



# School of Civil Engineering

## **Smart Cities and IP: Protecting Sustainable Innovations**

### Session Report

Date of Event: 07.04.2025

Venue: SMVB 108

Academic Year: 2024-25

School of Civil Engineering  
REVA University,  
Rukmini Knowledge Park,  
Kattigenahalli, Yelahanka,  
Bengaluru-560064

**REVA University Vision:** REVA University aspires to become an innovative university by developing excellent human resources with leadership qualities, ethical and moral values, research culture and innovative skills through higher education of global standards.

**REVA University Mission:**

- To create excellent infrastructure facilities and state-of-the-art laboratories and incubation centers
- To provide student-centric learning environment through innovative pedagogy and education reforms
- To encourage research and entrepreneurship through collaborations and extension activities
- To promote industry-institute partnerships and share knowledge for innovation and development
- To organize society development programs for knowledge enhancement in thrust areas
- To enhance leadership qualities among the youth and enrich personality traits, promote patriotism and moral values

**School of Civil Engineering**

**Vision:** To produce young engineers of Caliber, who would be committed to their profession with ethics, will be able to contribute to Civil Engineering and allied fields in optimizing usage of resources globally making the world more eco-friendly to live in.

**Mission:**

- To make the school a centre of excellence for training the undergraduate students.
- To promote involvement of staff and students in research and advanced training.
- To develop good understanding skills in student communities about Civil Engineering, ethical practices, automation design and society need centric teaching and learning and imparting value addition skills.

## Contents

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## **Section:1**

### **Mapping of event to COs &POs of the course**

#### **Course Outcomes (COs):**

By the end of this course/session, the participant can able to

1. Understand the fundamentals of Intellectual Property (IP) in the context of smart city development.
2. Identify various types of IP applicable to smart city innovations and sustainable technologies.
3. Analyze real-world examples of IP protection in smart infrastructure, urban mobility, and green buildings.
4. Examine the legal and regulatory frameworks for safeguarding IP in sustainable urban solutions.
5. Evaluate the role of IP rights in encouraging innovation, collaboration, and entrepreneurship in smart cities.
6. Develop awareness of ethical, legal, and strategic aspects of IP management in sustainable urban development.

#### **Program Outcomes (POs)**

After successful completion of the programme, the participant shall be able to

1. PO1. Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialisation for the solution of complex engineering problems.
2. PO2. Problem analysis: Identify, formulate, research literature, and analyse complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
3. 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 public health and safety, and cultural, societal, and environmental considerations.
4. 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.

5. PO5. Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.
6. 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.
7. 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.
8. PO8. Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
9. PO9. Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
10. PO10. Communication: Communicate effectively on complex engineering activities with the engineering community and with the 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.
11. PO11. Project management and finance: Demonstrate knowledge and understanding of the engineering and 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.
12. Life-long learning: Recognise the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

### CO-PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2				2	2			2		
CO2	3		2							2		
CO3			3				2		2	2		
CO4			2			3		3		2		2
CO5	3	2	3			2		3	2	3	2	3
CO6		2	2			2		3	2	3	2	3

1 – Low Alignment, 2 – Medium Alignment, 3 – High Alignment

## Section:2

### Permission letter

06/03/2025

To

The Director  
School of Civil Engineering  
REVA University

From

Dr. Yeddula Bharath Simha Reddy  
Assistant Professor  
School of Civil Engineering  
REVA University

Subject: Request for Permission to Organize IPR Session – "Smart Cities and IP: Protecting Sustainable Innovations"

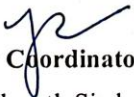
Respected Madam,

The School of Civil Engineering, REVA University, seeks your approval to organize an IPR session titled "Smart Cities and IP: Protecting Sustainable Innovations" on 08<sup>th</sup> April 2025.

This session explores the intersection of Smart Cities and Intellectual Property, highlighting the importance of protecting sustainable innovations. It will provide insights into patents, copyrights, and trademarks in smart infrastructure, ensuring the security of technological advancements in urban development.

We kindly request your permission to proceed with the organization of this seminar. Looking forward to your approval.

Sincerely,

  
**Faculty Coordinator**  
Dr. Yeddula Bharath Simha Reddy  
Assistant Professor  
School of Civil Engineering  
REVA University

  
**Director**  
Dr. Bhavana B  
Associate Professor and Director  
School of Civil Engineering  
REVA University

## Section:3

### Circular

RU/CV/IPR/2025/03

Date: 06.03.2025

Subject: Invitation to attend IPR session – "Smart Cities and IP: Protecting Sustainable Innovations"

Dear Faculty and Students,

The School of Civil Engineering, REVA University, is pleased to invite you to an IPR session on "Smart Cities and IP: Protecting Sustainable Innovations" scheduled for 08<sup>th</sup> April 2025.

This session explores the intersection of Smart Cities and Intellectual Property, highlighting the importance of protecting sustainable innovations. It will provide insights into patents, copyrights, and trademarks in smart infrastructure, ensuring the security of technological advancements in urban development.

We encourage all faculty and students to participate and make the most of this opportunity to enhance their knowledge and engage in meaningful discussions.

Looking forward to your enthusiastic participation.

  
**Faculty Coordinator**

Dr. Yeddula Bharath Simha Reddy  
Assistant Professor  
School of Civil Engineering  
REVA University

  
**Director**

Dr. Bhavana B  
Associate Professor and Director  
School of Civil Engineering  
REVA University

## Section:4

### E-Banner



The banner features a futuristic cityscape with tall skyscrapers and greenery, set against a blue sky with a large rainbow arching over the city. The city is situated on a floating island with a body of water below it. The background is a light blue gradient.

**NAAC GRADE A+** **4 QUALITY EDUCATION** 

**School of Civil Engineering**

Student Welfare Club  
in collaboration with UIIC  
Organises an IPR Session on

**Smart Cities and IP:  
Protecting Sustainable Innovations**

**Resource Person**

**Mr. Burri Ankaiah**  
Asst professor/Head IPR/Innovation Ambassador/  
IEEE-PES Student Chapter Ambassador, REVA University

**Date:** April 07, 2025 | **Time:** 01:20 PM - 02:20 PM  
**Venue:** Sir M.V Block -108

**Faculty Co-ordinator**  
**Dr. Yeddula Bharath Simha Reddy**  
Assistant Professor  
School of Civil Engineering, REVA University



## **Section:5**

### **Brief points about event**

#### **Session Overview:**

The School of Civil Engineering, REVA University, in collaboration with the Student Welfare Club and UIIC, is organizing a session titled " Smart Cities and IP: Protecting Sustainable Innovations " on April 07, 2025, from 01:20 PM to 02:20 PM at Sir M.V Block - 108. A total of 23 students and faculty attended the event.

#### **Keynote Speaker:**

Mr. Burri Ankaiah

Assistant Professor / Head of IPR / Innovation Ambassador

IEEE-PES Student Chapter Ambassador, REVA University

Mr. Ankaiah brings extensive expertise in Intellectual Property Rights (IPR) and its application in engineering and academia. As a recognized expert in copyright laws, he provided valuable insights into protecting engineering innovations, legal compliance, and industry best practices.

#### **Session Highlights:**

- Introduction to IPR and its role in smart infrastructure development
- Real-life examples of IPR application in urban design and engineering
- How to file patents and copyrights for engineering innovations
- IP strategies for startups and sustainability-based solutions
- Interactive Q&A session addressing student doubts and case-based discussions

#### **Evaluating Criteria:**

- A test will be conducted at the end of the session to measure participant's understanding and learning outcomes.
- Participants will be evaluated based on their knowledge retention, application of IPR concepts, and case study analysis.

#### **Impact and Future Implications:**

The session enhanced students' knowledge of IPR, with majority acknowledging increased awareness of copyright and patent processes. More than 70% expressed interest in applying IPR knowledge to their ongoing academic projects and potential startups. The session

positioned students to better align their innovations with legal protection mechanisms, a critical skill for future-ready engineers contributing to sustainable urban growth. It also opened avenues for incorporating IPR modules into elective courses and final-year projects.

## Section:6

### Geo-tagged photos



## Section:7

# Learning Outcome Assessment Form



### School of Civil Engineering

IPR Session  
on  
Smart Cities and IP: Protecting Sustainable Innovations  
07.04.2025  
**LEARNING OUTCOME ASSESSMENT FORM**

\* Required

\* This form will record your name, please fill your name.

**1. Which of the following best defines a smart city?**

\* (1 Point)

- ☐ A city with high population density
- ☐ A city that uses digital technology to improve infrastructure and services
- ☐ A city with modern buildings
- ☐ A city with a strong economy

**2. What is the primary goal of sustainable innovations in smart cities?**

\* (1 Point)

- ☐ Reducing operational costs only
- ☐ Increasing industrialization
- ☐ Enhancing quality of life while minimizing environmental impact
- ☐ Promoting luxury real estate development

**3. Which technology is widely used in smart cities for managing traffic and reducing congestion? \*** (1 Point)

- ☐ Artificial Intelligence (AI)
- ☐ Blockchain
- ☐ Augmented Reality
- ☐ Genetic Engineering

4. Which of the following is a key component of smart city infrastructure? \* (1 Point)

- ☐ Smart grids
- ☐ Fossil fuel-based power plants
- ☐ Traditional water supply systems
- ☐ Paper-based governance

5. Which of these sectors benefits the most from smart city innovations? \* (1 Point)

- ☐ Education
- ☐ Transportation
- ☐ Healthcare
- ☐ All of the above

6. Which form of intellectual property is most suitable for protecting innovative software used in smart cities? \* (1 Point)

- ☐ Trademark
- ☐ Copyright
- ☐ Patent
- ☐ Trade secret

7. Which IP protection method is used to safeguard new technologies for renewable energy in smart cities? \* (1 Point)

- ☐ Copyright
- ☐ Trademark
- ☐ Patent
- ☐ Geographical Indication (GI)

8. If a company develops a unique smart waste management system, what type of IP protection should it seek? \* (1 Point)

- ☐ Patent
- ☐ Copyright
- ☐ Trade secret
- ☐ Industrial Design

9. What is the minimum duration of copyright protection for software used in smart city infrastructure in India? \* (1 Point)

- ☐ 10 years
- ☐ 30 years
- ☐ Lifetime of the creator + 60 years
- ☐ No copyright protection for software

10. What is the role of open-source licensing in smart city innovation? \* (1 Point)

- ☐ Prevents anyone from using the innovation
- ☐ Allows free access to technology with certain conditions
- ☐ Grants exclusive rights to one company
- ☐ Only applies to trademarks

11. Why is it difficult to protect smart city innovations under traditional IP laws? \* (1 Point)

- ☐ Smart city solutions often involve multiple stakeholders and technologies
- ☐ There are no IP laws for digital innovations
- ☐ Smart cities do not require IP protection
- ☐ All IP protection is temporary

12. Which of the following challenges affects patenting sustainable innovations in smart cities? \* (1 Point)

- ☐ High cost of patent filing
- ☐ Difficulty in proving novelty
- ☐ Long processing time
- ☐ All of the above

13. What is a potential risk of not protecting IP rights in smart city technologies? \* (1 Point)

- ☐ Increased collaboration between companies
- ☐ Unauthorized copying and loss of investment
- ☐ Faster innovation
- ☐ No impact on businesses

14. Which organization is responsible for global IP protection, including smart city innovations? \* (1 Point)

- ☐ United Nations (UN)
- ☐ World Trade Organization (WTO)
- ☐ World Intellectual Property Organization (WIPO)
- ☐ International Monetary Fund (IMF)

15. Which strategy helps balance innovation and IP protection in smart cities? \* (1 Point)

- ☐ Strict patent laws with no sharing
- ☐ Collaboration through patent pools and licensing agreements
- ☐ Allowing only large corporations to innovate
- ☐ Restricting public access to smart city technologies

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 Microsoft Forms

## Section:8

### Rubrics for evaluation of outcome

The evaluation is being done for 15 marks. Each question carries 01 mark. The Evaluation Rubrics is as follows.

Score Range	Performance Level	Description
13 - 15	Excellent	Demonstrates a strong understanding of smart city concepts, intellectual property rights (IPR), global frameworks like WIPO, and ethical considerations. Accurately applies IP principles to urban innovation and sustainability scenarios.
10 - 12	Good	Shows a good grasp of smart city-IPR integration but lacks depth in certain areas like international collaboration strategies or policy implications.
7 - 9	Satisfactory	Displays basic knowledge of smart cities and IPR but struggles to connect these concepts to real-world applications or innovation protection.
4 - 6	Needs Improvement	Has limited understanding of IP concepts in the context of smart cities and fails to identify key risks and protective measures for sustainable innovations.
0 - 3	Poor	Shows little to no understanding of smart city frameworks, IP protection strategies, or global IPR mechanisms. Requires further exposure to the topic.



## Section:9

### Learning Outcome Assessment

The learning outcome assessment showed that the average score was approximately 13.33, indicating a strong overall performance. The lowest score recorded was 9, and the majority of students scored either 13 or 14, showing good comprehension of the subject. The standard deviation was 1.44, which suggests relatively low variation in the marks. Overall, the session effectively enhanced awareness of copyright laws, but future sessions should include more case studies and real-world applications for better knowledge retention.

#### 1. Which of the following best defines a smart city?

(1 point)

[More details](#)

92% of respondents answered this question correctly.

- |                                                                              |      |
|------------------------------------------------------------------------------|------|
| ● A city with high population density                                        | 0    |
| ● A city that uses digital technology to improve infrastructure and services | 11 ✓ |
| ● A city with modern buildings                                               | 0    |
| ● A city with a strong economy                                               | 1    |



#### 2. What is the primary goal of sustainable innovations in smart cities?

(1 point)

[More details](#)

100% of respondents answered this question correctly.

- |                                                                   |      |
|-------------------------------------------------------------------|------|
| ● Reducing operational costs only                                 | 0    |
| ● Increasing industrialization                                    | 0    |
| ● Enhancing quality of life while minimizing environmental impact | 12 ✓ |
| ● Promoting luxury real estate development                        | 0    |



3. Which technology is widely used in smart cities for managing traffic and reducing congestion? (1 point)

[More details](#)

100% of respondents answered this question correctly.

- Artificial Intelligence (AI) 12 ✓
- Blockchain 0
- Augmented Reality 0
- Genetic Engineering 0



4. Which of the following is a key component of smart city infrastructure? (1 point)

[More details](#)

100% of respondents answered this question correctly.

- Smart grids 12 ✓
- Fossil fuel-based power plants 0
- Traditional water supply systems 0
- Paper-based governance 0



5. Which of these sectors benefits the most from smart city innovations? (1 point)

[More details](#)

92% of respondents answered this question correctly.

- Education 0
- Transportation 0
- Healthcare 1
- All of the above 11 ✓

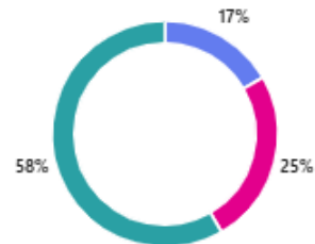


6. Which form of intellectual property is most suitable for protecting innovative software used in smart cities? (1 point)

[More details](#)

0% of respondents answered this question correctly.

Trademark	2
Copyright	3
Patent	7
Trade secret	0 ✓



7. Which IP protection method is used to safeguard new technologies for renewable energy in smart cities? (1 point)

[More details](#)

100% of respondents answered this question correctly.

Copyright	0
Trademark	0
Patent	12 ✓
Geographical Indication (GI)	0

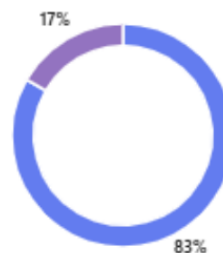


8. If a company develops a unique smart waste management system, what type of IP protection should it seek? (1 point)

[More details](#)

83% of respondents answered this question correctly.

Patent	10 ✓
Copyright	0
Trade secret	0
Industrial Design	2



9. What is the minimum duration of copyright protection for software used in smart city infrastructure in India? (1 point) [More details](#)

92% of respondents answered this question correctly.

- 10 years 1
- 30 years 0
- Lifetime of the creator + 60 years 11 ✓
- No copyright protection for software 0



10. What is the role of open-source licensing in smart city innovation? (1 point) [More details](#)

92% of respondents answered this question correctly.

- Prevents anyone from using the innovation 1
- Allows free access to technology with certain conditions 11 ✓
- Grants exclusive rights to one company 0
- Only applies to trademarks 0



11. Why is it difficult to protect smart city innovations under traditional IP laws? (1 point) [More details](#)

92% of respondents answered this question correctly.

- Smart city solutions often involve multiple stakeholders and technologies 11 ✓
- There are no IP laws for digital innovations 1
- Smart cities do not require IP protection 0
- All IP protection is temporary 0



12. Which of the following challenges affects patenting sustainable innovations in smart cities? (1 point)

[More details](#)

92% of respondents answered this question correctly.

- High cost of patent filing 0
- Difficulty in proving novelty 1
- Long processing time 0
- All of the above 11 ✓



13. What is a potential risk of not protecting IP rights in smart city technologies? (1 point)

[More details](#)

100% of respondents answered this question correctly.

- Increased collaboration between companies 0
- Unauthorized copying and loss of investment 12 ✓
- Faster innovation 0
- No impact on businesses 0



14. Which organization is responsible for global IP protection, including smart city innovations? (1 point)

[More details](#)

100% of respondents answered this question correctly.

- United Nations (UN) 0
- World Trade Organization (WTO) 0
- World Intellectual Property Organization (WIPO) 12 ✓
- International Monetary Fund (IMF) 0



15. Which strategy helps balance innovation and IP protection in smart cities? (1 point)

[More details](#)

100% of respondents answered this question correctly.

- Strict patent laws with no sharing 0
- Collaboration through patent pools and licensing agreements 12 ✓
- Allowing only large corporations to innovate 0
- Restricting public access to smart city technologies 0



S. No.	Student SRN / Faculty ID	Participant Name	Marks (15M)
1	R23ED052	V GURUNAGARAJ	14
2	R23ED053	VIBHOR KUMAR	14
3	R23ED072	MOHAMMAD SHAHID	13
4	R23ED078	PUNITH R	9
5	R23ED080	RUPESH GUPTA	14
6	R23ED081	S INDRA TEJA	13
7	R23ED092	SARFRAJ RAJESAB BALIGAR	14
8	R23ED118	YASSER ABAKER YAKOOP ADAM	14
9	R24ED802	AKSHAY N	14
10	R24ED803	KALITO K CHOPHY	13
11	R24ED806	RAVI SRINITHISH	14
12	R24ED808	SACHIN	14

## **Section:10**

### **Outcome of event**

The School of Civil Engineering, in association with the Student Welfare Club and UIIC, organized an insightful session on “Smart Cities and IP: Protecting Sustainable Innovations” on April 7, 2025. The session aimed to educate students about the importance of intellectual property rights (IPR) in the context of sustainable technologies and innovations within smart cities. Mr. Burri Ankaiah, serving as the resource person, shared his expertise as an IPR Head, Innovation Ambassador, and IEEE-PES Student Chapter Ambassador. His engaging presentation covered critical aspects such as the role of global IP organizations, patenting challenges, and collaborative strategies like patent pools.

The session saw active student participation, and a quiz was conducted post-session to evaluate their understanding of the concepts discussed. The performance indicated that the session was well-received and the concepts were effectively communicated. The questions assessed key ideas such as unauthorized copying risks, the importance of licensing, and the role of the World Intellectual Property Organization (WIPO) in protecting IP globally.

Overall, the session was a great success, enriching students’ knowledge on the intersection of urban innovation and IP protection. It emphasized the value of safeguarding innovations in an increasingly digital and sustainable urban future. The initiative also encouraged students to be more conscious of legal and ethical dimensions in their future engineering endeavours.

## Section:11

### Participants list



School of Civil Engineering

IPR Session on

"Smart Cities and IP: Protecting Sustainable Innovations"

07.04.2025

#### Attendance Sheet

S. No.	Student/Faculty ID	Student/Faculty Name	Signature
01.	R23ED078	Puneeth.R	
02.	R24ED805	Kalish K. Choppy	
03	R24ED811	VILABEINUD CHADI	
4	R23ED080	Rupesh Gupta.	
5	R23ED053	Vibhor Kumar	
6	R23ED057	Ashish Yummam	
7	R23ED083	Sujay Sinha.	
8	R23ED061	David Mochan	
9	R23ED064	KHYODA DANIEL	
10	R24ED809	Sunny Raj.B	
11.	R24ED802	Akshay	
12	R23ED063	TIONGA JUNIOR	
13	R24ED808	Lochin	
14	R24ED806	K.SRINITHISH	
15	R23ED081	Indra Teja	
16	R23ED072	mohammad Shahid	
17	R23ED055	Agony Abraham	
18	R23ED118	Yasser Abaker	
19.	R23ED092	Karraj B.	
20.	R23ED091	Pavon. C.	
21.	R23ED077	puneeth. S	



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**Faculty Coordinator** *7/4/25*

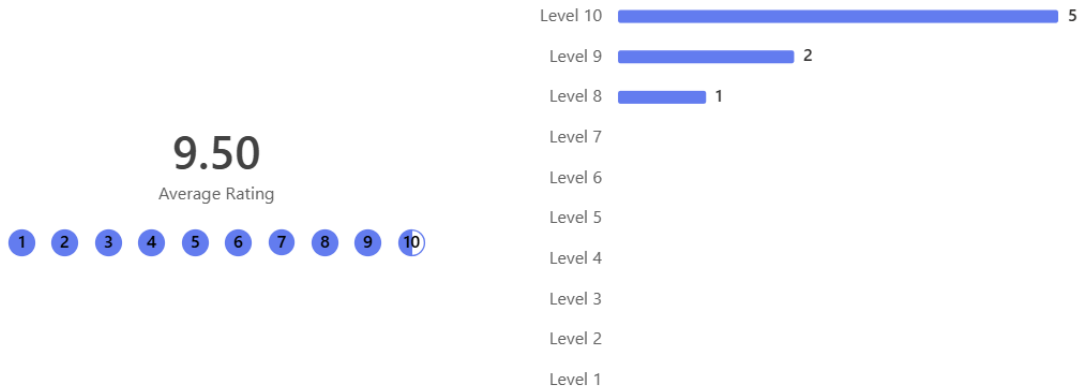
**Director** 8/4/25

## Section:12

### Feedback

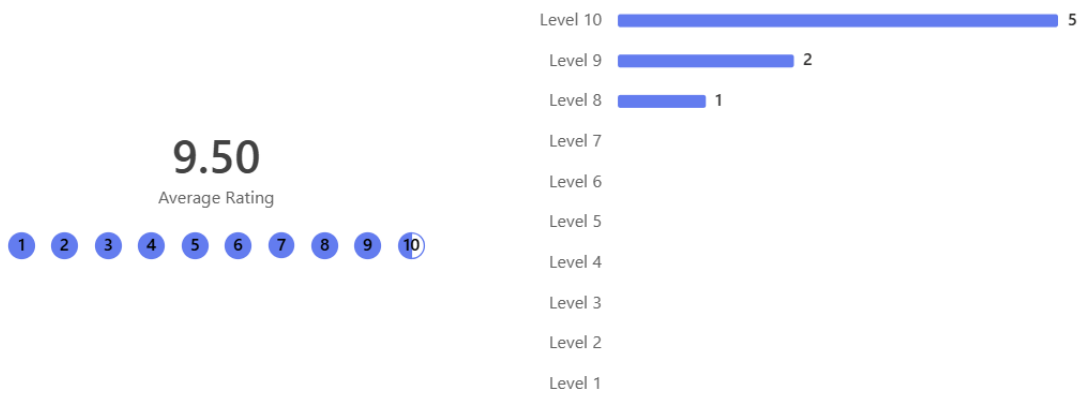
6. The Trainer is Knowledgeable

[More details](#)



7. Adequate time is provided for questions & discussion, and clearing doubts

[More details](#)



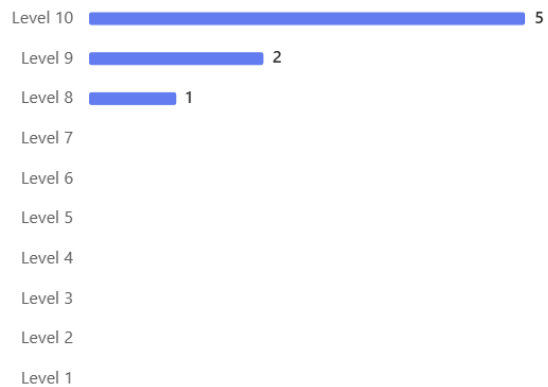
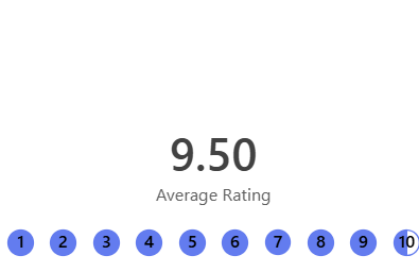
8. The topics mentioned in the session outline are taught in the class

[More details](#)



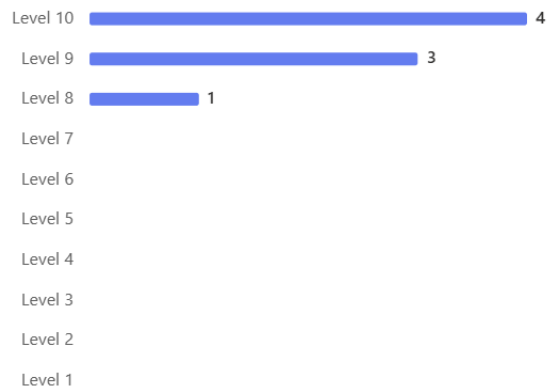
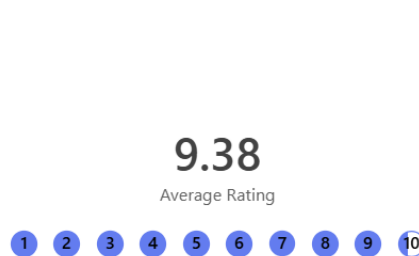
9. Is session conducted on time

[More details](#)



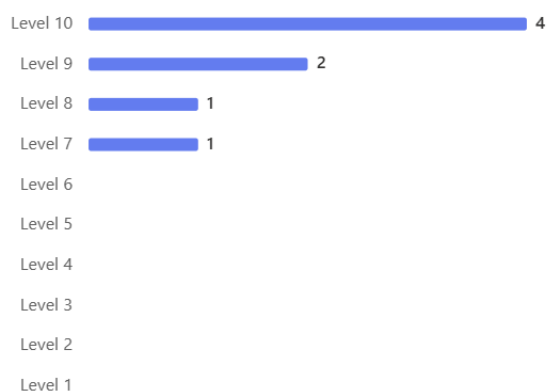
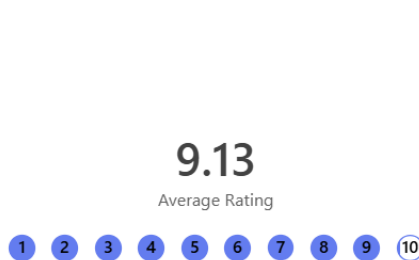
10. The information you were given about what you could expect from the session

[More details](#)



11. The level and demands of the course

[More details](#)



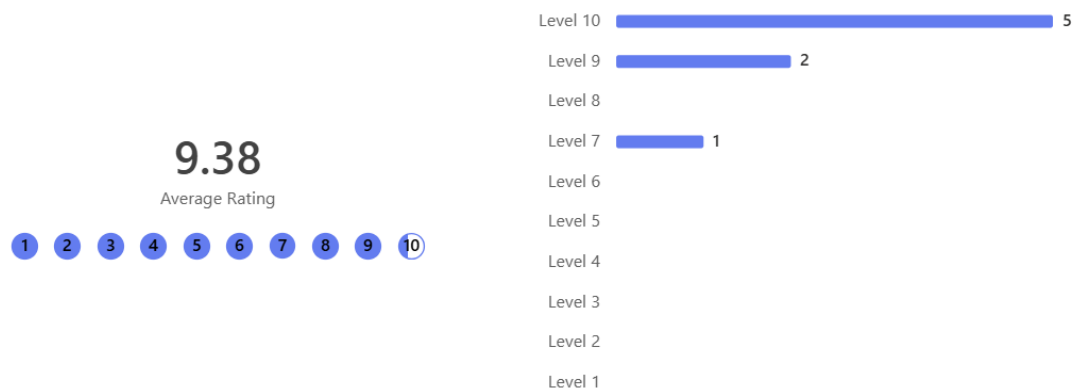
12. The quality of the teaching/training provided

[More details](#)



13. The quality of the materials used to deliver the course (books, handouts, equipment etc.)

[More details](#)



14. The overall quality of the program

[More details](#)



15. Please use this space for any comments you would like to make about the course.

[More details](#)

**3**  
Responses

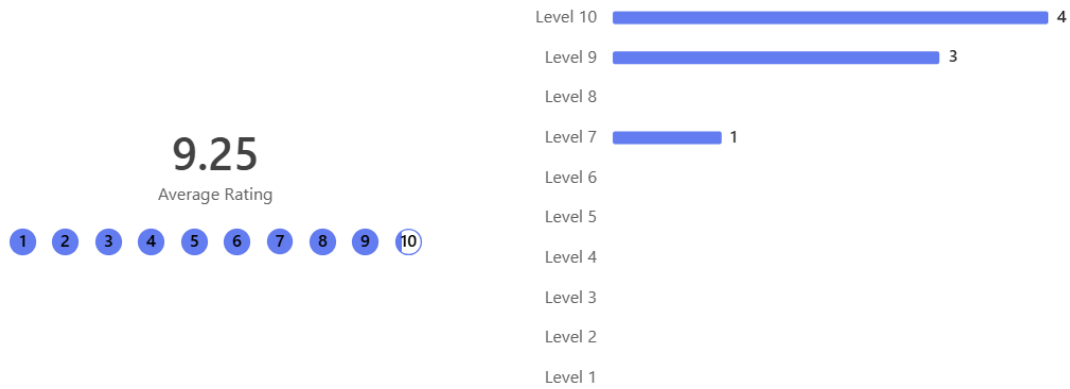
Latest Responses

"Sir was very knowledgeable and helpful"

...

16. The number that reflects most closely how satisfied you were with the course overall

[More details](#)



**Section:13****Feedback analysis**

The IPR Session on " Smart Cities and IP: Protecting Sustainable Innovations" was conducted on April 07, 2025. On average, participants rated the session above 9 out of 10 across most parameters. Notably, the session timing, opportunity for interaction, and clarity of expectations all received 9.5, indicating excellent organization and delivery. These ratings suggest that the students felt engaged and had ample opportunity to clear doubts and participate actively.

In terms of content and delivery, the ratings for teaching quality, course demands, and relevance of materials ranged between 9.1 to 9.3. This shows that the session was not only well-delivered but also met the intellectual expectations of the audience.

The overall quality and satisfaction with the session were both rated at 9.25, reinforcing the success of the event in terms of both impact and content value. Participants also appreciated the speaker's expertise, as seen in individual comments like "The trainer is well experienced" and "Good knowledge". The feedback confirms that the program effectively introduced students to the intersection of smart city planning and intellectual property, encouraging further curiosity and learning in this critical area.

  
Faculty Coordinator  
IQAC VH  
Director

## Section:14

### Sample certificates

