

ANNEX 1 – INTEGRATED STUDY PLAN

Master's in Building Engineering - Engineering Management of Cultural Heritage

awarded by the University G. d'Annunzio, Chieti-Pescara (IT)

and

Master's in Civil Engineering - Rehabilitation and safety increase of constructions

awarded by the Gheorghe Asachi Technical University of Iași (RO)

Integrated Study Plan for UdA Students

First year at UdA

Second year, first semester at TUIASI

Second year, second semester at UdA

| BUILDING ENGINEERING - CURRICULUM ENGINEERING MANAGEMENT OF CULTURAL HERITAGE | | | | | | |
|---|---|------|----------|------|------------|---------------|
| | COURSE | Year | Semester | ECTS | Total ECTS | Course number |
| 1 st YEAR (2025/2026) | INTEGRATED COURSE (I.C.) on Techniques for Historical Buildings Rehabilitation and Restoration | 1 | | | 12 | 1 |
| | Conservation Theory of Historical Buildings and Heritage Conservation - module 1 | | I | 3 | | |
| | Conservation Theory of Historical Buildings and Heritage Conservation - module 2 | | | 3 | | |
| | Renovation, maintenance and conservation of historical buildings | | II | 6 | | |
| | Computational Analysis of Historical Buildings and Cultural Heritage | 1 | | | 6 | 2 |
| | CAHBCH_Module 1 | | I | 3 | | |
| | CAHBCH_Module 1 | | I | 3 | | |
| | Applied Acoustics and Lighting in Cultural Heritage | | II | 6 | 6 | 3 |
| | Integrated Course (I.C.) of Structural Diagnostics for Cultural Heritage | 1 | | | 12 | 4 |
| | Structural Dynamics | | I | 6 | | |
| | Seismic Behaviour of Historical Buildings_Module1 | | II | 3 | | |
| | Seismic Behaviour of Historical Buildings_Module1 | | II | 3 | | |
| | Close Range Photogrammetry and 3D Laser Scanning | 1 | | II | 6 | 5 |
| | Geotechnical Engineering for the Preservation of Cultural Heritage | 1 | | | 6 | 6 |
| | Soil mechanics, laboratory and in situ testing | | II | 3 | | |
| | Analysis and design of geotechnical structures | | II | 3 | | |
| 2 nd YEAR (2026/2027) | Natural and Artificial Materials for Historical Buildings and Cultural Heritage | 1 | I | | 6 | 7 |
| | Integrated Course (I.C.) of Energy and Structural Rehabilitation of Buildings | 2 | I | | 8 | 8 |
| | Auditing, technical assessment and energy rehabilitation of buildings | | | 4 | | |
| | Structural rehabilitation and Safety increase using composite materials | | | 4 | | |
| | Structural Monitoring and Diagnostics | 2 | | II | 6 | 9 |
| | Integrated Course (I.C.) of Masonry and Historical Structures | 2 | | | 12 | 10 |
| | Structural Strengthening | | II | 6 | | |
| | Masonry and Wood Structures of Historic Buildings | | II | 6 | | |
| | Integrated Course (I.C.) of Fire Safety and Rehabilitation | 2 | | | 10 | 11 |
| | Structural fire safety | | I | 4 | | |
| | Heritage building rehabilitation | | I | 6 | | |
| | Optional courses | 2 | | | 12 | 12 |
| | Seismic Geotechnics for Geohazard Risk Mitigation in Cultural Heritage | | II | 6 | | |
| | Research activity | 2 | I | 7 | | |
| | Advanced Earthquake Engineering | 2 | I | 5 | | |
| | Mineralogical and Petrographical Characterization of Natural and Artificial Stone Materials | | II | 6 | | |
| | Traineeship | 2 | | | 6 | |
| | Thesis dissertation | 2 | | | 12 | |
| | TOTAL | | | | 120 | |

Courses at
Gheorghe Asachi Technical University of Iași, Romania

Total credits at TUAS 30 ECTS

Integrated Study Plan for TUIASI students

First year, first semester at TUIASI

First year, second semester at UdA

Second year at TUIASI

| | Nr. crt. | Name of the discipline | Year | Semester | | ECTS | Course number |
|----------------------|----------|---|------|----------------------|----|---------|---------------|
| 1st YEAR (2025/2026) | 1 | Construction diagnostics | 1 | I | | 3 | |
| | 2 | Building maintenance | 1 | I | | 4 | |
| | 3 | Structural analysis with finite element software | 1 | I | | 5 | |
| | 4 | Buildings pathology and rehabilitation processes | 1 | I | | 4 | |
| | 5 | Ethics and integrity | 1 | I | | 2 | |
| | 6 | Optional courses | | | | | |
| | | Theory of elasticity and plasticity -advanced analysis | 1 | I | | 5 | |
| | | Advanced analysis of buildings | 1 | I | | | |
| | 7 | Research activity (sem 1) | | I | | 7 | |
| | 8 | Advanced programming for design and research in construction | 1 | | II | 3 | |
| | 9 | Technical assessment of buildings and structural consolidation design | 1 | | II | 6 | |
| | | Renovation, maintenance and conservation of historical buildings | 1 | | II | 6 | |
| | 10 | Building monitoring | 1 | | II | 4 | |
| | | Structural Monitoring and Diagnostics | 1 | | II | 6 | |
| | 11 | Construction design in BIM | 1 | | II | 5 | |
| | 12 | Close Range Photogrammetry and 3D Laser Scanning | 1 | | II | 6 | |
| | | Optional courses | | | | | |
| | | Special problems of assessing historical structures | 1 | | II | 5 | |
| | | Particularities for religious buildings | 1 | | II | | |
| | | Masonry and Wood Structures of Historic Buildings | 1 | | II | 6 | |
| 2nd YEAR (2026/2027) | 13 | Research activity (sem 2) | 1 | | II | 7 | |
| | | Seismic Geotechnics for Geohazard Risk Mitigation in Cultural Heritage | 1 | | II | 6 | |
| | 15 | Structural fire safety | 2 | I | | 4 | |
| | 16 | Heritage building rehabilitation | 2 | I | | 6 | |
| | 17 | Special problems of construction infrastructure | 2 | I | | 4 | |
| | 18 | Advanced Earthquake Engineering | 2 | I | | 5 | |
| | 19 | Optional courses | 2 | | | | |
| | | Structural rehabilitation and Safety increase using composite materials | | I | | 4 | |
| | | Auditing, technical assessment and energy rehabilitation of buildings | | I | | 4 | |
| | 20 | Research activity (sem.3) | 2 | I | | 7 | |
| | 21 | Research activity (sem. 4) | 2 | | II | 15 | |
| | 22 | Dissertation preparation (sem. 4) | 2 | | II | 15 | |
| | | TOTAL | | | | 120 | |
| | | Thesis dissertation | | | | 10 | |
| | | Courses at University "G. d'Annunzio" Chieti-Pescara, Italy | | Total credits at UdA | | 30 ECTS | |