**Załącznik nr 7**

**do Zarządzenia Rektora nr 10/12**

**z dnia 21 lutego 2012r.**

**Module descriptor**

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| --- | --- |
| Code of module |  |
| Title of module | **Wybrane Zagadnienia z Konstrukcji Betonowych** |
| Title of module in English language | **Some Aspects of Concrete Structures** |
| Valid period | **2017/18** |

1. **Module localization**

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| --- | --- |
| Subject panel | **Civil Engineering** |
| Courses level | **II level** |
| Profile of study | **Academic** |
| Type of study | **Full-time courses** |
| Spectiality | **Building Structures** |
| Unit | **Department of Strength of Materials Concrete Structures and Bridges** |
| Module co-ordinator | **Dr Eng. Artur Wójcicki** |
| Approved: | **Prof. dr hab. inż. Marek Iwański** |

1. **Subjects description**

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| --- | --- |
| Subject Group: | **Major subject** |
| Status: | **compulsory** |
| Language: | **English** |
| Semester (planned): | **I semester** |
| Period (planned): | **summer**  *(semestr zimowy / letni)* |
| Preliminary requirements: | **-** |
| Exam: | **No** |
| Credits ECTS: | **2** |

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| --- | --- | --- | --- | --- | --- |
| **Learning Hours (in semester)** | **Lecture** | **Exercise** | **Laboratory** | **Design courseworks** | **Note** |
|  | **15** |  |  | **15** |  |

1. **Summary of Module**

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| **Module purpose** | The main aim is to get to know basic vocabulary associated with general knowledge of design of concrete structures (simple and complex concrete structures) |

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| **Symbol** | **Learning outcomes** | **Learning activities** | **Reference to learning outcomes** | **Reference to learning objects** |
| **W2\_01** | Student knows basic terminology associated with concrete structures and prestressed concrete structures. | W/P | B2\_W09  B2\_W14  B2\_W16 | T2A\_W01  T2\_W03  T2A\_W04  T2A\_W06  T2A\_W07 |
| **U2\_01** | Student can use basic terms and solve basic problems associated with design of concrete structures. | W/P | B2\_U03 | T2A\_U08  T2A\_U16 T2A\_U18 T1A\_U06 |
| **K2\_01** | Student is able to work independently and in the group. Student is able to organize the work for the team. He can divide the workload between members of the group according to their competences. | W/P | B2\_K01  B2\_K03  B2\_K05  B2\_K06  B2\_K07 | T2A\_K01  T2A\_K03  T2A\_K04  T2A\_K06  T1A\_K07 |
| **K2\_02** | Student is responsible for the reliability of achieved results. | W/P | B2\_K02 | T2A\_K03  T2A\_K05 |

**Learning activities:**

1. Learning outcome (lecture)

|  |  |  |
| --- | --- | --- |
| **Nr** | **Core skills** | **Reference to learning objects** |
| 1. | Introduction:   * information about course contents, * information about grading methods, * recommended reading. | W2\_01 |
| 2. | * Frame structures. * Precast concrete. * Composite concrete flexural members. * Changes in cross sections of rc bending element under load * Nonlinear behaviour of complex concrete structures * Load level influence on distribution of internal forces in reinforced concrete complex structures, examples of calculations | W2\_01  U2\_01  K2\_01  K2\_02 |
| 3. | * Nondestructive metods – testing reinforced concrete structures | W2\_01  U2\_01  K2\_01  K2\_02 |

1. Learning outcome (exercises)

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| --- | --- | --- |
| **Nr** | **Core skills** | **Reference to learning objects** |
| 1. | Design of the slab structure. | W2\_01  U2\_01  K2\_01  K2\_02 |

1. Learning outcome (laboratory)
2. Learning outcome (design coursework)

|  |  |  |
| --- | --- | --- |
|  | **Core skills** | **Reference to learning objects** |

1. Other

**Assessment Results**

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| --- | --- |
| **Reference to learning objects** | **Assessment results of learning objects** |
| **W2\_01** | Report in english, design |
| **U2\_01** | Report in english, design |
| **K2\_01** | Report in english, design |
| **K2\_02** | Report in english, design |

1. **Student effort**

|  |  |  |
| --- | --- | --- |
| **Summary of ECTS points** | | |
|  | **Learning activity** | **Students learning hours** |
| 1 | Lectures | **15** |
| 2 | Exercises |  |
| 3 | Laboratory |  |
| 4 | Consultation (two times in semester) | **2** |
| 5 | Design coursework | **15** |
| 6 | Coursework consultation | **3** |
| 7 | Exam | **0** |
| 8 |  |  |
| 9 | **Total amount of contact hours** | **35**  *(suma)* |
| 10 | **Total ECTS points received during classes** | **1,4** |
| 11 | Individual analyzing of lecture topics | **4** |
| 12 | Preparing to exercise | **4** |
| 13 | Preparing to colloquium | **6** |
| 14 | Preparing to laboratory |  |
| 15 | Report performing | **3** |
| 15 | Preparing to final colloquium |  |
| 17 | Design performing | **8** |
| 18 | Preparing to final exam |  |
| 19 |  |  |
| 20 | **Self study student learning hours** | **25**  *(suma)* |
| 21 | **Summary of self study ECTS points** | **1,0** |
| 22 | **Total** | **60** |
| 23 | **ECTS points for a module** | **2** |
| 24 | **Students effort for practice** | **0** |
| 25 | **ECTS points for practice**  1 point ECTS=25-30 hours of student’s work | **0** |

1. **Bibliography**

|  |  |
| --- | --- |
| Reference | 1. EN 1992-1-1. Eurocode2: 2004. Design of concrete structures. Part 1. General rules and rules for buildings. 2. Lecture notes. 3. Materials provided by the teacher (designs and examples of teacher, papers, scientific reports etc.) |
| Web site module |  |