment of risk

4.3 Risk Benefit Analysis:

Risk-benefit analysis is the comparison of the risk of a situation to its related benefits. For research that involves more than minimal risk of harm to the subjects, the investigator must assure that the amount of benefit clearly outweighs the amount of risk. Only if there is favorable risk benefit ratio, a study may be considered ethical.

Risk Benefit Analysis Example

Exposure to personal risk is recognized as a normal aspect of everyday life. We accept a certain level of risk in our lives as necessary to achieve certain benefits. In most of these risks we feel as though we have some sort of control over the situation. For example, driving an automobile is a risk most people take daily. "The controlling factor appears to be their perception of their individual ability to manage the risk-creating situation." Analyzing the risk of a situation is, however, very dependent on the individual doing the analysis. When individuals are exposed to involuntary risk, risk which they have no control, they make risk aversion their primary goal. Under these circumstances individuals require the probabilty of risk to be as much as one thousand times smaller then for the same situation under their perceived control.

Evaluations of future risk:

- Real future risk as disclosed by the fully matured future circumstances when they develop.
- Statistical risk, as determined by currently available data, as measured actuarially for insurance premiums.
- Projected risk, as analytically based on system models structured from historical studies.

• Perceived risk, as intuitively seen by individuals. Air transportation as an example:
• Flight insurance company - statistical risk.
• Passenger - percieved risk.
• Federal Aviation Administration(FAA) - projected risks.

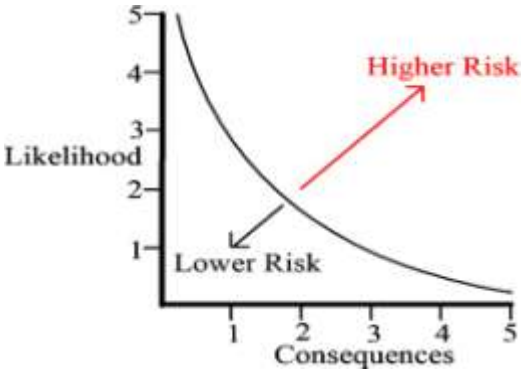

Fig. 4.2. Likelihood Vs Consequences

How to Reduce Risk?

1.Define the Problem
2.Generate Several Solutions
3. Analyze each solution to determine the pros and cons of each
4. Test the solutions
5.Select the best solution
6. Implement the chosen solution
7. Analyse the risk in the chosen solution
8. Try to solve it. Or move to next solution.

Risk analysis -5 steps

1. Identifying Hazards
2. Assessing the Risk
3. Documentation
4. Controlling
5. Ongoing Monitoring

Risk-Benefit Analysis and Risk Management

Informative risk-benefit analysis and effective risk management are essential to the ultimate commercial success of your product. We are a leader in developing statistically rigorous, scientifically valid risk-benefit assessment studies that can be used to demonstrate the level of risk patients and other decision makers are willing to accept to achieve the benefits provided by your product.

A Disaster=A serious continued event, A state of unpreparedness. category of events the so called learning incidents is precursors to high consequences of major events. The fourth category comes under the major hazards control and requires special attention .Risk Analysis is mandatory for this category of major events.

4.4 Reducing Risk

Definition

Reducing risk is one of the major risk management techniques. Taking precautionary measures to reduce the likelihood of a loss, or to reduce the severity of a possible loss, for example, installing a security system.

Risks can come from uncertainty in financial markets, threats from project failures (at any phase in design, development, production, or sustainment life-cycles), legal liabilities, credit risk, accidents, natural causes and disasters as well as deliberate attack from an adversary, or events of uncertain or unpredictable root-cause. Several risk management standards have been developed including the Project Management Institute, the National Institute of Standards and Technology, actuarial societies, and ISO standards. Methods, definitions and goals vary widely according to whether the risk management method is in the context of project management, security, engineering, industrial processes, financial portfolios, actuarial assessments, or public health and safety.

The strategies to manage threats (uncertainties with negative consequences) typically include transferring the threat to another party, avoiding the threat, reducing the negative effect or probability of the threat, or even accepting some or all of the potential or actual consequences of a particular threat, and the opposites for opportunities (uncertain future states with benefits).

Disasters often follow natural hazards. A disaster's severity depends on how much impact a hazard has on society and the environment. The scale of the impact in turn depends on the choices we make for our lives and for our environment. Disaster risk reduction is the concept and practice of reducing disaster risks through systematic efforts to analyse and reduce the causal factors of disasters. Reducing exposure to hazards, lessening vulnerability of people and property, wise management of land and the environment, and improving preparedness and early warning for adverse events are all examples of disaster risk reduction.

4.5 Respect for Authority

Definition

Authority is the power to enforce laws, exact obedience, command, determine, or judge. To feel or show esteem, honor, and appreciation for. Obedience is usually the best way to show respect. Without order nothing could be accomplished. Without authority there can be no order.

The professional like engineers have obligations to respect their employees' legitimate authority. An authority offers a way for identifying the areas of personal responsibility and accountability.

Expert Authority:

In order to avoid the problems in the institutional authority. Expert authority is the possession of special knowledge, skill, or competence to perform some takes or to give sound advice. For example, doctors are authorities on health matters, civil engineers are authorities on structures and aesthetics of building, lawyers are

authorities in law matters and computer professionals are the authorities on software, hardware, etc.

The name for expert authority is "authority for leadership" since it involves the expertise the effectively direct others. In most of the cases, engineers will have expert authority in matters related to the technology, while institutional authority will be held by line managers who look after the day-to-day activities of the organization.

Institutional authority:

It refers to the authority within the organization. For instance, accounts manager is authorized with some limitations to sanction financial commitments within his institution. If the authority is given to the qualified personnel, the goals of the organization will be met easily.

Authority versus power:

Ineffective persons cannot command power if they lack leadership, they cannot inspire, and motivate employees, even if authorized to do so. In other words, people who are effective may acquire great power or influence - power goes well beyond the authority of position held. Charismatic leaders often have influence outside their domains of authority and highly respected engineers of proven integrity may have power an organization exceeding their explicitly institutions rights.

Morally Justified authority:

The engineers may have the institutional duty to obey the employer to do morally unjustified issues. So, institutional rights and duties cannot be applied in the same sense with rights and duties that are morally justified.

The institutional authority is morally justified, only when the goals of the institution are morally permissible or morally desirable and the manner in which it is exercised does not violate other moral duties.

Accepting authority:

Employees mostly accept the guidance and obey their employer, seldom disobey on moral grounds. Each employee of an organization has something called as "zone acceptance" that shows their interest to accept their employees authority. Most of the times, employees expand their zone of acceptance without looking into whether the authority demands moral acts or not. This reveals that the employees lack moral integrity. Hence, the employer's directives are to be evaluated carefully by the employees in order to have justifications before going ahead to accept the directive.

Thus, engineering professionals should weigh their obligation to the public, their employees, their colleagues, and others when conflicts between such obligations arise. A simple, exception less ordering of priorities is not always possible.

4.6 Collective Bargaining

Collective bargaining is a process of negotiations between employers and a group of employees aimed at reaching agreements to regulate working conditions. The interests of the employees are commonly presented by representatives of a trade union to which the employees belong. The collective agreements reached by these

negotiations usually set out wage scales, working hours, training, health and safety, overtime, grievance mechanisms, and rights to participate in workplace or company affairs.

The union may negotiate with a single employer (who is typically representing a company's shareholders) or may negotiate with a group of businesses, depending on the country, to reach an industry wide agreement. A collective agreement functions as a labor contract between an employer and one or more unions. Collective bargaining consists of the process of negotiation between representatives of a union and employers (generally represented by management, in some countries such as Austria, Sweden and the Netherlands by an employers' organization) in respect of the terms and conditions of employment of employees, such as wages, hours of work, working conditions, grievance- procedures, and about the rights and responsibilities of trade unions. The parties often refer to the result of the negotiation as a *collective bargaining agreement* (CBA) or as a *collective employment agreement* (CEA).

In the United States, collective bargaining takes place between labor union leaders and the management of the company that employs that union's workers. The result of collective bargaining is called a collective bargaining agreement, and it establishes rules of employment for a set number of years. The cost of this employee representation is paid by union members in the form of dues. The collective bargaining process may involve antagonistic labor strikes or employee lockouts if the two sides are having trouble reaching an agreement.

Law of collective bargaining

The law of collective bargaining encompasses four basic points:

- The employer may not refuse to bargain over certain subjects with the employees' representative, provided that the employees' representative has majority support in the bargaining unit.
- Those certain subjects, called mandatory subjects of bargaining, include wages, hours, and other terms and conditions of employment.
- The employer and the union are not required to reach agreement but must bargain in Good Faith over mandatory subjects of bargaining until they reach an impasse.
- While a valid collective bargaining agreement is in effect, and while the parties are bargaining but have not yet reached an impasse, the employer may not unilaterally change a term of employment that is a mandatory subject of bargaining. But once the parties have reached an impasse, the employer may unilaterally implement its proposed changes, provided that it had previously offered the changes to the union for consideration.

4.7 Confidentiality

Confidentiality is a set of rules or a promise that limits access or places restrictions on certain types of information.

Confidentiality means not sharing information about people without their

knowledge and agreement, and ensuring that written and electronic information cannot be accessed or read by people who have no reason to see it. Confidentiality is important because:

- Clients may not trust a support worker who does not keep information confidential
- Clients may not feel valued or able to keep their self-esteem if their private details are shared with others.
- Client's safety may be put at risk if details of their property and habits are shared publicly.

Confidentiality of information, enforced in an adaptation of the military's classic "need to know" principle, forms the cornerstone of information security in today's corporations. The so called 'confidentiality bubble' restricts information flows, with both positive and negative consequences.

Both the privilege and the duty serve the purpose of encouraging clients to speak frankly about their cases. This way, lawyers will be able to carry out their duty to provide clients with zealous representation. Otherwise, the opposing side may be able to surprise the lawyer in court with something which he did not know about his client, which makes both lawyer and client look stupid. Also, a distrustful client might hide a relevant fact which he thinks is incriminating, but which a skilled lawyer could turn to the client's advantage (for example, by raising affirmative defenses like self-defense).

However, most jurisdictions have exceptions for situations where the lawyer has reason to believe that the client may kill or seriously injure someone, may cause substantial injury to the financial interest or property of another, or is using (or seeking to use) the lawyer's services to perpetrate a crime or fraud.

In such situations the lawyer has the discretion, but not the obligation, to disclose information designed to prevent the planned action. Most states have a version of this discretionary disclosure rule under Rules of Professional Conduct, Rule 1.6 (or its equivalent).

A few jurisdictions have made this traditionally discretionary duty mandatory. For example, see the New Jersey and Virginia Rules of Professional Conduct, Rule 1.6.

In some jurisdictions the lawyer must try to convince the client to conform his or her conduct to the boundaries of the law before disclosing any otherwise confidential information.

Note that these exceptions generally do not cover crimes that have already occurred, *even* in extreme cases where murderers have confessed the location of missing bodies to their lawyers but the police are still looking for those bodies. The U.S. Supreme Court and many state supreme courts have affirmed the right of a lawyer to withhold information in such situations. Otherwise, it would be impossible for any criminal defendant to obtain a zealous defense.

California is famous for having one of the strongest duties of confidentiality in the world; its lawyers must protect client confidences at "every peril to himself or

herself." Until an amendment in 2004, California lawyers were not even permitted to disclose that a client was about to commit murder.

Recent legislation in the UK curtails the confidentiality professionals like lawyers and accountants can maintain at the expense of the state. Accountants, for example, are required to disclose to the state any suspicions of fraudulent accounting and, even, the legitimate use of tax saving schemes if those schemes are not already known to the tax authorities.

4.8 Conflicts of Interest

A **conflict of interest** (**COI**) is a situation occurring when an individual or organization is involved in multiple interests, one of which could possibly corrupt the motivation.

Conflict of interest is a situation in which a person has a duty to more than one person or organization, but cannot do justice to the actual or potentially adverse interests of both parties. This includes when an individual's personal interests or concerns are inconsistent with the best for a customer, or when a public official's personal interests are contrary to his/her loyalty to public business. An attorney, an accountant, a business adviser or realtor cannot represent two parties in a dispute and must avoid even the appearance of conflict. He/she may not join with a client in business without making full disclosure of his/her potential conflicts, he/she must avoid commingling funds with the client, and never, never take a position adverse to the customer.

The following are the most common forms of conflicts of interests:

- Self-dealing, in which an official who controls an organization causes it to enter into a transaction with the official, or with another organization that benefits the official. The official is on both sides of the "deal."
- Outside employment, in which the interests of one job contradict another.
- Family interests, in which a spouse, child, or other close relative is employed (or applies for employment) or where goods or services are purchased from such a relative or a firm controlled by a relative. For this reason, many employment applications ask if one is related to a current employee. If this is the case, the relative could then recuse from any hiring decisions. Abuse of this type of conflict of interest is called nepotism.
- Gifts from friends who also do business with the person receiving the gifts. (Such gifts may include non-tangible things of value such as transportation and lodging.)
- Pump and dump, in which a stock broker who owns a security artificially inflates the price by "upgrading" it or spreading rumors, sells the security and adds short position, then "downgrades" the security or spreads negative rumors to push the price down.

Other improper acts that are sometimes classified as conflicts of interests are probably better classified elsewhere. Accepting bribes can be classified as corruption; almost everyone in a position of authority, particularly public authority, has the potential for such wrongdoing. Similarly, use of government or corporate

property or assets for personal use is fraud, and classifying this as a conflict of interest does not improve the analysis of this problem. Nor should unauthorized distribution of confidential information, in itself, be considered a conflict of interest. For these improper acts, there is no inherent conflict of **roles** (see above), unless being a (fallible) human being rather than (say) a robot in a position of power or authority is considered to be a conflict.

COI is sometimes termed **competition of interest** rather than "conflict", emphasizing a connotation of natural competition between valid interests rather than violent conflict with its connotation of victimhood and unfair aggression. Nevertheless, denotatively, there is too much overlap between the terms to make any objective differentiation.

4.9 Occupational Crime

Occupational crime involves abuses of structural systems in the workplace in order to accomplish various white-collar crimes. Most of these involve access by employees, managers, or other workers seeking personal gain. Occupational crime bears many similarities to organized crime, and may involve overlaps with organized crime elements. In some cases, occupational crime is accomplished by the combined efforts of many persons, rather than a single individual.

Examples of Occupational Crime

Different types of acts may be considered occupational crime. Some common types of occupational crime may include:

- Money laundering
- Embezzlement
- Tax fraud and various employment tax evasion violations
- Racketeering
- Stocks and securities violations
- Altering records (“cooking the books”)
- Corruption of government officials

Occupational crime may also involve more industry-specific violations, such as toxic dumping or other environmental violations. Some industries are more highly regulated than others.

Legal Punishments for Occupational Crime

Most occupational crime punishments are determined according to the economic damages involved. For instance, embezzlement crimes may either be categorized as misdemeanors or felonies. The difference generally lies in the dollar amount stolen. Limits between misdemeanor and felony charges may be different according to each jurisdiction.

In addition, punishments may be determined according to other factors like:

- Amount of property damage
- Amount of harm to the environment
- Whether the violation is highly offensive to public policies and standards of acceptable conduct

- Whether the defendants have a history of similar crimes
- The number of persons involved in the crime scheme

As in any other criminal case, defenses may apply depending on the facts.

Hiring a Lawyer for Help with Occupational Crime

Occupational crime can often involve widespread corruption or hazards in the workplace. Some occupational crime cases are filed as class action lawsuits if they affect a large number of people in the same way. You may need to hire a lawyer if you need help with any type of occupational crime issue. Your attorney can provide you with legal advice for your situation. Also, if you have any specific concerns or questions regarding your company's business practices, your lawyer can help ensure that your group is complying with state and federal laws.

4.10 Professional Rights

The responsibility of members, individually and collectively, to maintain the standards of professional practice contingent upon the recognition by society of the member's right to:

(a) Autonomy in establishing environment;

(b) Primary control in diagnosing learner needs, in planning curriculum and in determining appropriate methods of instruction to meet these needs;

(c) primary control over evaluation instruments and processes and the interpretation and communication of evaluation data

4.11 Employee Rights

Employees covered by the National Labor Relations Act are afforded certain rights to join together to improve their wages and working conditions, with or without a union.

Union Activity

Employees have the right to attempt to form a union where none currently exists, or to decertify a union that has lost the support of employees.

Examples of employee rights include:

- Forming, or attempting to form, a union in workplace;
- Joining a union whether the union is recognized by employer or not;
- Assisting a union in organizing your fellow employees;
- Refusing to do any or all of these things.
- To be fairly represented by a union

Activity Outside a Union

Employees who are not represented by a union also have rights under the NLRA. Specifically, the National Labor Relations Board protects the rights of employees to engage in "concerted activity", which is when two or more employees take action for their mutual aid or protection regarding terms and conditions of employment. A single employee may also engage in protected concerted activity if he or she is acting on the authority of other employees, bringing group complaints to the employer's attention, trying to induce group action, or seeking to prepare for group action.

A few examples of protected concerted activities are:

- Two or more employees addressing their employer about improving their pay.
- Two or more employees discussing work-related issues beyond pay, such as safety concerns, with each other.
- An employee speaking to an employer on behalf of one or more co-workers about improving workplace conditions.

Who is covered?

Most employees in the private sector are covered by the NLRA. However, the Act specifically excludes individuals who are:

- employed by Federal, state, or local government
- employed as agricultural labourers
- employed in the domestic service of any person or family in a home
- employed by a parent or spouse
- employed as an independent contractor
- employed as a supervisor (supervisors who have been discriminated against for refusing to violate the NLRA may be covered)
- employed by an employer subject to the Railway Labor Act, such as railroads and airlines
- employed by any other person who is not an employer as defined in the NLRA

Employee Rights in the Workplace

All employees have basic rights in the workplace - including the right to privacy, fair compensation, and freedom from discrimination. A job applicant also has certain rights even prior to being hired as an employee. Those rights include the right to be free from discrimination based on age, gender, race, national origin, or religion during the hiring process. For example, a prospective employer cannot ask a job applicant certain family- related questions during the hiring process.

In most states, employees have a right to privacy in the workplace. This right to privacy applies to the employee's personal possessions, including handbags or briefcases, storage lockers accessible only by the employee, and private mail addressed only to employee. Employees may also have a right to privacy in their telephone conversations or voicemail messages. However, employees have very limited rights to privacy in their e-mail messages and Internet usage while using the employer's computer system.

There are certain pieces of information that an employer may not seek out concerning a potential job applicant or employee. An employer may not conduct a credit or background check of an employee or prospective employee unless the employer notifies the individual in writing and receives permission to do so.

Other important employee rights include:

- Right to be free from discrimination and harassment of all types;
- Right to a safe workplace free of dangerous conditions, toxic substances, and other potential safety hazards;
- Right to be free from retaliation for filing a claim or complaint against an employer (these are sometimes called "whistleblower" rights);
- Right to fair wages for work performed.

4.12 Intellectual Property Rights (IPR)

Intellectual Property Rights are legal rights, which result from intellectual activity in industrial, scientific, literary & artistic fields. These rights Safeguard creators and other producers of intellectual goods & services by granting them certain time-limited rights to control their use. Protected IP rights like other property can be a matter of trade, which can be owned, sold or bought. These are intangible and non exhausted consumption.

Types/Tools of IPRs:

a. Patents.
b. Trademarks.
c. Copyrights and related rights.
d. Geographical Indications.
e. Industrial Designs.
f. Trade Secrets.
g. Layout Design for Integrated Circuits.
h. Protection of New Plant Variety.

a. **Patent**

A patent is an exclusive right granted for an invention, which is a product or a process that provides a new way of doing something, or offers a new technical solution to a problem. It provides protection for the invention to the owner of the patent. The protection is granted for a limited period, i.e 20 years.

Patent protection means that the invention cannot be commercially made, used, distributed or sold without the patent owner's consent. A patent owner has the right to decide who may - or may not - use the patented invention for the period in which the invention is protected. The patent owner may give permission to, or license, other parties to use the invention on mutually agreed terms. The owner may also sell the right to the invention to someone else, who will then become the new owner of the patent. Once a patent expires, the protection ends, and an invention enters the public domain, that is, the owner no longer holds exclusive rights to the invention, which becomes available to commercial exploitation by others.

All patent owners are obliged, in return for patent protection, to publicly disclose information on their invention in order to enrich the total body of technical knowledge in the world. Such an ever-increasing body of public knowledge promotes further creativity and innovation in others. In this way, patents provide not only protection for the owner but valuable information and inspiration for future generations of researchers and inventors.

b. **Trademarks:**

A trademark is a distinctive sign that identifies certain goods or services as those produced or provided by a specific person or enterprise. It may be one or a combination of words, letters, and numerals. They may consist of drawings, symbols, three- dimensional signs such as the shape and packaging of goods, audible signs such as music or vocal sounds, fragrances, or colours used as distinguishing features. It provides protection to the owner of the mark by ensuring the exclusive right to use

it to identify goods or services, or to authorize another to use it in return for payment.

It helps consumers identify and purchase a product or service because its nature and quality, indicated by its unique trademark, meets their needs. Registration of trademark is

prima facie proof of its ownership giving statutory right to the proprietor. Trademark rights may be held in perpetuity. The initial term of registration is for 10 years; thereafter it may be renewed from time to time.

c. **Copyrights and related rights**:

Copyright is a legal term describing rights given to creators for their literary and artistic works. The kinds of works covered by copyright include: literary works such as novels, poems, plays, reference works, newspapers and computer programs; databases; films, musical compositions, and choreography; artistic works such as paintings, drawings, photographs and sculpture; architecture; and advertisements, maps and technical drawings. Copyright subsists in a work by virtue of creation; hence it's not mandatory to register. However, registering a copyright provides evidence that copyright subsists in the work & creator is the owner of the work.

Creators often sell the rights to their works to individuals or companies best able to market the works in return for payment. These payments are often made dependent on the actual use of the work, and are then referred to as royalties. These economic rights have a time limit, (other than photographs) is for life of author plus sixty years after creator's death.

d. **Geographical Indications (GI):**

GI are signs used on goods that have a specific geographical origin and possess qualities or a reputation that are due to that place of origin. Agricultural products typically have qualities that derive from their place of production and are influenced by specific local factors, such as climate and soil. They may also highlight specific qualities of a product, which are due to human factors that can be found in the place of origin of the products, such as specific manufacturing skills and traditions.

e. **Industrial Designs**:

Industrial designs refer to creative activity, which result in the ornamental or formal appearance of a product, and design right refers to a novel or original design that is accorded to the proprietor of a validly registered design. Industrial designs are an element of intellectual property. Under the TRIPS Agreement, minimum standards of protection of industrial designs have been provided for. As a developing country, India has already amended its national legislation to provide for these minimal standards.

f. **Trade Secrets**:

It may be confidential business information that provides an enterprise a competitive edge may be considered a trade secret. Usually these are manufacturing or industrial secrets and commercial secrets. These include sales methods, distribution methods, consumer profiles, advertising strategies, lists of suppliers and clients, and manufacturing processes. Contrary to patents, trade secrets are protected without registration.

g. **Layout Design for Integrated Circuits**:

Semiconductor Integrated Circuit means a product having transistors and other circuitry elements, which are inseparably formed on a semiconductor material or an insulating material or inside the semiconductor material and designed to perform an electronic circuitry function.

The aim of the Semiconductor Integrated Circuits Layout-Design Act 2000 is to provide protection of Intellectual Property Right (IPR) in the area of Semiconductor Integrated Circuit Layout Designs and for matters connected therewith or incidental thereto.

h. **Protection of New Plant Variety**:

The objective of this act is to recognize the role of farmers as cultivators and conservers and the contribution of traditional, rural and tribal communities to the country's agro biodiversity by rewarding them for their contribution and to stimulate investment for R & D for the development new plant varieties to facilitate the growth of the seed industry.

The Plant Variety Protection and Farmers Rights act 2001 was enacted in India to protect the New Plant Variety; the act has come into force on 30.10.2005 through Authority. Initially 12 crop species have been identified for regt. i.e. Rice, Wheat, Maize, Sorghum, Pearl millet, Chickpea, Green gram, Black gram, Lentil, Kidney bean etc. India has opted for sui- generic system instead of patents for protecting new plant variety. Department Agriculture and Cooperation is the administrative ministry looking after its registration and other matters.

4.13 Discrimination

Discrimination can be interpreted in several ways. Discrimination means to make an unfair difference in one‘s treatment of people. It also means giving preference on the basis of sex, race, religion etc. In other words it can also be explained morally unjustified treatment of people on random or irrelevant basis. It is a kind of ―reverse preferential treatment‖. Reverse preferential treatment means one who gives different treatments to equal standard of two different groups.

The following are some of the examples of discrimination.

(i) Generally in automobile company for the vacancy of AGM post is filled by the virtue of promotion from the existing seniors within the company. As per the rules, the management has to make a review among the employees. The members find one suitable person who has lot of experience and training in the company. Unfortunately, the selected person does not belong to the community of the majority people of the company. The management fears if the person is given appointment there may be less employees‘ cooperation for smooth running of the company. So the management decides to promote and transfer another person who belongs to the same community of the majority from another plant.

(ii) A company has appointed more number of women engineers in its sales division. But their pay is not at par with that of men.

(iii) Due to low economic activities, a company has to face the problem of less sales. In order to overcome, this problem the management decided to send out

some engineers who are in the verge of retirement within 10 years.

Anti discrimination laws

In our country discrimination against women is controlled by many of the Laws such as Factories Act, Labor Laws, Acts relating to wages etc.

In U.S, the discrimination of public as well as private employers is prohibited legally under the civil Rights Act of 1964, the equal employment opportunity Act of 1972 etc. These acts protect the weaker, minorities and women from discrimination by race, color, religion, sex or national origin. The age discrimination is also prohibited by age discrimination in employment Act of 1967.

Preferential treatments

Preferential treatment means giving preference for the minorities and women in employment opportunities.

(i) Weak Preferential Treatment It implies giving a benefit or preference to the members of traditionally discriminated against groups over equally qualified applicants who are the members of other groups.

(ii) Strong Preferential Treatment Strong Preferential Treatment involves giving preference to women and minority applicant over better-qualified applicants from the other groups.

It shall be an unlawful employment practice for any employer, labor organization or joint labor-management committee controlling apprenticeship or other training or retraining including on-the-job training programs, to discriminate against any individual because of his race, color, religion, sex, or national origin, in admission to, or employment in, any program established to provide apprenticeship or other training.

Arguments Favoring Strong Preferential treatment

(i) As per right-ethics, preferential treatment stresses the compensatory justice principle i.e., violations of rights must be compensated. For example, the properties taken from others in the past, even if it is very minimal, must be returned. In the same way, members of groups who have suffered job discrimination in the past must be given special advantages in getting jobs today.

(ii) As per the utilitarian principle, the economic and social activities are more important for women and minorities. This can be only achieved by preferential treatment. This has to be done in order to achieve harmony between races and sexes.

Arguments against Strong preferential Treatment

(i) This type of preference is a direct violation of the rights of others people in acquiring equal opportunity.

(ii) Giving such preferences involves larger compensation to the minorities and women. So, the arguments for and against such treatment, points out the right to equal employment opportunity, the right to receive and the duty to give compensation for past discriminations. These are the best ways to achieve social integration.

It means continuous annoying and attacks on women on the basis of sexual considerations. It also covers the harassment by female superiors of the male employees and sexual harassment of employees by superiors of the same sex, Sexual

harassment includes physical and psychological attacks, coercion, misuse of authority and a variety of undesirable and indecent actions.

In short, Sexual Harassment may be defined as

(i) when applied to women, ―any sexual oriented practice which endangers a woman‘s job, that undermines her job performance and threatens her economic livelihood.‖

(ii) It is the unwanted imposition of sexual requirements in the context of relationship of unequal power.

In the field of engineering, the woman may be an engineer, a technician, or secretary and the male who harasses the women may be her manager or her colleague.

Forms of Sexual Harassment

(i) In an interview for the post of a secretary a woman is told that the job will be given to her only when she is ready to give sexual favours to the interviewer.

(ii) A woman is told by her superior that she will be given first priority for receiving a promotion if she is ready to adjust him by means of sexual contacts. When she refuses to do so, she is not given promotion and is assigned less category of job.

(iii) Against her desire, a woman is grabbed and kissed by her employer, who had asked her to stay after office hours. She refused to do so and then she has been scolded heavily on the next day by him.

(iv) A women refuses her superior‘s request for a _dating‘. She also makes it clear *that* she is not interested in going out with him ever, but he continuously insists on do the same.

(v) A male colleague of a woman continuously looks at her and makes sexual comment and suggestions about her dress and body.

(vi) A male engineer enjoys telling unwanted sex jokes to his secretary who is not interested to listen.

So, sexual harassment may be in the form of threats of penalties, offers of rewards, assaults and annoyance.

Sexual harassment may take place anywhere, such as work place, public place, schools, colleges etc. In a work place it involves lowering the economic status of women. It is an assault on the dignity of the victim.

A duty-ethicist gives a strong disapproval of the sexual harassment. It is the duty of the co-workers to treat women in proper manner with due respect. An utilitarian argues that it spoils the happiness and self-fulfillment of the victims.