

Devi Ahilya Vishwavidyalaya Indore (M.P.)

Department of Higher Education, Govt. of M.P.

Post Graduate Semester wise Syllabus

As recommended and Approved by Board of Studies D.A.V.V.

उच्च शिक्षा विभाग, म.प्र. शासन

स्नातकोत्तर कक्षाओं के लिये सेमेस्टर अनुसार पाठ्यक्रम
अध्ययन मण्डल देवी अहिल्या विश्वविद्यालय द्वारा अनुशंसित तथा अनुमोदित

Session (सत्र) 2019-20

M. Sc. Botany (Semester System)
Second Semester

Course PG 203:

Embryology and Reproduction of Angiosperm

85 + 15

- UNIT I: **Development and Structure of Stamens:** structure and development of anther (Microsporangium), micro-sporogenesis and micro-gametogenesis, role of tapetum, pollen development and gene expression, male sterility, sperm dimorphism, Nemec phenomenon and pollen development in Cyperaceae.
- UNIT II: **Development and Structure of Pistil:** Types, structure and Development of Ovule; Mega-sporogenesis and mega-gametogenesis; Embryosac haustoria; Organisation and structure of Monosporic, bisporic, tetrasporic and Pollen embryo sacs.
- UNIT III: **Pollination:** Mechanism, types and vectors. Pollen tube greet and guidance, Pollen Stigma interaction. Self Incompatibility: SSI and GSI (cytological, biochemical and molecular aspects).
- UNIT IV: **Embryogeny:** Double fertilization and triple fusion; development, types and significance of Endosperm; Storage proteins of endosperm and embryo; Embryogenesis in monocots and dicots; Polyembryony and parthenocarpy.
- UNIT V: **Dynamics of fruit growth:** Dynamics of fruit growth: Biochemistry and molecular biology of fruit maturation; Apomixis; Seed development, biochemical aspects and seed germination.

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Suggested Readings

1. Bhojwani, S.S. and Bhatnagar, S.P. 2000. The Embryology of Angiosperms (4th revised and enlarged edition). Vikas Publishing House, New Delhi.
2. Burgess, J. 1985. An introduction to Plant Cell Development. Cambridge University Press, Cambridge.
3. Fageri, K. and Van der Pijl, L. 1979. The Principles of Pollination Ecology. Pergamon Press, Oxford.
4. Fahn, A. 1982. Plant Anatomy. (3rd edition). Pergamon Press, Oxford.
5. Fosket, D. E. 1994. Plant Growth and Development. A Molecular Approach. Academic Press, San Diego.
6. Howell, S.H. 1998. Molecular Genetics of Plant Development, Cambridge University Press, Cambridge.
7. Leins, P., Tucker, S.C. and Endress, P. K. 1988. Aspects of Floral Development. J. Cramer, Germany.
8. Lyndon, R.F. 1990. Plant Development. The Cellular Basis. Unin Hyman. London.
9. Murphy, T. M. and Thompson, W. E. 1988. Molecular Plant Development. Prentice Hall, New Jersey.
10. Proctor, M. and Yeo, P. 1973. The Pollination of Flowers. William Collins Sons, London.
11. Raghvan, V., 1997. Molecular Embryology of Flowering Plants. Cambridge University Press, Cambridge.
12. Raghvan, V., 1999. Development Biology of Flowering Plants. Springer-verlag.
13. Houghton, A.W., 1953. Plant Morphology.
14. Bold, H.C., 1987. Plant Morphology.

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