#### Course Title: Agricultural engineering (fundamentals)

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| **University** | **Benha** |
| **Faculty** | **Faculty of Agriculture** |
| **COURSE SPECIFICATIONS:** |
| Program of which the course is given | Agric. Biotechnology |
| Major or Minor element of Program |  |
| Departments offering the Program |  |
| Department offering the course | Agric. And Biosystems engineering |
| Academic year / Level | Level 1/1st semester |
| Date of specification approval |  |

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| **A- BASIC INFORMATION**  |
| Title  | Agricultural engineering (fundamentals)  |
| Code | AE1101 |
| Credit Hours  | 28 |
| Lecture | 2 Hours / week |
| Practical | 2 Hours / week  |
| Total: |  28 Hours |

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| **B- PROFESSIONAL INFORMATION** |
| **1 – OVERALL AIMS OF COURSE** |
| This course provides the students with the application of engineering principles to problems in soil and water conservation, agricultural power units, machinery, agricultural electricity, structures, and animal environments. Material handling and processing of agricultural products will also be covered.  |

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| **2 – Intended Learning Outcomes of Course (ILOs)** |
| **A. Knowledge and Understanding:** |
| ***By the end of the course, students should:**** Know the basic knowledge about irrigation and drainage.
* Understand the principals of farm machinery, waste management, aqua cultural engineering and food process engineering.
* Get acquainted with the types of farm buildings and structures .
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| B. Intellectual Skills: |
| ***Successful completion of this course will allow students to:**** Solving the problems associated with the SI units and dimensions for agric. Engineering.
* Understand the suitable solutions for Biosystems engineering problems.
* Compare between the systems of agricultural engineering.
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| C. Professional and Practical Skills: |
| * Analysis of agricultural engineering problems.
* Using different applications in agricultural engineering parameters .
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| D. General and Transferable Skills: |
| * Working in teams for solving agricultural engineering problems.
* Using modern tools and applications.
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| 3. CONTENTS |
| **Topic** | **No. of hours** | **Lectures** | **Practical** |
| Dimensions and units | 4 | 2 | 2 |
| Irrigation and drainage | 4 | 2 | 2 |
| Principals of farm machinery | 4 | 2 | 2 |
| Principals of farm machinery | 2 | 1 | 1 |
| Food process engineering | 4 | 2 | 2 |
| Farm building and structure | 4 | 2 | 2 |
| Aquacultural engineering | 4 | 2 | 2 |
| Principals of waste management | 2 | 1 | 1 |

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| 4. TEACHING AND LEARNING METHODS |
| 1. The main subject areas are covered in the lectures (see syllabus Plan).
2. Several student seminar sessions give the opportunity for students to bring questions or discuss any aspects of the course with the tutor.
3. Students are given a topic to research in small groups which they report as an oral presentation. Collective feedback on the strengths and weaknesses of the presentations are provided.
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| 5. STUDENT ASSESSMENT METHODS |
| ***Students will be evaluated by attendance, fulfillment and effort in exercises and presentations, and examination grades:***1) Laboratory work: to assess the ability of students to understand and perform small laboratory exercises. |

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| 6. ASSESSMENT SCHEDULE |
| No | AssessmentAssessment | **Week** |
| 1 | Periodical exam  | 3,7 |
| 2 | Practical exam | 12 |
| 3 | Oral exam | 13 |
| 4 | Final exam | 14 |

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| 7. WEIGHTING OF ASSESSMENT |
| No | AssessmentAssessment | **%** |
| 1 | Periodical exam  | 15% |
| 2 | Practical exam | 15% |
| 3 | Oral exam | 10 % |
| 4 | Final exam | 60 % |
| TOTAL | 100 % |

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| 8. LIST OF REFERENCES |
| Yadav, S.N. 2011. Agricultural Engineering: Fundamentals and applications. Biotech Books, Vedamb Books Ltd. New Delhi, India. <http://books.google.com.eg/books?id=E1JYAAAAMAAJ&q=Agricultural+Engineering&dq=Agricultural+Engineering&hl=en&sa=X&ei=IHPpUtClCojY7AbI6IHoCA&ved=0CDEQ6AEwAQ> 1. **Bello, S.R. 2012.** [Agricultural engineering: Principles and practice](http://www.amazon.com/Agricultural-Engineering-Principles-Practice-Volume/dp/1479316148/ref%3Dpd_sim_sbs_b_1).Create Space Independent Publ. Platform. Amazon, London, UK. <http://books.google.com.eg/books?id=uJvu_qnUKFsC&pg=PA64&dq=Agricultural+engineering:+Principles+and+practice&hl=en&sa=X&ei=OXPpUqzxPOiJ7AaA2YD4Cw&ved=0CDsQ6AEwAw#v=onepage&q=Agricultural%20engineering%3A%20Principles%20and%20practice&f=false>
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| 9. FACILITIES REQUIRED FOR TEACHING AND LEARNING |
| 1. White boards – data-show and stationary.. etc.
2. Teaching room/hall.
3. Computers.
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| **Course Coordinators:**  | **Prof. Dr. Montasser Awad****Prof. Dr. Mohamed Tohamey** |
| **Date: / / 2015** |