Private University of Tacna (UPT)
School of Architecture
Syllabus 2027-I

1. COURSE

AR2B2. BIM Execution Planning (Mandatory)

2. GENERAL INFORMATION

2.1 Course	:	AR2B2. BIM Execution Planning
2.2 Semester	:	4th Semester.
2.3 Credits	:	4
2.4 Hours	:	4 HT; 4 HP;
2.5 Duration of the period	:	16 weeks
2.6 Type of course	:	Mandatory
2.7 Learning modality	:	Face to face
2.8 Prerrequisites	:	AR2B1. Multidisciplinary Coordination. (3rd Sem)

3. PROFESSORS

Meetings after coordination with the professor

4. INTRODUCTION TO THE COURSE

BIM Execution Planning is the fourth course of the ten-course BIM I-X sequence (AR1B1 to AR4B1), following Multidisciplinary Coordination (AR2B1, prerequisite). Having learned to author, document, organize, coordinate, and collaborate on a shared BIM model in the first three courses, students now step back to the project-management layer that governs how BIM itself is planned, mandated, and contracted: drafting a BIM Execution Plan (BEP) and information-delivery requirements under ISO 19650, identifying the national and jurisdictional BIM mandates and contractual provisions (model authorship, liability, intellectual property) that apply to a given project, and matching a project's delivery method – Design-Bid-Build, Design-Build, Construction Management at Risk, or Integrated Project Delivery – to the BIM maturity level it actually requires. The course's transversal Practicum unit continues the hands-on software-lab component that recurs, unchanged in structure, across all ten courses of the sequence.

5. GOALS

- Draft a BIM Execution Plan (BEP) for a project, specifying BIM goals, LOD matrix, and information-delivery milestones aligned with the ISO 19650 framework.
- Identify the BIM mandate or policy applicable to a given project's jurisdiction, and draft contractual provisions addressing model authorship, liability, and intellectual property for shared model data.
- Recommend a project delivery method (Design-Bid-Build, Design-Build, Construction Management at Risk, or IPD) and a target BIM maturity level appropriate to a given project's scale and ownership structure.
- Build hands-on proficiency in a BIM authoring/collaboration tool through a sequence of guided, graded practicum exercises culminating in a cumulative deliverable.

6. COMPETENCES

AG-A02) Applies ethical principles and the standards of professional architectural practice, respecting the legal framework and human diversity. (Usage)

AG-A05) Applies management principles and economic decision-making, considering risk, as a team member or leader, to manage projects in multidisciplinary environments. (Usage)

AG-A06) Recognizes the need to learn independently and continuously, adapt to new and emerging technologies, and apply critical thinking in the face of technological change. (Usage)

7. TOPICS

Unit 1: BIM Execution Planning and Standards (24 hours)	
Competences Expected: AG-A05	
Topics	**Learning Outcomes**
• BIM Execution Plan (BEP): project goals for BIM use (clash detection, 4D/5D, facility management), LOD matrix by discipline, model sharing protocols • ISO 19650 framework: information management using BIM across the delivery and operational phases of assets, information requirements (EIR, OIR, AIR), and the information-delivery cycle	• Describe the purpose of a BIM Execution Plan and the ISO 19650 information-management framework, and explain how they structure a project's BIM deliverables [Familiarity] • Draft a BIM Execution Plan for a project, specifying BIM goals, LOD matrix, and information-delivery milestones aligned with ISO 19650 [Usage] • Evaluate a BIM Execution Plan for a design project, assessing its LOD specifications, exchange protocols, and BIM use cases for adequacy and clarity [Assessment]
Readings : [Com11]	

Unit 2: BIM Standards, Policy, and Contracts (24 hours)	
Competences Expected: AG-A02	
Topics	**Learning Outcomes**
• National and regional BIM adoption mandates: policy frameworks requiring BIM on public infrastructure projects (e.g. Peru's Plan BIM Perú, UK BIM Mandate, EU BIM Task Group), and their implications for permit submission and interdisciplinary coordination • BIM in contracts and risk allocation: BIM Execution Plans as contract exhibits, model-authorship and liability clauses, and intellectual-property considerations for shared model data	• Describe the major national and international BIM policy frameworks, and explain how BIM Execution Plans and authorship clauses are used to allocate contractual risk [Familiarity] • Identify the BIM mandate or policy applicable to a given project's jurisdiction, and draft a contract clause addressing model authorship and liability [Usage] • Evaluate a project's compliance with applicable BIM mandates and the adequacy of its contractual provisions for model authorship and liability [Assessment]
Readings : [KN14]	

Unit 3: BIM Across Project Delivery Methods (24 hours)	
Competences Expected: AG-A05	
Topics	**Learning Outcomes**
• Project delivery methods and their effect on BIM responsibility: Design-Bid-Build, Design-Build, Construction Management at Risk, and Integrated Project Delivery (IPD) • BIM maturity levels (Level 0-3): from unmanaged CAD to fully collaborative, cloud-based, integrated BIM, and how procurement choice shapes the achievable level • Risk- and reward-sharing models in IPD and alliance contracts, and their relationship to shared BIM model responsibility	• Describe how different project delivery methods assign BIM responsibility differently, and explain the BIM maturity level framework [Familiarity] • Recommend a project delivery method and target BIM maturity level appropriate for a given project's scale and ownership structure [Usage] • Evaluate a project's chosen delivery method for whether it supports the BIM maturity level the project actually requires [Assessment]
Readings : [Fis+17]	

Unit 4: BIM Software Practicum (24 hours)	
Competences Expected: AG-A06	
Topics	**Learning Outcomes**
• Guided, graded software exercises in the BIM tool(s) specific to the course's theme (authoring, coordination, scheduling, analysis, or FM platforms), building toward a cumulative course deliverable • Practice aligned with vendor or industry certification exams (Autodesk Certified Professional, buildingSMART openBIM) relevant to the course's software focus	• Describe the practicum structure for the course's BIM software focus and the deliverable it builds toward [Familiarity] • Complete a sequence of guided exercises in the course's BIM software focus, building toward a cumulative practicum deliverable [Usage] • Evaluate the student's own practicum deliverable against the software proficiency expected for the course's BIM theme [Assessment]
Readings : [Sti23]	

8. WORKPLAN

8.1 Methodology

Individual and team participation is encouraged to present their ideas, motivating them with additional points in the different stages of the course evaluation.

8.2 Theory Sessions

The theory sessions are held in master classes with activities including active learning and roleplay to allow students to internalize the concepts.

8.3 Practical Sessions

The practical sessions are held in class where a series of exercises and/or practical concepts are developed through problem solving, problem solving, specific exercises and/or in application contexts.

9. EVALUATION SYSTEM

********* EVALUATION MISSING ********

10. BASIC BIBLIOGRAPHY

[Com11] Computer Integrated Construction Research Program. *BIM Project Execution Planning Guide*. Version 2.1. Pennsylvania State University, 2011.

[KN14] Karen M. Kensek and Douglas E. Noble, eds. *Building Information Modeling: BIM in Current and Future Practice*. 1st. Wiley, 2014.

[Fis+17] Martin Fischer et al. *Integrating Project Delivery*. 1st. Wiley, 2017.

[Sti23] Daniel John Stine. *Autodesk Revit 2024 for Architecture*. 1st. SDC Publications, 2023.