**SYLLABUS**

1. **Information about the program**

|  |  |
| --- | --- |
| **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**

|  |  |
| --- | --- |
| **2.1** Name of discipline/The educational classe[[4]](#footnote-4) |  Structural Assessment of Existing Buildings/DS  |
| **2.2** Coordinator (holder) of course activities |  Prof.dr.ing. DAN Sorin / Prof.dr.ing. NAGY-GYORGY Tamas / Prof.dr.ing. UNGUREANU Viorel  |
| **2.3** Coordinator (holder) of applied activities[[5]](#footnote-5) |  Prof.dr.ing. DAN Sorin / Prof.dr.ing. NAGY-GYORGY Tamas / Prof.dr.ing. UNGUREANU Viorel  |
| **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) |  Di  |

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **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 |  4.9 ,of which:  | Additional documentation in the library, on specialized electronic platforms, and on the field | 0.7  |
| Study using a manual, course materials, bibliography and lecture notes | 1.7  |
| Preparation of seminars/ laboratories, homework, assignments, portfolios, and essays | 2.5  |
| **3.4\*** Total number of hours of unasssited asctivities/ semester |  69 ,of which:  | Additional documentation in the library, on specialized electronic platforms, and on the field |  10  |
| Study using a manual, course materials, bibliography and lecture notes |  24  |
| Preparation of seminars/ laboratories, homework, assignments, portfolios, and essays |  35  |
| **3.5 Total hrs./week**[[9]](#footnote-9) |  8.9  |
| **3.5\* Total hrs./semester** |  125  |
| **3.6 No. of credits** |  5  |

**4. Prerequisites** (where applicable)

|  |  |
| --- | --- |
| **4.1** Curriculum | * Mechanics of Materials 1, 2; Structural Analysis 1, 2; Concrete 1, 2; Structural Dynamics and Earthquake Engineering; Steel Structures, Buildings
 |
| **4.2** Competencies | * Structural analysis of beams, columns and frames; Analysis of materials
 |

**5. Conditions** (where applicable)

|  |  |
| --- | --- |
| **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

|  |  |
| --- | --- |
| Specific competencies | * Modelling of structural behavior of existing buildings
* Using software for linear and non-linear structural analysis
* Structural assessment of existing buildings, made of concrete / masonry / steel
 |
| 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 counseling; integrate measures into architectural projects; apply health and safety standards; use measuring tools; draw sketches; utilize CAD software; manage engineering projects; draft technical reports; supervise personnel; conduct sample analysis; adapts existing projects to new circumstances;
 |
| 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)

|  |  |
| --- | --- |
| **7.1** The general objective of the discipline | * Dobândirea cunoștințelor despre evaluarea construcțiilor existente folosind metodologia din P100-3 "Cod de proiectare seismică – Partea a III-a - prevederi privind evaluarea seismică a clădirilor existente"
 |
| **7.2** Specific objectives | * Recunoașterea deficiențelor tipice ale structurilor existente din beton armat, zidărie și metalice
* Efectuarea unui calcul static liniar și neliniar folosind programe de calcul structural
* Evaluarea performanței structurilor existente din beton armat, zidărie și metalice
 |

**8. Content**

|  |  |  |  |
| --- | --- | --- | --- |
| **8.1** Course | Number of hours | Of which online | Teaching methods |
|  Introduction. Methods for structural assessment of existing buildings  |  2  |  Max 60%  |  lectures, conversation, demonstration  |
|  Present codes for assessment of existing structures  |  6  |   |
|  Calculation methods at seismic action according to Romanian Code P100-3  |  4  |   |
|  Assessment of concrete structures and bearing capacity at different loads  |  4  |   |
|  Time behavior of concrete structures and influence of structural damage over its bearing capacity  |  4  |   |
|  Assessment of masonry structures and bearing capacity at different loads  |  4  |   |
|  Assessment of steel structures and bearing capacity at different loads  |  4  |   |
|   |   |   |
|   |   |   |
|   |   |   |
|   |   |   |
|   |   |   |
|   |   |   |
|   |   |   |
|  | Bibliography[[10]](#footnote-10) 1. Eurocode 2 Design of concrete structures - Part 1-1: General rules and rules for buildings2. SR EN 1992 Proiectarea structurilor de beton – Partea 1-1: Reguli generale si reguli pentru cladiri;3. Note de curs, Clipii T., Tudor Agneta, 2011 Biblioteca digitala UPT. 4. P100-3 / 2019 "Cod de proiectare seismică – Partea a III-a - prevederi privind evaluarea seismică a clădirilor existente"5. FEMA 356, 2000, "Prestandard and commentary for the seismic rehabilitation of buildings", prepared by the American Society of Civil Engineers for the Federal Emergency Management Agency, Washington, D.C. (FEMA Publication No. 356)  |
| **8.2** Applied activities[[11]](#footnote-11) | Number of hours | Of which online | Teaching methods |
|  Proiect – Evaluarea prin calcul a unei structuri existente din beton armat / zidărie / oțel  |  28  |  Max. 35%  |  explanations, examples  |
|   |  6  |   |
|   |  2  |   |
|   |  4  |   |
|   |  5  |   |   |
|   |   |   |   |
|   |   |   |   |
|   |   |   |   |
|   |   |   |   |
|  | Bibliography[[12]](#footnote-12) 1. Eurocode 2 Design of concrete structures - Part 1-1: General rules and rules for buildings2. SR EN 1992 Proiectarea structurilor de beton – Partea 1-1: Reguli generale si reguli pentru cladiri;3. Note de curs, Clipii T., Tudor Agneta, 2011 Biblioteca digitala UPT. 4. P100-3 / 2019 "Cod de proiectare seismică – Partea a III-a - prevederi privind evaluarea seismică a clădirilor existente"5. FEMA 356, 2000, "Prestandard and commentary for the seismic rehabilitation of buildings", prepared by the American Society of Civil Engineers for the Federal Emergency Management Agency, Washington, D.C. (FEMA Publication No. 356)  |

**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**

|  |
| --- |
| * Technische Universität München , Fakultät für Bauingenieur- und Vermessungswesen
* Universite de Liege, Faculty of Applied Sciences
* Budapest University of Technology and Economics, Faculty of Civil Engineering
 |

**10. Evaluation**

|  |  |  |  |
| --- | --- | --- | --- |
| Type of activity | **10.1** Evaluation criteria[[13]](#footnote-13) | **10.2** Evaluation methods | **10.3** Share of the final grade |
| **10.4** Course |  Theoretical subjects  |  Written exam  |  50%  |
| **10.5** Applied activities  | **S:**  |   |   |
|  | **L:**   |   |   |
|  | **P:**  Students are expected to attend and participate in class session  |  Presenting project  |  50%  |
|  | **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 answers to the exam subjects must accumulate a minimum score of 5 points out of 10 possible.
 |

|  |  |  |
| --- | --- | --- |
| **Date of completion** | **Course coordinator****(signature)** | **Coordinator of applied activities****(signature)** |
|  25.11.2024  |  Prof.dr.ing. DAN SorinProf.dr.ing. NAGY-GYORGY Tamas Prof.dr.ing. UNGUREANU Viorel  |  Prof.dr.ing. DAN SorinProf.dr.ing. NAGY-GYORGY Tamas Prof.dr.ing. UNGUREANU Viorel  |

|  |  |  |
| --- | --- | --- |
| **Head of Department** **(signature)**  | **Date of approval in the Faculty Council [[16]](#footnote-16)** | **Dean****(signature)** |
|  Prof.dr.ing. DAN Sorin  |   |   |

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)