## UNIVERSITY OF SARGODHA

## COURSE OUTLINE

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| **Course Title** | **Breeding Minor Crops** | | | | | |
| **Course Code** | PBG-404 | | | | | |
| **Credit Hours** | 2(1-1)  Theory per week  Lecture: 1 | | | | | |
| **Pre-Requisite** | Nil | | | | | |
| **Category** | Agriculture-Plant Breeding and Genetics | | | | | |
| **Course Introduction** | This course is a graduate level of course about minor crops cultivated in Pakistan. The course aim is to elaborate the importance of various minor crops and their uses. It also focuses on breeding methods which are used to improve these crops. The course also explains hybrid seed production and it scope. | | | | | |
| **Learning Outcome** | The students will be able to understand:   * Significance and status of minor crops * Breeding objectives of minor crops * Breeding methods in minor crops | | | | | |
| **Syllabus** | * Introduction and importance of minor crops: tea, guar, sesame, linseed, groundnut, tobacco and other local crops. * Breeding objectives, methodologies and * Selection procedures; recurrent selection, * General and specific combining ability. * Breeding for biotic and abiotic stresses * Heterosis and its exploitation * Hybrid seed production * Processing and value addition in minor crops. | | | | | |
| **Text Books** | 1. Sleper, D.A and J.M. Poehlman.2006. Breeding Field Crops. 4th ed. Iowa State University Press, Ames, USA. 2. Singh, B.D. 2003. Plant breeding: Principles and Methods. Kalyani Publisher, New Dehli India 3. Singh, P. 2003. Essentials of Plant breeding.Kalyani Publisher, New Dehli India . 4. Fundamentals of plant breeding and hybrid seed production   by RATTAN LAL AGRAWAL | | | | | |
| **Assessment Criteria** |  | **Sessional**  **(4)** | **Midterm**  **(6)** | **FinaI term**  **(10)** | **Practical**  **(20)** | **Total**  **(40)** |
| **Criteria** | **4** | **6** | **10** | **20** | **40** |
| **Result** |  | | | | |

Frame Work

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| Week | Topics and Readings | Weeks |
| 1. | Course Introduction etc, Introduction, Importance and breeding strategies of Tea | Week-One |
| 2. | Introduction, Importance and breeding strategies of Sesame | Week-Two |
| 3. | Introduction, Importance and breeding strategies of groundnut | Week-Three |
| 4. | Introduction, Importance and breeding strategies of Jojoba | Week-Four |
| 5. | Introduction, Importance and breeding strategies of Tobacco | Week-Five |
| 6. | Introduction, Importance and breeding strategies of olive | Week-Six |
| 7. | Introduction, Importance and breeding strategies of soybean | Week-Seven |
| 8. | Introduction, Importance and breeding strategies of guar | Week-Eight |
| 9. | Introduction, Importance and breeding strategies of linseed | Week-Nine |
| 10. | General and specific combining ability | Week-Ten |
| 11. | Breeding for drought stress | Week-Eleven |
| 12. | Breeding for drought stress | Week-Twelve |
| 13. | Breeding for heat stress | Week-Thirteen |
| 14. | Breeding for heat stress | Week-Fourteen |
| 15. | Hybrid Seed Production | Week-Fifteen |
| 16. | Presentations, Revision | Week-Sixteen |
| 17. | Presentations, Revision | Week-Seventeen |