

# **ATME COLLEGE OF ENGINEERING**

**13th KM Stone, Bannur Road, Mysuru - 570 028**



## **DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING**

**Course Title: RESEARCH METHODOLOGY & IPR**

**Course CODE: BRMK557**

**MODULE-3: 1) Introduction to Intellectual Property  
2) Patents**

**SEMESTER: V**

**Academic Year - 2025-26**

# **INSTITUTIONAL VISION AND MISSION**

## **VISION:**

- Development of academically excellent, culturally vibrant, socially responsible and globally competent human resources.

## **MISSION:**

- To keep pace with advancements in knowledge and make the students competitive and capable at the global level.
- To create an environment for the students to acquire the right physical, intellectual, emotional and moral foundations and shine as torchbearers of tomorrow's society.
- To strive to attain ever-higher benchmarks of educational excellence.

## **Department Vision and Mission**

### **Vision:**

To create Electrical & Electronics Engineers who excel to be technically competent and fulfill the cultural and social aspirations of the society.

### **Mission:**

- To provide knowledge to students that builds a strong foundation in the basic principles of electrical engineering, problem solving abilities, analytical skills, soft skills and communication skills for their overall development.
- To offer outcome based technical education.
- To encourage faculty in training & development and to offer consultancy through research & industry interaction.

## **Program Educational Objectives (PEOs)**

### **PEO1:**

To produce competent and ethical Electrical and Electronics Engineers who will exhibit the necessary technical and managerial skills to perform their duties in society

### **PEO2:**

To make graduates continuously acquire and enhance their technical and socio-economic skills

### **PEO3:**

To aspire graduates to embark on R&D activities leading to offering solutions and excel in various career paths.

### **PEO4:**

To produce quality engineers who have the capability to work in teams and contribute to real time projects

## **Program Outcomes (POs)**

**Engineering Graduates will be able to:**

**PO1: Engineering Knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals and an engineering specialization to the solution of complex engineering problems.

**PO2: Problem Analysis:** Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

**PO3: Design / Development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

**PO4: Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

**PO5: Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.

**PO6: The engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

**PO7: Environment and sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

**PO8: Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

**PO9: Individual and team work:** Function effectively as an individual and as a member or leader in diverse teams, and in multidisciplinary settings.

**PO10: Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

**PO11: Project management and finance:** Demonstrate knowledge and understanding of the engineering management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

**PO12: Life-long learning:** Recognize the need for and have the preparation and ability to engage in independent and lifelong learning in the broadest context of technological change.

### **Program Specific Outcomes (PSOs)**

The students will develop an ability to produce the following engineering traits:

**PSO1:** Apply the concepts of Electrical & Electronics Engineering to evaluate the performance of power systems and also to control industrial drives using power electronics.

**PSO2:** Demonstrate the concepts of process control for Industrial Automation, design models for environmental and social concerns and also exhibit continuous self- learning.

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**MODULE-3: INTRODUCTION TO INTELLECTUAL PROPERTY**

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**Syllabus**

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**Introduction To Intellectual Property:** Role of IP in the Economic and Cultural Development of the Society, IP Governance, IP as a Global Indicator of Innovation, Origin of IP History of IP in India. Major Amendments in IP Laws and Acts in India.

**Patents:** Conditions for Obtaining Patent Protection, To Patent or Not to Patent an Invention. Rights Associated with Patents. Enforcement of Patent Rights. Inventions Eligible for Patenting. Non-Patentable Matters. Patent Infringements. Avoid Public Disclosure of an Invention before Patenting. Process of Patenting. Prior Art Search. Choice of Application to be Filed. Patent Application Forms. Jurisdiction of Filing Patent Application. Publication. Pre-grant Opposition. Examination. Grant of a Patent. Validity of Patent Protection. Post-grant Opposition. Commercialization of a Patent. Need for a Patent Attorney/Agent. Can a Worldwide Patent be Obtained. Do I Need First to File a Patent in India. Patent Related Forms. Fee Structure. Types of Patent Applications. Commonly Used Terms in Patenting. National Bodies Dealing with Patent Affairs. Utility Models.

**Process of Patenting.** Prior Art Search. Choice of Application to be Filed. Patent Application Forms. Jurisdiction of Filing Patent Application. Publication. Pre-grant Opposition. Examination. Grant of a Patent. Validity of Patent Protection. Post-grant Opposition. Commercialization of a Patent. Need for a Patent Attorney/Agent. Can a Worldwide Patent be Obtained. Do I Need First to File a Patent in India. Patent Related Forms. Fee Structure. Types of Patent Applications. Commonly Used Terms in Patenting. National Bodies Dealing with Patent Affairs. Utility Models.

**Course Structure**

- 3.1 Introduction to Intellectual Property
- 3.2 Role of IP in the Economic and Cultural Development of the Society
- 3.3 IP Governance
- 3.4 IP as a Global Indicator of Innovation
- 3.5 Origin of IP History of IP in India.
- 3.6 Major Amendments in IP Laws and Acts in India.
- 3.7 Patent Protection and Rights Associated
- 3.8 Enforcement of Patent Rights
- 3.9 Inventions Eligible for Patenting
- 3.10 Process of Patenting
- 3.11 Jurisdiction of Filing Patent Application
- 3.12 National Bodies Dealing with Patent Affairs and Utility Models

### **3.1 Introduction to Intellectual Property**

Intellectual Property (IP) is a special category of property created by human intellect (mind) in the fields of arts, literature, science, trade, etc. Since IP is a novel creation of the mind, it is intangible (i.e. invisible and indivisible) in nature and differs from the tangible property, such as land, house, gold and car with which we are quite familiar. Intellectual Property Rights (IPR) are the privileges accorded to the creator/inventor (of IP) in conformance with the laws. These rights are given to the creator/inventor in exchange for revealing the process of creation/invention in the public domain. The inventor is conferred with the special rights to use, sell, distribute, offering for sale and restricting others from using the invention without his prior permission. The aforementioned rights do not apply to the physical object (e.g. book or computer or mobile phone) in which the creation may be embodied but attributed to the intellectual creativity. Broadly, IP comprises of two branches i.e. Copyrights and Related Rights and Industrial Property Rights. Copyrights and Related Rights refer to the creative expressions in the fields of literature and art, such as books, publications, architecture, music, wood/stone carvings, pictures, portrays, sculptures, films and computer-based software's/databases. The Industrial Property Rights refer to the Patents, Trademarks, Trade Services, Industrial Designs and Geographical Indications. The salient features of all the above-mentioned categories are discussed in the ensuing chapters.

### **3.2 Role of IP in the Economic and Cultural Development of the Society**

Creativity being the keystone of progress, no civilized society can afford to ignore the basic requirement of encouraging the same. The economic and social development of a society is largely dependent on creativity. The protection provided by the IPR to the creators/innovators is in fact an act of incentivization for encouraging them to create more and motivates others to create new and novel things. However, if IPR is practised rigidly, it may have a negative impact on the progress of society. For example, compliance with the Trade-Related Aspects of Intellectual Property Rights (TRIPS) Agreement has affected the farming community as they are unable to store seeds for the next crop. Multinational companies regulate the price of seeds, which is generally beyond the reach of a majority of the farmers. To circumvent the negative impact of IPR, certain laws, exceptions and limitations associated with IPR have been enacted to maintain a balance between the interests of the creators/inventors and the community. For example, farmers rights under the Protection of Plant Varieties and Farmers' Rights (PVP&FR) Act, 2001 entitles them to many privileges, such as Rights on seeds' provides rights to the farmers to save seeds, use seeds and share, exchange or sell seeds to other farmers and Right to protection against accusations of infringement' protects the farmers from infringement and other legal accusation levied upon them due to his legal ignorance in using other's plant varieties.

The use of copyrighted material for education and religious ceremonies is exempted from the operation of the rights granted in the Copyright Act. Similarly, a patent can be revoked in favour of compulsory licensing by the government during an emergency or a natural calamity. In addition, if an invention/creation is not in the

interest of society, it is not registered by the government for grant of any rights associated with IP. For example, cloning of human embryos is banned for IP protection, and so is the creation of super microbial pathogens, which can play havoc with human lives. In addition, India is enriched with massive biodiversity and genetic resources and their use is embodied in what is referred to as Traditional Knowledge (TK). However, the use of such knowledge and resources are not limited to local contexts as many innovations relate to and draw on them. Therefore, the main issue of concern is to protect TK and genetic resources, which are rapidly coming under the governance of sometimes conflicting IPR policies. To derive maximum benefit from them, the establishment of adequate legal infrastructure and enforcement is required. With initiatives like Make in India Atmanirbhar Bharat and supporting local, homegrown brands, and easy as well as accessible approach to patents and trademarks registration, it is possible to reap the benefits of our resources.

### **3.3 IP Governance**

Since IP is an integral component of human society, each and every nation has dedicated agencies for laying out the guidelines, implementation, and enforcement of IP related matters. In India, many organizations/agencies deal with various aspects of IP. The governance of all categories of IP, except the Plant Variety and Farmers Rights Act, is carried out by the Department for Promotion of Industry & Internal Trade (DPIIT) under the aegis of Ministry of Commerce and Industry, GoI. There are a few other dedicated organizations/departments established by the government to promote patent-ecosystem (patent awareness, patent filing and patent commercialization) in India e.g., Technology Information Forecasting and Assessment Council (TIFAC), National Research Development Corporation (NRDC) and Cell for IPR Promotion and Management (CIPAM), etc.

In order to create a hassle-free exchange of IP related activities amongst all the nations, it is imperative to have minimum standards of rules and regulations pertaining to all aspects of IP including rights, empowerment, exceptions, etc. To achieve this goal, the United Nations (UN) has established an organization called the World Intellectual Property Organization (WIPO). This agency is at the forefront of imparting knowledge about IP and governs international filing and registration of IP through various Conventions and Treaties like Paris Conventions, Patent Cooperation Treaty (PCT), Rome Convention, Berne Convention, etc.

### **3.4 IP as a Global Indicator of Innovation**

IP, especially patents, is considered as one of the important cogs in assessing the innovation index of a nation. The global ranking organizations always have IP or a subset of IP as one of the parameters for understanding and grading the Science, Technology, and Innovation (STI) ecosystem of a nation. For example, the Scimago (publicly available online portal which ranks journals and countries based on the data taken from Scopus) 2020 report ranked India at 4th position in the parameter of a number of Research Publications, and 50th position in the parameter of Intellectual Property Rights. The global ranking can be improved by sensitizing the teaching

and scientific communities about the importance of IP and creating infrastructure for the same in the institutes of higher learning.

### **3.5 Origin of IP History of IP in India**

The history of the Indian patent system dates back to the pre-independence era of British rule. The first patent related legislation in India was Act VI of 1856, adapted from the British Patent Law of 1852. The objective of this legislation was to encourage the inventions of new and useful manufactures. The rights conferred to the inventor were termed as Exclusive Privileges. In 1859, certain amendments were made to the Act, such as:

A few years later, it was felt that Designs could also pass the criteria of the invention and thus should be included in the Patent Act. The new Act was rechristened as —The Patterns and Designs Protection Act under Act XIII of 1872. This Act was further amended in 1883 (XVI of 1883) to include the provision of protection for Novelty in the invention. At the beginning of the 20th century, all the earlier Acts related to inventions and designs were done away with the introduction of The Indian Patents and Designs Act, 1911 (Act II of 1911). As per this Act, the governance of patents was placed under the management of the Controller of Patents. In the next three decades, many amendments were introduced for reciprocal arrangements with other countries for securing priority dates. These amendments dealt with;

1. Use of invention by the government.
2. Patent of Addition.
3. Enhancing the term of the patent from 14 years to 16 years.
4. Filing of Provisional Application and submission of Complete Application within 9 months from the date of filing the application.

After India got independence in 1947, many patent experts felt the need to review the Indian Patents and Designs Act, 1911, keeping the national interest (economic and political) in mind. A dedicated committee, chaired by a renowned Justice Bakshi Tek Chand (retired Judge of Lahore High Court), was constituted in 1949 to review the advantages of the patent system. The committee submitted a plethora of recommendations, including:

1. Misuse of patents rights needs to be prevented.
2. There must be a clear indication in the Act that food, medicine and surgical and curative devices should be made available to the masses at the cheapest rate by giving reasonable compensation to the owner of the patent.
3. Amendments in Sections 22, 23 and 23A of the Patent and Design Act, 1911 on the lines of the UK Patent Act.



### **3.5.1 Copyrights and Related Rights**

The concept of copyrights started way back in the 15th century. However, the actual need for copyrights law was felt only after the invention of printers and copiers. Before the invention of printers, writing could be created only once. It was highly laborious, and the risk of errors was involved in the manual process of copying by a scribe. During the 15th and 16th centuries, printing was invented and widely established in Europe. Copies of Bibles were the first to be printed. The government had allowed the printing of the documents without any restrictions, but this led to the spreading of a lot of governmental information. Subsequently, the government started issuing licenses for printing.

### **3.5.2 Trademarks**

The first statutory law related to Trademarks (TM) in India was the Trademarks Act, 1940, which was carved out from the Trademarks Act, 1938 of the UK. It was followed by the incorporation of provisions of TM stated in the Indian Penal Code, Criminal Procedure Code and the Sea Customs Act. Later on, Trademarks Act, 1940 was rechristened as Trade and Merchandise Marks Act 1958. Nearly four decades later, this Act was repealed by the Trademarks Act, 1999. The need for this occurred to comply with the provisions of the TRIPS. It is the current governing law related to registered TM.

### **3.6 Major Amendments in IP Laws and Acts in India**

In order to fill the gaps existing in the IP Laws and Acts and also to introduce new guidelines/directions based on the current scenario (socially and politically), each nation keeps on updating the concerned IP Laws and Acts. Some of the salient amendments made in Indian Laws and Acts on IPR are mentioned below:

Table 1.1: History of Laws and Acts pertaining to intellectual property in India

S.No.	Year	Historical Proceedings
<b>Patents</b>		
1.	1856	The Act VI of 1856 on the protection of inventions based on the British Patent Law of 1852.
2.	1859	<ul style="list-style-type: none"> <li>➤ Rights renamed as 'Exclusive Privileges'.</li> <li>➤ Time for the priority increased from 6 months to 12 months.</li> </ul>
3.	1883	<ul style="list-style-type: none"> <li>➤ The Patterns and Designs Protection Act</li> <li>➤ Introduction of novelty in the invention.</li> <li>➤ A grace period of 6 months for the disclosure of the invention.</li> </ul>
4.	1911	➤ Renamed as 'The Indian Patent and Design Act' and brought under the management of 'Controller of Patents'.
5.	1930	<ul style="list-style-type: none"> <li>➤ Introduction of Patent of Addition.</li> <li>➤ Government can use the invention if required.</li> <li>➤ The term of patent protection increased from 14 to 16 years.</li> </ul>
6.	1945	<ul style="list-style-type: none"> <li>➤ Filing of the provisional specification to secure the priority date.</li> <li>➤ Provision of submitting complete specifications within 9 months.</li> </ul>
7.	1949	Dedicated Committee formed under the leadership of Justice Bakshi Tek Chand for reviewing patent system as per the national environment.
8.	1950	<ul style="list-style-type: none"> <li>➤ A working statement needs to be submitted at the Patent Office.</li> <li>➤ Endorsement of the Patents with the words 'License of Right' on the application made by the government so that the Controller could grant the license.</li> </ul>
9.	1952	<ul style="list-style-type: none"> <li>➤ Provision of 'Compulsory License' in the areas of food, medicine and insecticide germicide.</li> <li>➤ Process for producing substance or any invention relating to surgical or curative devices.</li> </ul>
10.	1965	After incorporation of the recommendation submitted by the committee formed in 1949, a new bill was introduced in Lok Sabha but was not cleared.

11.	1967	<ul style="list-style-type: none"> <li>➤ Again submitted to Parliamentary Committee.</li> <li>➤ 1911 Act remained applicable for Designs.</li> </ul>
12.	1970	➤ The Patent Act, 1970 passed by the Parliament Committee.
13.	1972	The Patent Act, 1970 came into force with the introduction of patent rules.
14.	1995	TRIPS Agreement was signed by India and got transition period 1995-2005 to make domestic laws compatible with TRIPS.
15.	1999	<ul style="list-style-type: none"> <li>➤ Introducing the provisions for receiving the applications for the product patent in the field of pharmaceuticals and agro-chemicals (mail box)*.</li> <li>➤ Provisions for the grant of EMRs for distribution and sale of pharma products on fulfilment of certain conditions.</li> <li>➤ Grant of EMR subject to certain conditions.</li> </ul> <p><i>* after the amendments (1999) the product</i></p>

Source: <http://www.ipindia.nic.in/history-of-indian-patent-system.htm>