**SYLLABUS**

1. **Information about the program**

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| **1.1** Higher education institution | UNIVERSITATEA POLITEHNICA TIMISOARA |
| **1.2** Faculty[[1]](#footnote-1) / Department[[2]](#footnote-2) | CONSTRUCTII/ CCI+CMMC |
| **1.3** Field of study (name/code[[3]](#footnote-3)) | INGINERIE CIVILA/ 10 |
| **1.4** Study cycle | Master |
| **1.5** Study program (name/code/qualification) | ADVANCED DESIGN OF BUILDINGS – PROIECTAREA AVANSATA A CLADIRILOR/ 10/ Master |

1. **Information about discipline**

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| **2.1** Name of discipline/The educational classe[[4]](#footnote-4) | | | Life Cycle Assessment and Circular Economy of Built Environment -Evaluarea ciclului de viață și economia circulară a mediul construit/ DA | | | | |
| **2.2** Coordinator (holder) of course activities | | | Conf. dr. ing. Simon PESCARI /Prof. dr. ing. Viorel UNGUREANU | | | | |
| **2.3** Coordinator (holder) of applied activities[[5]](#footnote-5) | | | drd. ing. Mircea MEREA/Conf.dr.ing. Ioan BOTH | | | | |
| **2.4** Year of study[[6]](#footnote-6) | 1 | **2.5** Semester | 1 | **2.6** Type of evaluation | E | **2.7** Regime of discipline[[7]](#footnote-7) | DO |

1. **Total estimated time** (direct activities (fully assisted), partially assisted activities and unassisted activities[[8]](#footnote-8))

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| **3.1** Number of hours fully assisted/week | 4 ,of which: | course | 2 | seminar/laboratory/project | | | 2 |
| **3.1\*** Total number of hours fully assisted/sem. | 56 ,of which: | course | 28 | seminar/laboratory/project | | | 28 |
| **3.2** Number of on-line hours fully assisted/sem | 25 ,of which: | course | 16 | seminar/laboratory/project | | | 9 |
| **3.3** Number of hours partially assisted/week | ,of which: | project, research |  | training |  | hours designing M.A. dissertation |  |
| **3.3\*** Number of hours partially assisted/ semester | ,of which: | project of research |  | training |  | hours designing M.A. dissertation |  |
| **3.4** Number of hours of unassisted activities/ week | 6.71 ,of which: | Additional documentation in the library, on specialized electronic platforms, and on the field | | | | | 2 |
| Study using a manual, course materials, bibliography and lecture notes | | | | | 3 |
| Preparation of seminars/ laboratories, homework, assignments, portfolios, and essays | | | | | 1.71 |
| **3.4\*** Total number of hours of unasssited asctivities/ semester | 94 ,of which: | Additional documentation in the library, on specialized electronic platforms, and on the field | | | | | 28 |
| Study using a manual, course materials, bibliography and lecture notes | | | | | 42 |
| Preparation of seminars/ laboratories, homework, assignments, portfolios, and essays | | | | | 24 |
| **3.5 Total hrs./week**[[9]](#footnote-9) | 10.71 | | | | | | |
| **3.5\* Total hrs./semester** | 150 | | | | | | |
| **3.6 No. of credits** | 6 | | | | | | |

**4. Prerequisites** (where applicable)

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| **4.1** Curriculum | * Material mechanics, Structural analysis, Basis of structural design, sustainability |
| **4.2** Competencies |  |

**5. Conditions** (where applicable)

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| **5.1** of the course | * Medium capacity room, video projector |
| **5.2** to conduct practical activities | * Medium capacity room, video projector, computers |

**6. Specific competencies** acquired through this discipline

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| Specific competencies | * Knowledge and use of modern materials and technology according to sustainable development * Design and technical analysis for green buildings and clean energy * Design and technical analysis for sustainable cities and communities |
| Professional competencies ascribed to the specific competencies | * ensure compliance with security legislation; provide instructions to staff; adhere to legal regulations; develop feasibility studies; supervise construction projects; provide construction counselling; integrate measures into architectural projects; apply health and safety standards; use measuring tools; draw sketches; manage engineering projects; evaluate environmental impact; draft technical reports; ensure compliance with environmental legislation; supervise personnel; adapts existing projects to new circumstances; evaluates the integrated design of buildings; Integrates construction requirements into architectural design; |
| Transversal competencies ascribed to the specific competencies | * manage financial and material resources; oversee quality control; apply scientific, technological, and engineering knowledge; work in teams; train others; use equipment, tools, or technological equipment accurately |

**7. Objectives of the discipline** (based on the grid of specific competemcies acquired)

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| **7.1** The general objective of the discipline | * Developing theoretical and practical skills in the field of construction necessary for the design, analysis and implementation of modern technologies and materials in order to satisfy the sustainable development goals |
| **7.2** Specific objectives | * Students learn to use technologies and materials according to sustainability requirements. * Students learn to design buildings according to their specifics. |

**8. Content**

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| **8.1** Course | | Number of hours | Of which online | Teaching methods |
| Introduction in sustainability | | 2 | Max 60% | Presentation on the blackboard, with video projector, conversations, explanations, examples |
| Sustainable development goals | | 4 |  |
| Sustainability in construction | | 6 |  |
| National Strategy for Sustainable Development of Romania 20230 | | 4 |  |
| Circular economy in construction | | 4 |  |
| Green energy and green buildings | | 8 |  |
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|  | 1. Bibliography[[10]](#footnote-10) World Sustainability Series – Handbook of Theory and Practice of Sustainable Development in Higher Education” Volume 2, Walter Leal Filho, Constantina Skanavis, Arminda do Paço, Judy Rogers, Olga Kuznetsova, Paula Castro 2. Mapping the Sustainable Development Goals (SDGs) in the University Curriculum, Sarah Kate Reid. Published April 2020, The University of Edinburgh 3. Higher Education For Sustainability: A Global Perspective, Inga Žalėnienė, Paulo Pereira, 2021 4. Dezvoltarea durabilă în perspectiva Agendei 2030   <https://www.edecon.ro/carte/1595/dezvoltarea-durabila-in-perspectiva-agendei-2030_georgiana-raluca-ladaru_florian-marin_marian-siminica_ionut-laurentiu-petre/>   1. Strategia României pt. Sustenabilitate   <https://sgg.gov.ro/1/wp-content/uploads/2018/10/SNDD-2030-_-varianta-dup%C4%83-Comitet-interministerial-4-octombrie-2018.pdf>   1. Sustainability Management   <https://www.enbook.ro/catalog/product/view/id/1571114?gad_source=1&gbraid=0AAAAA-A8zcPAEOAnp4gU4rCNXwrdHboPf&gclid=Cj0KCQjwrp-3BhDgARIsAEWJ6Sx1YCiOgknmQFCwYjNZrsrCANoc25hpBvAe9-vIg8481NepIkq6cFIaAjMiEALw_wcB> | | | |
| **8.2** Applied activities[[11]](#footnote-11) | | Number of hours | Of which online | Teaching methods |
| life cycle assessment for a building | | 12 | Max 35% | Presentation on the blackboard, with video projector, on the computer, conversations, explanations, examples |
| life cycle cost for a building | | 8 |  |
| Energy efficiency for a building | | 8 |  |
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|  | 1. Bibliography[[12]](#footnote-12) “World Sustainability Series – Handbook of Theory and Practice of Sustainable Development in Higher Education” Volume 2, Walter Leal Filho, Constantina Skanavis, Arminda do Paço, Judy Rogers, Olga Kuznetsova, Paula Castro 2. Mapping the Sustainable Development Goals (SDGs) in the University Curriculum, Sarah Kate Reid. Published April 2020, The University of Edinburgh 3. Higher Education For Sustainability: A Global Perspective, Inga Žalėnienė, Paulo Pereira, 2021 4. Dezvoltarea durabilă în perspectiva Agendei 2030   <https://www.edecon.ro/carte/1595/dezvoltarea-durabila-in-perspectiva-agendei-2030_georgiana-raluca-ladaru_florian-marin_marian-siminica_ionut-laurentiu-petre/>   1. Strategia României pt. Sustenabilitate   <https://sgg.gov.ro/1/wp-content/uploads/2018/10/SNDD-2030-_-varianta-dup%C4%83-Comitet-interministerial-4-octombrie-2018.pdf>   1. Sustainability Management   <https://www.enbook.ro/catalog/product/view/id/1571114?gad_source=1&gbraid=0AAAAA-A8zcPAEOAnp4gU4rCNXwrdHboPf&gclid=Cj0KCQjwrp-3BhDgARIsAEWJ6Sx1YCiOgknmQFCwYjNZrsrCANoc25hpBvAe9-vIg8481NepIkq6cFIaAjMiEALw_wcB> | | | |

**9. Coroboration of the content of the discipline with the expectations of the main representatives of the epistemic community, professional associations and employers in the field afferent to the program**

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| * The graduate will be able to design buildings in accordance with engineering and sustainability principles |

**10. Evaluation**

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| Type of activity | **10.1** Evaluation criteria[[13]](#footnote-13) | **10.2** Evaluation methods | **10.3** Share of the final grade |
| **10.4** Course | 4 theoretical topics | Written examination | 50% |
| **10.5** Applied activities | **S:** 1 problem to evaluate the life cycle assessment for a building | Written examination, | 50% |
|  | **L:** |  |  |
|  | **P:** |  |  |
|  | **Pr:** |  |  |
|  | **Tc-R[[14]](#footnote-14):** |  |  |
| **10.6** Minimum performance standard (minimum amount of knowledge necessary to pass the discipline and the way in which this knowledge is verified[[15]](#footnote-15) | | | |
| * The final mark must accumulate a minimum score of 5 points out of 10 possible | | | |

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| **Date of completion** | **Course coordinator**  **(signature)** | **Coordinator of applied activities**  **(signature)** |
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| **Head of Department**  **(signature)** | **Date of approval in the Faculty Council [[16]](#footnote-16)** | **Dean**  **(signature)** |
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1. The name of the faculty which manages the educational curriculum to which the discipline belongs [↑](#footnote-ref-1)
2. The name of the department entrusted with the discipline, and to which the course coordinator/holder belongs. [↑](#footnote-ref-2)
3. The code provided in HG - on the approval of the Nomenclature of fields and specializations / study programs, annually updated. [↑](#footnote-ref-3)
4. The educational classes of disciplines are: thoroughgoing study discipline (DA), advanced knowledge discipline (DCAV), synthesis discipline (DS) or complementary discipline (DC). [↑](#footnote-ref-4)
5. The applied activities refer to: seminar (S) / laboratory (L) / project (P) / practice/training (Pr). [↑](#footnote-ref-5)
6. The year of study to which the discipline is provided in the curriculum . [↑](#footnote-ref-6)
7. Discipline may have one of the following regimes: imposed discipline (DI) or compulsory discipline (DOb)-for the other fundamental fields of studies offered by UPT or optional discipline (DO). [↑](#footnote-ref-7)
8. Within UPT, the number of hours from 3.1\*, 3.2\*,…,3.9\* are obtained by multipling by 14 (weeks) the number of hours from 3.1, 3.2,…, 3.9. [↑](#footnote-ref-8)
9. The total number of hours/week is obtained by summing up the number of hours from 3.1, 3.4 şi 3.8. [↑](#footnote-ref-9)
10. At least one title must belong to the department staff teaching the discipline, and at least one title must refer to a relevant work for the discipline, a national and international work that can be found in the UPT Library. [↑](#footnote-ref-10)
11. The types of applied activities are those mentioned in 5. If the discipline containes more types of applied activities then they are marked, consecutively, in the table below. The type of activity will be marked distinctively under the form: „Seminar:”, „Laboratory:”, „Project:” and/or „Practice/Training:”. [↑](#footnote-ref-11)
12. At least one title must belong to the staff teaching the discipline. [↑](#footnote-ref-12)
13. The Syllabus must contain the evaluation method of the discipline, specifying the criteria, the metods and the forms of evaluation, as well as mentioning the share attached to these within the final mark. The evaluation criteria must correspond to all activities stipulated in the curriculum (course, seminar, laboratory, project), as well as to the methods of continuous assessment (homework, essays etc.) [↑](#footnote-ref-13)
14. Tc-R= Homework-Reports [↑](#footnote-ref-14)
15. For this point turn to “Ghid de completare a Fișei disciplinei” found at: <http://www.upt.ro/img/files/2018-2019/calitate/Ghid_de_completare_fisa_disciplinei.pdf> [↑](#footnote-ref-15)
16. The approval is preceeded by discussing the study program’s board’s point of view with redgards to the syllabus. [↑](#footnote-ref-16)