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

1. COURSE

AR404. Innovation and Entrepreneurship (Mandatory)

2. GENERAL INFORMATION

2.1 Course	:	AR404. Innovation and Entrepreneurship
2.2 Semester	:	10^{th} Semester.
2.3 Credits	:	4
2.4 Hours	:	4 HT;
2.5 Duration of the period	:	16 weeks
2.6 Type of course	:	Mandatory
2.7 Learning modality	:	Face to face
2.8 Prerrequisites	:	None

3. PROFESSORS

Meetings after coordination with the professor

4. INTRODUCTION TO THE COURSE

Innovation and Entrepreneurship closes the specialization alongside Research Work (ARC403), giving students the professional-practice and real-estate-development toolkit – entrepreneurship models, project feasibility, PropTech, and participatory development – needed to turn a territorial or urban diagnosis into a viable, fundable initiative. It draws on Real Estate Development and Construction Economics (RED) and the entrepreneurship-specific unit of Professional Practice and Ethics (PRO), the two Arch2027 knowledge areas that cover the business side of the profession.

5. GOALS

- Identify the professional and business dimension of practicing architecture and urbanism, including entrepreneurship models and firm structures.
- Assess the technical and financial feasibility of a territorial development initiative (market analysis, cost, financing).
- Evaluate digital/PropTech innovations applicable to real-estate and territorial-development processes.
- Design a participatory, stakeholder-engaged process for a territorial or urban innovation initiative.

6. COMPETENCES

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

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. (Assessment)

7. TOPICS

Unit 1: Business of Architecture and Entrepreneurship (16 hours)	
Competences Expected: AG-A05	
Topics	**Learning Outcomes**
• Architectural firm management: business structures (sole proprietorship, LLC, corporation), financial management (overhead, billable rates, utilization rate, profit margin), • Fee structures and negotiation: hourly, percentage of construction cost, lump sum, and design-build fees; calculating multiplier and break-even rate • Business development and marketing: identifying target project types, proposal writing, interview preparation, client relationship management (CRM), • Entrepreneurial architecture: product-based practice (design-build of prefab units, furniture, components), architect as developer, start-up models (coworking, remote practice) • Intellectual property in architecture: copyright ownership of architectural works (US Copyright Act, Berne Convention), licensing of drawings and digital models, moral rights,	• Identify the key financial metrics of architectural practice (utilization rate, multiplier, break-even rate) and describe common fee structures and their risks and benefits [Familiarity] • Prepare a simple business plan for a hypothetical architectural firm, including target markets, fee strategy, staffing plan, and financial projections for the first three years [Usage] • Evaluate a firm's financial performance using P&L statements, balance sheets, and KPI benchmarks from AIA or RIBA business surveys [Assessment]
Readings : [OP10]	

Unit 2: Development Process and Feasibility (16 hours)	
Competences Expected: AG-A05	
Topics	**Learning Outcomes**
• Development phases: site identification, option agreement, due diligence, entitlement (zoning, permits), design • Due diligence for development sites: title review, environmental assessment (Phase I and II), geotechnical investigation, zoning analysis, utility availability, • Entitlements and permitting: land use approvals (rezoning, variances, conditional use permits), building permits, impact fees (school, traffic, parks) • Feasibility study components: market support, site suitability, regulatory pathway, construction feasibility, financial pro forma (with sensitivity analysis), • Real estate pro forma basics: projected net operating income (NOI = gross potential rent minus vacancy allowance minus operating expenses), debt service coverage ratio (DSCR),	• Describe the major stages of the real estate development process - predevelopment, construction, lease-up, disposition - and the due diligence [Familiarity] • Prepare a feasibility study for a proposed development, including market analysis, site due diligence summary, entitlement pathway, construction cost estimate, [Usage] • Evaluate a development pro forma for financial viability, identifying understated risk (vacancy, construction contingency) [Assessment]
Readings : [PH19]	

Unit 3: PropTech and Digital Real Estate Innovation (16 hours)	
Competences Expected: AG-A06	
Topics	**Learning Outcomes**
• PropTech categories: marketing and leasing (listing platforms, CRM), asset and property management (tenant portals, maintenance platforms), data • AI in real estate: automated valuation models (AVM), rent prediction models, tenant behavior analytics, and AI for site selection (site scoring, foot traffic analysis) • Blockchain in real estate: tokenization of real estate assets (fractional ownership), smart contracts for lease • Smart building data for real estate: IoT sensor data (occupancy, energy, indoor environmental quality) used for performance-based leasing, predictive maintenance, • Commercial real estate tech (CREtech): online leasing platforms (VTS, Reonomy), virtual tours and 3D scanning, flex-space management software,	• Describe the main categories of PropTech (marketing, management, analytics, investment, construction) and how they affect real estate development and operations [Familiarity] • Propose a PropTech solution to a real estate development or management problem (e.g., lease-up velocity, tenant retention, valuation accuracy), specifying the data sources [Usage] • Evaluate a PropTech startup or platform for its value to developers or investors, assessing its data accuracy, integration capabilities, regulatory compliance, [Assessment]
Readings : [SB20]	

Unit 4: Stakeholder and Participatory Development (16 hours)	
Competences Expected: AG-A06	
Topics	**Learning Outcomes**
• Levels of stakeholder participation in development: inform, consult, involve, collaborate, empower (Arnstein's ladder) • Community benefits agreements (CBA): negotiating community benefits (local hiring, affordable housing, public space) in exchange for development approval, legal enforceability • Stakeholder mapping and analysis: identifying interest, influence, and impact on the development; designing engagement strategies for supportive, neutral, • Inclusive development models: land trusts, cooperative housing, community land banks, and public-community partnerships that give residents a stake in development outcomes • Participatory budgeting in development: allocating a portion of public infrastructure budget through community vote	• Describe the levels of stakeholder participation in development and the mechanisms (CBA, participatory budgeting, land trust) for inclusive development [Familiarity] • Develop a community engagement plan for a real estate development project, identifying stakeholders, choosing participation methods, [Usage] • Evaluate a community benefits agreement or participatory process for representativeness, enforceability, and impact on equitable development outcomes [Assessment]
Readings : [Bro09]	

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

[Bro09] Tim Brown. *Change by Design*. 1st. Harper Business, 2009.

[OP10] Alexander Osterwalder and Yves Pigneur. *Business Model Generation*. 1st. Wiley, 2010.

[PH19] Richard B. Peiser and David Hamilton. *Professional Real Estate Development: The ULI Guide to the Business*. 4th. Urban Land Institute, 2019.

[SB20] Andrew Saull and Alex Bayer. *The PropTech Guide*. 1st. self-published / Future PropTech, 2020.