# Module (Course Syllabus) Catalogue

# 2023-2024

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| **College/ Institute** | **Khabat Technical Institute** | |
| **Department** | **Medicinal Plants Production - Evening** | |
| **Module Name** | **Seed Science** | |
| **Module Code** | **SES303** | |
| **Degree** | **Technical Diploma** ■ **Bachler** ☐<br>**High Diploma** ☐ **Master** ☐ **PhD** ☐ | |
| **Semester** | **Third** | |
| **Qualification** | **Master** | |
| **Scientific Title** | **Lecturer** | |
| **ECTS (Credits)** | **6** | |
| **Module type** | **Prerequisite** ☐ **Core** ■ **Assist.** ☐ | |
| **Weekly hours** | | |
| **Weekly hours (Theory)** | **(1) hr Class** | **(2) Total hrs Workload** |
| **Weekly hours (Practical)** | **(3) hr Class** | **(4.5) Total hrs Workload** |
| **Number of Weeks** | **12** | |
| **Lecturer (Theory)** | **Bilal Ibrahim Muhammed** | |
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| **Lecturer (Practical)** | Bilal Ibrahim Muhammed<br>Zhyan Hamed Ahmed | |
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| **Websites** | **https://epuit.net/cbook/portal/login.php** | |

# Course Book

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| **Course Description** | The student will investigate the fundamental concepts of seed science from an approach and participate in a laboratory, storage, and field that demonstrate this study. The course is for students studying agriculture. |
| **Course objectives** | □ To impart basic knowledge of seed development and its structures.<br>□ To appraise students with its relevance to production of quality seed. |
| **Student's obligation** | Students are asked to do mandatory the following duties during the 12 weeks of the semester:<br>1- Quiz.<br>2- Weekly practical report.<br>3- Homework.<br>4- Seminars.<br>5- Semester report.<br>6- Lab. activity. |
| **Required Learning Materials** | Computer, PowerPoint, Data show, white board,<br>field and laboratory |
| **Specific learning outcome:** | 1. Learn the meaning of seed, its structure, development and maturation and their importance in crop production<br>2. students will acquire knowledge and basic principles related to quality seed<br>production of varieties and hybrids in agricultural and horticultural crops<br>3. To promulgate knowledge about mechanism involved in dormancy and stress management for quality seed production<br>4. To initiate basic methods and principle related to seed quality testing and seed standards<br>5. To disseminate the knowledge on seed laws related to quality control.<br>6. To set forth basic knowledge on various processing operations and principals involved in successful seed storage. |

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| **Course References:** | 1- Shirley Doy, Seed Science and Technology, 2017 White Word Publications.<br>2- Nema, N.P. 1986. Principles of Seed Certification and Testing. Allied Publishers, New Delhi.<br>3- Agarwal, R.L. 1997. Seed Technology. Oxford & IBH, New Delhi.<br>4- Copland, L.O. & McDonald, M.B. 1996. Principles of Seed Science and Technology. Kluwer Academic Publishers, New York.<br>5- McDonald, M.B. & Copeland, L.O. 1997. Seed Production: Principles and Practices. Chapman & Hall, New York. |

| Course topics (Theory) | Week | Learning Outcome |
|---|---|---|
| **Introduction to seed science** | **1** | |
| **Principles of Seed Production** | **2** | |
| **Seed Quality Control** | **3** | |
| **Seed Industries** | **4** | |
| **Seed Priming** | **5** | |
| **Seed Processing** | **6** | |
| **Seed Production Techniques** | **7** | |
| **Seed classes** | **8** | |

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| **Seed demand forecasting and planning for certified** | **9** | |
| **seed certification** | **10** | |
| **Seed viability** | **11** | |
| **Seed production** | **12** | |
| **Practical Topics** | **Week** | **Learning Outcome** |
| **Seed development** | **1** | |
| **Hybrid seed production** | **2** | |
| **Seed Physiology** | **3** | |
| **Seed vigor** | **4** | |
| **Seed Quality testing** | **5** | |
| **Seed priming (practice test in laboratory)** | **6** | |
| **Seed Storage** | **7** | |
| **Seed drying** | **8** | |
| **Seed Cleaning** | **9** | |
| **Seed marketing** | **10** | |
| **Seed production in monocot** | **11** | |
| **Seed production in dicot** | **12** | |

## Questions Example Design

**Q1/** Define the Seed priming, testing and drying.

Q2/ What are the steps of planning for seed certified?

Q3/ Write the different between sexual and asexual hybrid seed production.

Q4/ Why is it important to know the seed quality testing?

Q5/ Write the classification of seed production.

## Extra notes:

## External Evaluator: