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**Department of ... Dams and Water Resources Engineering**

**College of … Engineering**

**Salahaddin University – Hawler**

**Subject: Irrigation Engineering I**

**Course Book – 3rd Yeas / 1st Semester**

**Lecturer's name: MSc, Khalil Karim HamadAmeen**

**Academic Year: 2020 -2021**

**Course Book**

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| **1. Course name** | **Irrigation Engineering I** |
| **2. Lecturer in charge** | **Khalil Kareem** |
| **3. Department/ College** | **Dams and Water Resources/ College of Engineering** |
| **4. Contact** | **e-mail:** khalilbrz@yahoo.com**Tel: (**07504645513**)** |
| **5. Time ( hr. / week )** | **Theory: 2** **Tutorial: 1**  |
| **6. Office hours** | **As per time table** |
| **7. Course overview:**Irrigation is the controlled application of water to croplands.  Its primary objective is to create an optimal soil moisture regime for maximizing crop production and quality while at the same time minimizing the environmental degradation inherent in irrigation of agricultural lands.ORIrrigation is the application of water to the soil to supplement natural precipitation and provide an environment that is optimum for crop production. Well Irrigated crops produce more food:1. Increase in Crop Yield
2. Protection from femine
3. Cultivation of superior crops
4. Elimination of mixed cropping:
5. Economic development
6. Hydro power generation
7. Domestic and industrial water supply:
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| **8. Course Objective:**Course objective give information about Irrigation engineering and relation between water and soil and studies soil texture and their equations and find amount of water required to add to soil and studies flow water into and through soil. The course give students how to design irrigation channels and their classification and factor affecting on their design and crop water requirement and water use efficiency and studies methods of irrigation and benefits and defects for each methods.Understand the hydrologic cycle, principles and processes necessary to effectively manage water resources through well designed irrigation systems.Apply appropriate techniques and analyses to the effective design of both irrigation systems. |
| **9. Student's Obligation*** Regular attendance is required according to the university rules.
* The use of mobile phone during the class is prohibited.
* Only the students who are officially enrolled can attend the class, guests and children are not admitted.
* Daily participation and conducting assignments are required.
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| **10. Forms of Teaching** Different forms of teaching will be used to reach objectives of the course: worksheet will be designed to let the chance for practicing on several aspects of the course in the classroom.  To get the best of the course, It is suggested that you attend classes as much as possible, read the required lectures, teaching notes regularly as all to them are foundations for the course Lectures are for supporting and not for submitting the reading material including the hand-outs. Try as much as possible to participate in classroom discussions preparing the assignment given the course.  |
| **11. Assessment Scheme****Exams:****Students must submit the following exams and quizzes:****- Mid-term Exam 30/40****- Quizzes & Class Participation 10/40****- Final Exam 60/100‌** |
| **12. Course Reading List:****- " Irrigation and Water Resources Engineering " , 2005 , by G. L. Asawa.** **- " Water Resources Engineering " , 2005 , by Larry W. Mays.****- " Irrigation , Water Power and Water Resources Engineering " , by Arora.****- " irrigation principles and practices " , by Hansen** |
| **26 Weeks: From the 15th of October to 15th of May** |
| **1st Week** | Introduction  |
| **2nd Week** | Basic soil relation, soil texture. |
| **3rd Week**  | Basic soil relation, soil texture. |
| **4th Week** | Basic soil relation, soil texture. |
| **5th Week** | Flow of water into and through soils. |
| **6th Week** | Flow of water into and through soils. |
| **7th Week** | Infiltration. |
| **8thWeek** | Infiltration. |
| **9th Week** |  Crop water requirement . |
| **10th Week** | Crop water requirement . |
| **11th Week** | When to irrigate and how much water to apply . |
| **12th Week** | When to irrigate and how much water to apply . |
| **13th Week** | Water use efficiency .  |
| **14th, 15th, 16th**  | Water measurement structures . Classification and planning of irrigation and drainage . |