**Form No:ÜY-FR-0317**

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|  | **ECTS Course Description Form** |
| **PART I ( Senate Approval)** |
| **Offering School**  | **Engineering** |
| **Offering Department** | **Civil Engineering** |
| **Program(s) Offered to** | **Civil Engineering** | Elective |
|  |  |
|  |  |
| **Course Code**  | CE 423 |
| **Course Name** | Water Resources Engineering |
| **Language of Instruction** | English |
| **Type of Course** | Lecture |
| **Level of Course** | **Undergraduate** |
| **Hours per Week** | **Lecture: 3** | **Laboratory:** | **Recitation:**  | **Practical:**  | **Studio:** | **Other:** |
| **ECTS Credit** | **5** |
| **Grading Mode** | **Letter Grade** |
| **Pre-requisites** | - |
| **Co-requisites** | **-** |
| **Registration Restriction** | *-* |
| **Educational Objective** | 1. To give general information about the development of water resources and to teach the necessary methods.2. To gain the ability to apply knowledge of mathematics, science and engineering in solving water resources problems.3. To gain the skills of data collection, analysis and interpretation. |
| **Course Description** | Development of water resources, stream morphology, solid matter movement in rivers, river regulation, flood control, river transport, water resources planning, bindings, dams, spillways, energy breakers, water intake structures, irrigation and drying, water power facilities, economical in water resources analysis |
| **Learning Outcomes**  | **LO1** | I. Obtains necessary information about water resources projects. Gains the ability to diagnose and solve problems encountered in water resources.II. Gains the ability to diagnose and solve problems encountered in water resources.III. Learns data collection and analysis methods in water resources.IV. Designs water structures.V. independently conducts an advanced study in his field. |
| **LO2** |
| **LO3** |
| **LO4** |
| **LO5** |
| **LO6** |
| **n..** |
| **PART II ( Faculty Board Approval)** |
| **Basic Outcomes (University-wide)** | **No.** | **Program Outcomes** | **LO1** | **LO2** | **LO3** | **LO4** | **LO5** | **LO6** |
| **PO1** | **Ability** to communicate effectively and write and present a report in Turkish and English.  | 🗸 🗸 🗸 🗸 🗸 🗸 🗸 🗸 🗸 🗸 🗸 🗸 🗸 🗸 🗸 🗸 🗸 🗸 🗸 🗸 🗸 |
| **PO2** | **Ability** to work individually, and in intra-disciplinary and multi-disciplinary teams. |
| **PO3** | **Recognition** of the need for life-long learning and **ability** to access information , follow developments in science and technology, and continually reinvent oneself. |
| **PO4** | **Knowledge** of project management, risk management, innovation and change management, entrepreneurship, and sustainable development. |
| **PO5** | **Awareness** of sectors and **ability** to prepare a business plan. |
| **PO6** | **Understanding** of professional and ethical responsibility and **demonstrating** ethical behavior. |
| **Faculty Specific Outcomes** | **PO7** |  |
| **PO8** |  |
| **PO9** |  |
| **PO10** |  |
| **PO11** |  |
| **PO12** |  |
| **Discipline Specific Outcomes (program)** | **PO13** |  |
| **PO14** |  |
| **PO15** |  |
| **PO16** |  |
| **PO17** |  |
| **PO18** |  |
| **Specialization Specific Outcomes** | **PO N….** |  |
| **PART III ( Department Board Approval)** |
| **Course Subjects, Contribution of Course Subjects to Learning Outcomes, and Methods for Assessing Learning of Course Subjects** | **Subjects** | **Week** |  | **LO1** | **LO2** | **LO3** | **LO4** | **LO5** | **LO6** |
| **S1** | 1 | Improvement of water resources; fluvial morphology | A1 |  |  |  |  | A1 |
| **S2** | 2 | River morphology | A1 |  |  |  |  | A1 |
| **S3** | 3 | Sediment transport |  | A1 | A1 |  |  |  |
| **S4** | 4 | River restoration | A1 | A1 |  |  |  | A1 |
| **S5** | 5 | Flood control, planning and design |  | A1 | A1 – A3 | A1 |  |  |
| **S6** | 6 | River navigation | A1 |  |  | A1 |  | A1 |
| **S7** | 7 | Diversion weirs and spillways |  | A1 |  | A1 |  |  |
| **S8** | 8 | Diversion weirs and spillways |  | A1 |  | A1 |  |  |
| **S9** | 9 | Dams |  | A1 |  | A1 |  |  |
| **S10** | 10 | Energy dissipation structures |  | A1 |  | A1 |  |  |
| **S11** | 11 | Water intakes | A1 | A1 |  | A1 |  | A1 |
| **S12** | 12 | Hydroelectric power plants | A1 | A1 |  | A1 |  | A1 |
| **S13** | 13 | Irrigation - Drainage | A1 | A1 |  | A1 |  | A1 |
| **S14** | 14 | Economical analysis in water resources engineering |  |  | A1 – A3 | A1 – A3 |  |  |
| **Assessment Methods, Weight in Course Grade, Implementation and Make-Up Rules**  | **No.** | **Type** | **Weight** | **Implementation Rule** | **Make-Up Rule** |
| **A1** | **Exam** | *80%* | *No electronic devices are allowed in the examinations except for calculators.* | If the reason for not taking the exam is justified by the school, the student is informed about the time of the make-up exam. |
| **A2** | **Quiz** | *-* |  |  |
| **A3** | **Homework** | *20%* | *Homeworks are given by announcing deadline. Homeworks that are submitted after the deadline are not accepted.* | There is no compensation for the Homeworks. |
| **A4** | **Project** |  |  |  |
| **A5** | **Report** |  | - | - |
| **A6** | **Presentation** |  | - | - |
| **A7** | **Attendance/ Interaction** | 10% | - | - |
| **A8** | **Class/Lab./****Field Work** |  | - | - |
| **A9** | **Other** |  |  |  |
| **TOTAL** | **100%** |
| **Evidence of Achievement of Learning Outcomes** | **The passing grades are determined by weighting the grades between 1 and 100 that students get from exams, quizzes and assignments in the specified percentages. The lecturer of the course can change the students' grades over the total average according to the pass-fail percentages of the enrolled students.** |
| **Method for Determining Letter Grade** | **As a result of the successful completion of all evaluations, the average grade will be determined and converted into a final letter grade.**

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| **Evaluation Method** | **Percentage** |   | **GRADE** | **MARKS** | **GRADE** | **MARKS** |
| Attendance | 10% |   | A+ | - | C+ | 60-64 |
| Midterm Exam | 30% |   | A | 95-100 | C | 55-59 |
| Final Exam | 40% |   | A- | 85-94 | C- | 50-54 |
| Homework | 20% |  | B+ | 80-84 | D+ | 45-49 |
|   |  |   | B | 75-79 | D | 40-44 |
|   |  |  |  | B- | 65-74 | F | 0-39 |
|   |  |  |   |  |  |  |  |

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| **Teaching Methods, Student Work Load** | **No** | **Method** | **Explanation** | **Hours** |
| ***Time applied by instructor*** |
| **1** | **Lecture** | Lectures will held by writing on the blackboard and explaining the slides. Sample questions and answers will be made to strengthen learning with classroom exams. | 3x14=42 |
| **2** | **Interactive Lecture** | The lecturer asks questions related to the subject being told. | - |
| **3** | **Recitation** |  | - |
| **4** | **Laboratory** |  | - |
| **5** | **Practical** | It includes supervised practice exercises that allow the student to apply the acquired knowledge. | - |
| **6** | **Field Work** |  | - |
| ***Time expected to be allocated by student*** |
| **7** | **Project** |  | *-* |
| **8** | **Homework** | The solution prepared by the student at home to the given graphic problem. | 18 |
| **9** | **Pre-class Learning of Course Material**  |  | 36 |
| **10** | **Review of Course Material** | Weekly lessons and studies before the exam. | 60 |
| **11** | **Studio** |  | - |
| **12** | **Office Hour** |  | - |
| **TOTAL** |  *156* |
| **IV. PART** |
| **Instructor** | **Name** | Necati Ağıralioğlu |
| **E-mail** | necati.agiralioglu@antalya.edu.tr |
| **Phone Number** | 0542 253 81 56 |
| **Office Number** | A1 |
| **Office Hours** | 4 hours (determined according to the school term) |
| **Course Materials** | **Mandatory** | Mays, Larry W,2010, Water Resources Engineering, John Wiley & Sons. |
| **Recommended** | -Erkek, C., Ağıralioğlu, N., 7. Edition, Su Kaynakları, Beta Press, 2016-Yanmaz, A. M., 1997, Applied Water Resources Engineering, METU Press.-Mays, Larry W,2010, Water Resources Engineering, John Wiley & Sons.-Tchobanoglous G,. Freyberg D. L,. Franzini J. B and K. Linsley R., 1991,Water Resources Engineering by*-*Hydraulic Structures, Fourth Edition Yazar: P. Novak,A.I.B. Moffat,C. Nalluri,R. Narayanan-Water Resources Engineering: Handbook of Essential Methods and Design By Anand Prakash, ASCE PressISBN (print): 978-0-7844-0674-8ISBN (PDF): 978-0-7844-7101-2 |
| **Other** | **Scholastic Honesty** | Violations of scholastic honesty include, but are not limited to cheating, plagiarizing, fabricating information or citations, facilitating acts of dishonesty by others, having unauthorized possession of examinations, submitting work of another person or work previously used without informing the instructor, or tampering with the academic work of other students. Any for of scholastic dishonesty is a serious academic violation and will result in a disciplinary action. |
| **Students with Disabilities** | Reasonable accommodations will be made for students with verifiable disabilities. |
| **Safety Issues**  | The course does not require any special safety precautions. |
| **Flexibility** | Circumstances may arise during the course that prevents the instructor from fulfilling each and every component of this syllabus; therefore, the syllabus is subject to change.  Students will be notified prior to any changes.  |