School of Planning and Architecture: Vijayawada

(An institution of National Importance under the Ministry of Human Resource Development, Govt. of India)
Survey No.4/4, ITI Road, Vijayawada-520008, Andhra Pradesh, India

Department of Architecture

Course: **MSAR2211 - Post Occupancy Evaluation and Energy Audit of Buildings** **Class:** II Yr MSA III Sem A.Y. 2026-27
Instructors: Dr. Faiz Ahmed C **Internal Assessment:** 50
End JURY: 50
Contact Periods/ Week: 03 periods (1L+2T) **Total Marks:** 100
Time Table: MONDAY 9.00 - 11.45 AM **Credits:** 3
Attendance: Min 75% **Min. Passing Marks:** 50% each in Internal & External Assessment, 50% in Aggregate

Objective: To impart the post-occupancy evaluation and Energy Audit tools and techniques prevalent in the field. **Outcome:** Students shall learn the required post-occupancy and energy audit procedures and protocols for assessing the buildings for their performance and suggesting appropriate retrofit measures.

LECTURE PLAN

WEEK	TOPIC OF CLASS LECTURE & DISCUSSION	TOPIC OF STUDIO WORK& ASSIGNMENTS / REMARKS
20-07-2026	Introdcutory Lecture and Discussion on overall contents	Lecture/Discussion
27-07-2026	**Unit-I :** Understanding of the conceptual frameworks underlying different types of post-occupancy. Evaluation. POE objectives and needs. The generic attributes such as to identify and formulate the problems and to envisage, enact processes in response to them. Assessing existing buildings on their energy use, environmental impact and occupant satisfaction. Building performance benchmarks – rating and comparison of buildings.	Lecture/Discussion
03-08-2026	**Unit-I :** Understanding of the conceptual frameworks underlying different types of post-occupancy. Evaluation. POE objectives and needs. The generic attributes such as to identify and formulate the problems and to envisage, enact processes in response to them. Assessing existing buildings on their energy use, environmental impact and occupant satisfaction. Building performance benchmarks – rating and comparison of buildings.	Lecture/Discussion
10-08-2026	**Unit-II:** Techniques, methods & procedures of Post Occupancy Evaluation. It also covers the user satisfaction survey identifying areas of deficiency, particularly in maintenance, and facilitates the assessment of the overall performance of the building.	Lecture/Discussion
17-08-2026	**Unit-II:** Techniques, methods & procedures of Post Occupancy Evaluation. It also covers the user satisfaction survey identifying areas of deficiency, particularly in maintenance, and facilitates the assessment of the overall performance of the building.	GUEST LECTURE 1
24-08-2026	**Assignment - Group Work**	**Students Presentation**
31-08-2026	**Unit-III:** General Aspects of Energy Management & Energy Audit. Energy Efficiency in Thermal Utilities and Energy Efficiency in Electrical Utilities, Energy Performance Assessment for building envelope, fenestration and embodied energy, it also emphasises Equipment and Utility systems.	Lecture/Discussion
07-09-2026	**Unit-III:** General Aspects of Energy Management & Energy Audit. Energy Efficiency in Thermal Utilities and Energy Efficiency in Electrical Utilities, Energy Performance Assessment for building envelope, fenestration and embodied energy, it also emphasises Equipment and Utility systems.	Lecture/Discussion
14-09-2026	Unit-IV: Detailed energy audit, quantify energy consumption and establish baseline energy information, Construct energy and material balance, · Perform efficiency evaluation of energy & utility systems, compare energy norms with existing energy consumption levels, · Identify and prioritization energy saving measures and analysis of technical and financial feasibility of energy saving measures, study of energy efficient technologies and alternate energy sources.	Lecture/Discussion
21-09-2026	MID EXAM 19 - 23 October 2026	**Students Presentation**

28-09-2026	**Unit-IV:** Detailed energy audit, quantify energy consumption and establish baseline energy information, Construct energy and material balance, · Perform efficiency evaluation of energy & utility systems, compare energy norms with existing energy consumption levels, · Identify and prioritization energy saving measures and analysis of technical and financial feasibility of energy saving measures, study of energy efficient technologies and alternate energy sources.	GUEST LECTURE 2
05-10-2026	**Unit-V** Appropriate Case Studies: Students are required to carry out post-occupancy evaluation of a building document the relationship between building design, energy use, occupant satisfaction, and environmental impact and report their observations.	Students Presentation
12-10-2026	**Assignment - Group Work**	Students Presentation
19-10-2026	**Assignment - Group Work**	Students Presentation
26-10-2026	**Assignment - Group Work**	Students Presentation
02-11-2026	**Assignment - Group Work**	Students Presentation
09-11-2026	**Assignment - Group Work**	Students Presentation
11-11-2026	End of Classwork - 11-11-2026	

S. No.	Stages of Evaluation	Weightage
1	First stage: Students Presentation	15
2	Second stage: Mid-semester Examination - Group Work	20
3	Third stage: Assessment –3 Students Presentation	15
	Total	**50**

Suggested Readings:

1.Moncef Krarti (2011). ENERGY AUDIT OF BUILDING SYSTEMS AN ENGINEERING APPROACH. CRC Press. Florence. Taylor & Francis Group.
2.Li P, Froese TM, Brager G, Post-occupancy evaluation: State-of-theart analysis and state-of-the-practice review, Building and Environment (2018), doi: 10.1016/j.buildenv.2018.02.024.
3.Alejandro Vásquez-Hernández and Mario Fernando Restrepo Álvarez, Evaluation of buildings in real conditions of use: Current situation, Journal of Building Engineering, http://dx.doi.org/10.1016/j.jobe.2017.04.019.
4.Ye, C.; Yao, L.; Meng, Y.; Zhang, Y.; He, G. Post-Occupancy Evaluation of Green Technologies for a High-Rise Building Based on User Experience. Sustainability 2022, 14, 9538. https://doi.org/10.3390/su14159538

KEY READING MATERIAL: 1. Boarin, P., Besen, P., & Haarhoff, E. (2018). Post-occupancy evaluation of neighbourhoods: A review of the literature (Working Paper 18-01). Building Better Homes, Towns and Cities National Science Challenge. https://www.buildingbetter.nz
2. Federal Facilities Council. (2001). Learning from our buildings: A state-of-the-practice summary of post-occupancy evaluation (Technical Report No. 145). National Academy Press.

3. Latimer, K., & Sommer, D. (Eds.). (2015). Post-occupancy evaluation of library buildings. De Gruyter Saur.

4. Li, P., Froese, T. M., & Brager, G. (2018). Post-occupancy evaluation: State-of-the-art analysis and state-of-the-practice review. Building and Environment, 133, 187–202. https://doi.org/10.1016/j.buildenv.2018.02.024

5. Li, Y., & He, B.-J. (2025). Biophilic street design for urban heat resilience. Progress in Planning, 199, 100988. https://doi.org/10.1016/j.progress.2025.100988

6. Royal Institute of British Architects. (2020). Post occupancy evaluation: An essential tool to improve the built environment. RIBA.

7. Vásquez-Hernández, A., & Restrepo Álvarez, M. F. (2017). Evaluation of buildings in real conditions of use: Current situation. Journal of Building Engineering, 12, 26–36. https://doi.org/10.1016/j.jobe.2017.04.019

Cource Instructors:
sd/-
(Dr. Faiz Ahmed C)

Head of Department :
sd/-
(Dr. Amitava Sarkar)