#### Course Title: Integrated Pest Control

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| **University** | **Benha** |
| **Faculty** | **Faculty of Agriculture** |
| **COURSE SPECIFICATIONS:** |
| Programof which the course is given | Agricultural Biotechnology |
| Major or Minor element of Program | Minor |
| Departments offering the Program | Plant Protection |
| Department offering the course | Plant Protection |
| Academic year / Level | **Level 3 First semester** |
| Date of specification approval |  |

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| **A- BASIC INFORMATION**  |
| Title  | Integrated Pest Control  |
| Code | PP 0404 |
| Credit Hours  | 3 unite |
| Lecture | 2 Hours / week |
| Practical | 2Hours / week  |
| Total: | 56Hours |

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| **B- PROFESSIONAL INFORMATION** |
| **1 – OVERALL AIMS OF COURSE** |
| * To define the student the importance of the integrated pest management (IPM) and its advantages.
* To know the student the problems of repeated use of pesticides, control means and acceptable pest levels.
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| **2 – Intended Learning Outcomes of Course (ILOs)** |
| **A. Knowledge and Understanding:** |
| ***By the end of the course, students should:**** Understanding the different between traditional pest control and integrated pest control.
* provides students with knowledge on management of integrated pest control which includes a range of practices to control or suppress pest population below the economic injury level.
* Understanding the different between safe pesticides and Hazardous pesticides to human health and environment.
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| B. Intellectual Skills: |
| ***Successful completion of this course will allow students to:**** Solve the problems for the pest resistance to pesticides.
* Understand the timing of integrated pest control means.
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| C. Professional and Practical Skills: |
| * Determining the type of pests and their level of the injury.
* Using control means such as tools of spraying and dusting and insect traps.
* using the best application methods to minimize the risk of pesticides to human health and environment.
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| D. General and Transferable Skills: |
| * Determining the type of pests and their level of the injury.
* Using control means such as tools of spraying and dusting and insect traps.
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| 3. CONTENTS |
| **Topic** | **No. of hours** | **Lectures** | **Practical** |
| Introduction: Integrated pest management (IPM) and its advantages. what is the problems of repeated use of pesticides. | 4 | 2 | 2 |
| Identification, Inspection, survey of insect pests | 4 | 2 | 2 |
| Monitoring of targeted pests and acceptable pest levels. Injury levels and economic threshold of infestation. | 4 | 2 | 2 |
| Preventive practices | 4 | 2 | 2 |
| Control means (Mechanical, Biological, Animal and Behavioral). | 4 | 2 | 2 |
| Predacious and Parasitic insects and how to using in biological control  | 8 | 4 | 4 |
| Parasitic mites families(e.g. Pymotidae, Acarophaenacidae). | 4 | 2 | 2 |
| Entomopathogenic nematoda (families: Mermithidae, Steinernematidae, Heterorhabditidae) and Mass production technology. | 4 | 2 | 2 |
| Pesticides as a final option in the integrated pest management | 4 | 2 | 2 |
| Formulation and storage technology | 4 | 2 | 2 |
| Application of commercial products.Pheromones in pest management and resistant to them.Commercial phormones:  | 8 | 4 | 4 |
| Bait formulation for rodents and snails | 4 | 2 | 2 |
| Total  | 56 | 28 | 28 |

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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. mid – term exam to assess knowledge , understanding and intellectual skills
2. oral exam to assess knowledge , understanding and intellectual skills
3. practical examination to assess professional and practical skills
4. Final – term examination to assess knowledge , understanding and intellectual skills
5. Semester work to assess general and transferable skill
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| 6. ASSESSMENT SCHEDULE |
| No | AssessmentAssessment | **Week** |
| 1 | mid – term examination  | 7 |
| 2 | oral examination  | 15 |
| 3 | Periodical exam | 15 |
| 4 | Final-termexamination | 16 |

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| 7. WEIGHTING OF ASSESSMENT |
| No | AssessmentAssessment | **%** |
| 1 | mid – term examination  | 15% |
| 2 | oral examination  | 10% |
| 3 | Periodical exam | 15 % |
| 4 | Final-termexamination | 60 % |
| TOTAL | 100 % |

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| 8. LIST OF REFERENCES |
| **References:**1. [**Dyck**](http://www.amazon.co.uk/s/ref%3Dntt_athr_dp_sr_1?_encoding=UTF8&field-author=V.A.%20Dyck&search-alias=books-uk&sort=relevancerank)**, V.A.,** [**Hendrichs**](http://www.amazon.co.uk/s/ref%3Dntt_athr_dp_sr_2?_encoding=UTF8&field-author=J.%20Hendrichs&search-alias=books-uk&sort=relevancerank)**, J. and**  [**Robinson**](http://www.amazon.co.uk/s/ref%3Dntt_athr_dp_sr_3?_encoding=UTF8&field-author=A.S.%20Robinson&search-alias=books-uk&sort=relevancerank)**, A.S. 2005**. Sterile Insect Technique: Principles and Practice in Area-Wide Integrated Pest Management, Springer, London, UK.

<http://books.google.de/books?id=-vOLhFewchoC&printsec=frontcover&dq=Sterile+Insect+Technique&hl=en&sa=X&ei=7UD3Uo3VFIPPtAa0h4GwDw&ved=0CDcQ6AEwAA#v=onepage&q=Sterile%20Insect%20Technique&f=false>1. **Panizzi, A.R., 2012.** Bioecology & Insert Nutrition for Integreted pest Management CRC, Press, Inc.

<http://books.google.de/books?id=NqzcD2r3jBYC&pg=PA3&dq=Bioecology+%26+Insert+Nutrition+for+Integrated+pest+Management&hl=en&sa=X&ei=qgcBU6-BD-Gt4ATryIDwBg&ved=0CDoQ6AEwAA#v=onepage&q=Bioecology%20%26%20Insert%20Nutrition%20for%20Integrated%20pest%20Management&f=false> 1. **Radcliffe, E.B., Hutchison, W.D. and Concelado, R.E. 2008.** Integrated pest management: Concepts, tactics, strategies and case studies. Cambridge Univ. Press, UK.

<http://books.google.de/books?id=xjhr2M1H_9IC&printsec=frontcover&dq=Integrated+pest+management&hl=en&sa=X&ei=AUH3UpugLYbctAb2gIHIDg&ved=0CC4Q6AEwAA#v=onepage&q=Integrated%20pest%20management&f=false> |

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| 9. FACILITIES REQUIRED FOR TEACHING AND LEARNING |
| 1. Teaching aids/ materials: e.g. boards – overhead projector – data-show projector – stationary.. etc.
2. Teaching room/hall.
3. Computers.
4. Facilities for site visits etc., [www.pesticides.gav.uk](http://www.pesticides.gav.uk)which are necessary for teaching the course.
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| **Course Coordinators:**  | **Prof. Dr. Mohamed Mohamed Azab****Prof. Dr. Safaa Mahmoud Halawa** |
| **Date: / / 2015** |