***Annex 1***

*Recommended template: “Course Description, Syllabus, Course Requirements”*

# course syllabus and course requirements academic year 2024/2025 semester Fall

|  |  |
| --- | --- |
| Course title | Modern Construction Materials |
| **Course Code** | **MSB079ANEM** |
| **Hours/Week: le/pr/lab** | **3 lectures per/week** |
| **Credits** | **3** |
| **Degree Programme** | **B.Sc in Architectural Engineering** |
| **Study Mode (TVSZ-ben training schedule)** |  |
| **Requirements** | **Exam** |
| **Teaching Period** | **7 th** |
| **Prerequisites** | **None** |
| **Department(s)**  **Course Director** | **Architecture Engineering** |
| **Teaching Staff** | **Ali Mohamed Mohamed Salem** |
| **Hours/Week: le/pr/lab** | **3 lectures per/week** |
|  |  |

# course description

*Neptun: Instruction/Subjects/Subject Details/Basic data/Subject description*

This course provides the scientific basis for the understanding and development of construction materials. It serves as a foundation course for post-graduate students interested in careers involving research, teaching and/or construction engineering, as well as marketing, decision making, innovation and specification related to construction materials. It can also be a capstone course for undergraduates finishing their studies in civil engineering and architecture.

# syllabus

*Neptun: Instruction/Subjects/Subject Details/Syllabus*

## **goals and objectives**

*Neptun: Instruction/Subjects/Subject Details/Syllabus/Goal of Instruction*

Students will gain from this course:

-Understand the use of modern construction materials.

- Apply knowledge of modern materials in production of variety of concrete.

- Apply the knowledge of smart and intelligent materials in construction field

-Use modern water proofing and insulating materials in constructions

## **course content**

*Neptun: Instruction/Subjects/Subject Details/Syllabus/Subject content*

|  |  |
| --- | --- |
|  | TOPICS |
| LECTURE | 1. The Science, Engineering and Technology of Materials - I 2. The Science, Engineering and Technology of Materials - II. 3. Properties and uses of modern building materials 4. Special Concretes, Properties and Applications of of HPFRC, Fibre reinforced plastics (FRP) 5. Self-cleaning concrete, Self- compacting concrete, 6. Light transparent concrete 7. Introduction of Non-Structural Materials and Criteria for Selection - Types and properties of Water Proofing Materials 8. Conventional and modern insulating materials( thermal, sound and electrical insulating materials 9. Smart and intelligent materials, NANO technology in construction 10. Recycling of construction materials |

### **DETAILED SYLLABUS AND COURSE SCHEDULE**

### *academic holidays included*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| LECTURE | | | | |
| week | **Topic** | **Compulsory reading; page number**  **(from … to …)** | **Required tasks (assignments, tests, etc.)** | **Completion date, due date** |
| 1. | Course description. Orientation.  Introduction to construction materials. | … | … | … |
| 2. | The Science, Engineering and Technology of Materials | Lecture notes and slides | Assignment \_1 | 16-09-2024 |
| 3. | Properties and uses of modern building materials | Lecture notes and slides | Assignment \_2 | 23-9-2024 |
| 4. | Special Concretes, Properties and Applications of of HPFRC, Fibre reinforced plastics (FRP) | Lecture notes and slides | Assignment \_3 | 30-9-2024 |
| 5. | Self-cleaning concrete, Self- compacting concrete | Lecture notes and slides | Assignment \_4 | 7-10-2024 |
| 6. | Light transparent concrete | Lecture notes and slides | Assignment \_5 | 14-10-2024 |
| 7. | Introduction of Non-Structural Materials and Criteria for Selection - Types and properties of Water Proofing Materials | Lecture notes and slides | Assignment \_6 | 21-10-2024 |
| 8. | **Midterm exam** |  |  | ----- |
| 9. | Autumn break | ------ | ------ | 11-11-2024 |
| 10. | Conventional and modern insulating materials( thermal, sound and electrical insulating materials | Lecture notes and slides | Assignment \_7 | 18-11-2024 |
| 11. | Smart and intelligent materials, NANO technology in construction | Lecture notes and slides | Assignment \_8 | 25-11-2024 |
| 12. | Recycling of construction materials | Lecture notes and slides | Assignment \_9 | 2-12-2024 |
| 13. | **Student’s presentations.** | Lecture notes and slides | Assignment \_10 | 09-12-2024 |
| 14. | Final exam. |  |  |  |

## **assessment and evaluation**

*(Neptun: Instruction/Subjects/Subject Details/Syllabus/Examination and Evaluation System)*

##### **Attendance**

*In accordance with the Code of Studies and Examinations of the University of Pécs, Article 45 (2) and Annex 9. (Article 3) a student may be refused a grade or qualification in the given full-time course if the number of class absences exceeds 30% of the contact hours stipulated in the course description.*

***Method for monitoring attendance*** *(e.g.: attendance sheet / online test/ register, etc.)*

attendance sheet

##### **assessment**

*Cells of the appropriate type of requirement is to be filled out (course-units resulting in mid-term grade or examination). Cells of the other type can be deleted.*

Course resulting in mid-term grade (PTE TVSz 40§(3))

**Mid-term assessments, performance evaluation and their ratio in the final grade**

|  |  |  |
| --- | --- | --- |
| **Type** | **Assessment** | **Ratio in the final grade** |
| Attendance | 10 points | 10% |
| Assignments and presentation | 20 points | 20% |
| Midterm Exam | 20 points | 20% |
| Final Exam | 50 points | 50% |

**Opportunity and procedure for re-takes** (PTE TVSz 47§(4))

all tests and assessment tasks can be repeated/improved at least once every semester, and the tests and home assignments can be repeated/improved at least once in the first two weeks of the examination period.

**Grade calculation as a percentage**

based on the aggregate performance according to the following table

|  |  |
| --- | --- |
| **Course grade** | **Performance in %** |
| excellent (5) | 85 % … |
| good (4) | 70 % ... 85 % |
| satisfactory (3) | 55 % ... 70 % |
| pass (2) | 40 % ... 55 % |
| fail (1) | below 40 % |

The lower limit given at each grade belongs to that grade.

Course-unit with final examination

**Mid-term assessments, performance evaluation and their weighting as a pre-requisite for taking the final exam**

|  |  |  |
| --- | --- | --- |
| Type | Assessment | Weighting as a proportion of the pre-requisite for taking the exam |
| 1. Attendance | 10 points | 10% |
| 1. Assignments and presentation | 20 points | 20% |
| 1. Midterm Exam | 20 points | 20% |
| 1. Final Exam | 50 points | 50% |

**Requirements for the end-of-semester signature**

***The* end-of-semester signature** ***is successful if the result is minimum 40 %.***

**Re-takes for the end-of-semester signature (**PTE TVSz 50§(2))

All tests and assessment tasks can be repeated/improved at least once every semester, and the tests and home assignments can be repeated/improved at least once in the first two weeks of the examination period.

***Type of examination*** *(written, oral): written*

***The exam is successful if the result is minimum 40 %.***

**Calculation of the grade** (TVSz 47§ (3))

The mid-term performance accounts for  ***20***  %, the performance at the exam accounts for  ***50***  % in the calculation of the final grade.

**Calculation of the final grade based on aggregate performance in percentage.**

|  |  |
| --- | --- |
| **Course grade** | **Performance in %** |
| excellent (5) | 85 % … |
| good (4) | 70 % ... 85 % |
| satisfactory (3) | 55 % ... 70 % |
| pass (2) | 40 % ... 55 % |
| fail (1) | below 40 % |

The lower limit given at each grade belongs to that grade.

## **Specified literature**

*In order of relevance. (In Neptun ES: Instruction/Subject/Subject details/Syllabus/Literature)*

##### **compulsory reading and availability**

[1.] Primary compulsory reading and its availability

[2.] Compulsory literature and its availability

##### **recommended literature and availability**

[3.] Dr. U. K. Shrivastava, Building Materials Technology, Galgotia Publication pvt.ltd

[4]Ganapathy, C. “Modern Construction Materials”, Eswar Press, 2015..

[5] N.Subramanian ,”Building Materials Testing and Sustainability”, Oxford Higher Education, 2019.

[6] - Lecture notes and slides