



**AMITY UNIVERSITY**  
 ——— UTTAR PRADESH ———

### FORMAT FOR COURSE CURRICULUM

**Course Title:** AGRONOMY OF PULSES AND OILSEED CROPS

**Course Code:**

**Course Level:** PG

**Credit Units:** 4

L	T	P/S	SW/FW	No. of PSDA	TOTAL CREDIT UNITS
2	-	2	2	4	4

**Course Objectives:**

The objective of the course is to familiarize students about the agronomic practices of major pulses and oilseed crops.

**Pre-requisites:**

Basic and applied knowledge of agronomic practices of *Kharif* and *Rabi* pulse crops and oilseed crops

**Course Contents/Syllabus:**

	Weightage (%)
<b>Module I Importance of Pulses and Oil Seed Crops</b>	<b>15%</b>
<b>Descriptors/Topics</b>	
Role of pulse and oilseed crops in Indian agriculture. Causes of low yields of pulse and oilseed crops, and strategies for improving productivity. Biofertilizers in pulses and leguminous oilseeds. Significance and mechanism of Biological	

Nitrogen Fixation, mechanisms of residual effects, nutrient cycling and physical properties of soil.	
<b>Module II Pulse Crops</b>	<b>30%</b>
<p><b>Descriptors/Topics</b></p> <p>Origin, history, production trends, adaptability, classification, varietal improvement, climate and soil requirements, cultural, nutritional, weed and water management, quality components for maximum production of <i>kharif</i> pulses - pigeonpea, greengram, blackgram, cowpea, mothbean, field bean, horsegram and rice bean.</p> <p>Origin, history, production trends, adaptability, classification, varietal improvement, climate and soil requirements, cultural, nutritional, weed and water management, quality components for maximum production of <i>rabi</i> pulses – chickpea, lentil, peas, frenchbean, and grass pea.</p>	
<b>Module III Oilseed Crops</b>	<b>35%</b>
<p><b>Descriptors/Topics</b></p> <p>Origin, history, production trends, adaptability, classification, varietal improvement, climate and soil requirements, cultural, nutritional, weed and water management, quality components for maximum production of <i>kharif</i> oilseeds - soybean, groundnut, sesamum, niger and castor.</p> <p>Origin, history, production trends, adaptability, classification, varietal improvement, climate and soil requirements, cultural, nutritional, weed and water management, quality components for maximum production of <i>rabi</i> oilseeds – rape seed and mustard, sunflower, safflower, and linseed.</p>	
<b>Module IV Improvement Strategies</b>	<b>20%</b>
<p><b>Descriptors/Topics</b></p> <p>Pulses and oilseeds in non-traditional areas and seasons. Physiological limitations for higher productivity in grain legumes; yield stability in pulses and oilseed crops. Non-monetary agro techniques for augmenting productivity of pulses and oilseed crops.</p>	

**Course learning outcome:**

Student will be able to:

- Comprehend the importance, scope and limitations of pulses and oilseed crop.
- Study the basic agronomic practices of *kharif* and *Rabi* pulses.

- Understand the basic agronomic practices of *kharif* and *Rabi* oilseed crops.

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**Pedagogy for Course Delivery:**

The course pedagogy will include lectures, discussion on applications of the topics covered.

**List of Professional Skill Development Activities (PSDA):**

- Identification & collection of plants and seeds of pulses and oilseed crops
- Fertilizer management in pulses and oilseed crops
- Identification of various weeds of pulses and oilseed crops
- Identification of various insects, pests and diseases of pulses and oilseed crops

**Lab/ Practicals details, if applicable:**

- Sowing methods vis-à-vis germination pattern in pulses and oilseeds.
- Seed inoculation with *Rhizobium* and phosphate solubilizing bacteria.
- Cultural operations for higher productivity of pulses and oilseeds.
- Yield attributes of pulses and oilseeds, and estimation of yield.
- Estimation of biological nitrogen fixation by legume crops. Determination of oil content in oilseeds, and computation of oil yield.
- Determination of protein content in pulses and computation of protein yield.
- Working out growth and intercropping indices. Estimation of quality parameters in pulses and oilseeds.
- Identification of major weeds, insect-pests and diseases of pulses and oilseed crops.
- Visit to oilseed and pulse processing industry, research and development institution aquatic situations.

**Assessment/ Examination Scheme:**

Theory L/T (%)	Lab/Practical/Studio (%)
75	25

**Lab/ Practicals details, if applicable:**

**Assessment/ Examination Scheme:**

Theory L/T (%)	Lab/Practical/Studio (%)
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100%	NA
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**Theory Assessment (L&T):**

Continuous Assessment/Internal Assessment (40%)					End Term Examination (60%)
Components (Drop down)	HA	Q	C	A	End Sem Exam
Linkage of PSDA with Internal Assessment Component, if any	PSDA-1 to 4		PSDA-1 to 4		
Weightage (%)	10	15	10	05	60

**Lab/ Practical/ Studio Assessment:**

Continuous Assessment/Internal Assessment					End Term Examination
Components (Drop down)	Q	Viva Voce	P	A	End Sem Exam
Weightage (%)	15	10	10	5	60

**Mapping Continuous Evaluation Components/PSDA with CLOs:**

Bloom's Level >	Remembering	Understanding	Applying and Analysing	Evaluating and Creating
Course Learning Outcomes	CLO1	CLO2	CLO3	CLO4
Assessment type/PSDA				
Assessment Component 1	✓		✓	
•		✓		
•	✓			
•	✓	✓	✓	✓
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•			✓	✓

Assessment Component 'n'	✓	✓		✓
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**Text Reading:**

**References:**

- Ali, M., Singh, B.B., Shiv Kumar and Dhar, V. 2004. *Pulses in New Perspective*. Indian Society of Pulses Research and Development, Kanpur, India.
- Asthana, A.N. and Ali, M. 1997. *Recent Advances in Pulses Research*. Indian Society of Pulses Research and Development, Kanpur, India.
- Jeswani, L.M. and Baldev, B. 1997. *Advances in Pulse Production Technology*. ICAR, New Delhi.
- Prasad, R. 2002. *Text Book of Field Crops Production*. ICAR, New Delhi.
- Sengupta, K. and Das, P.K. 2003. *Cultivated Annual Oilseed Crops in India*. Calcutta.
- Singh, G., Sekhon, H.S. and Kolar, J.S. 2005. *Pulses*. Agrotech Publishing Academy, Udaipur, India.
- Weiss, E.A. 2000. *Oilseed Crops*. Blackwell Science Ltd., Oxford, UK

**Additional Reading:**

**Any other Study Material:**