Faculty of Agricultural Sciences & Allied Industries

Rama University, Uttar Pradesh, Kanpur

(Vide U.P. Act No. 1 of 2014 as passed by State Legislature and recognized by UGC U/s 2 (f))

F.N.Agri./Dean/2025/ 717.1 Dated: 15/7/2025

NOTICE

This is to inform all concerned that Faculty of Agricultural Sciences & Allied Industries will be conducting a **"Board of Studies (BOS)"** meeting on **18th July 2025**.

All Board of Studies (BOS) members are requested to kindly make it convenient to attend.

(Dr. Aneeta Yadav)
Dean
Faculty of Agricultural Sciences
& Allied Industries

Dean
Faculty of Agricultural Sciences and Allied Industries
Rama University, Mandhana, Kanpur (U.P.)

Rama University Uttar Pradesh, Kanpur

Ref: RU/FASAI/BOS/2025/ **Dated:** 18/7/2025

Faculty of Agricultural Sciences & Allied Industries

Minutes of Meeting

Boards of Studies

A meeting of Boards of Studies for **B.Sc. (Agriculture), M.Sc. Agriculture (Genetics and Plant Breeding/Agronomy/Horticulture (Fruit Science & Vegetable Science) /Soil Science/Plant Pathology/Agriculture Extension/ Agricultural Economics) and Ph. D. in specialized fields of Agriculture** held on 18th July 2025 at 11:00 AM in Dean Office. The following members were present:

1. Dr. Aneeta Yadav - Chairperson
2. Dr. Vinay Joseph Silas - Member
3. Dr. Kartikay Bisen - Member
4. Dr. Ravi Kesh Pal - Member
5. Dr. Raghvendra Singh - Member
6. Dr. Anuj Tiwari - Member
7. Dr. Ashish Srivastava - Member

The following members agreed to review the minutes.

1. Dr. D. D. Yadav - External Member
2. Dr. U. K. Tripathi - External Member
3. Dr. Anand Singh - External Member
4. Dr. A. K. Singh - External Member
5. Dr. Debjyoti Sen Gupta - External Member

6. Dr. A. K. Pal - External Member

7. Dr. Satendra Kumar - External Member

8. Dr. O. P. Singh - External Member

Agenda:

1. **Action Taken Report (ATR) on Minutes of Previous Meeting.**

   The BOS committee confirmed the minutes of the BoS meeting held on **19th September, 2024.**

2. Review of the existing programs and their curricula

S. No.	Item No.	Existing	Recommendation /Action Taken
1.	**RU/FASAI/BOS/2025/001** To review the persisting syllabus of B. Sc. Ag.& M. Sc. Ag. and to recommend the changes required for the academic session 2024-25. The incorporation of attainment matrix with reference to PO and CO.	ICAR Vth Dean's Committee.	The committee recommended tofollow the persisting syllabus as per the ICAR Vth Dean's Committee. The incorporation of attainment matrix with reference to PO and CO may be introduced as per the need, in the academic session 2025-26 for UG program towards excellence in teaching learning evaluation.
2.	**RU/FASAI/BOS/2025/002**Panel of External Examiners	-	Panel of external examiners for semester final exams as well as practical exams is submitted for approval
3.	**RU/FASAI/BOS/2025/002** To review the persisting syllabus of M.Sc. Ag & Ph.D. To recommend the change required for the academic session 2025-26.	-	The committee recommended to follow the persisting syllabus

3. Recommendation on New courses/Short term training

S. No.	Item No.	Feedback from Faculty/Student	Recommendation /Action Taken
1	**RU/FASAI/BOS/2025/003** To Consider incorporation of JeevanKaushal 2.0, IKS and NEP for the Academic session 2025-26	Based on the need and the relevance of the prescribed syllabus by ICAR	The committee recommended that the syllabus already covers the major aspects of NEP like multidisciplinary courses, continuous assessment, elective subjects as well as skill oriented concerns. In compliance with IKS, the subjects like Agricultural Heritage UGR 111 and other fundamental courses are already exists, hence can be continued for the Academic session 2025-26
2	**RU/FASAI/BOS/2025/004** To Consider the syllabus of Ph.D. (Agri. Extension) as a new programme for the Academic session 2025-26	Based on the subject demand and Query by students	The committee recommended the syllabus and programme to be run without any change for Academic session 2025-26 without any change.
3	**RU/FASAI/BOS/2025/005**Conduction of career oriented short term courses (30 Hours)	Training/ certificate based short term courses for developing practical skills is suggested	Few short term courses are proposed for enhancing the knowledge and skills of students. Any new trend based course apart from the mentioned titles may also be introduced as per the requirement: 1. "Hands on training on basic Plant tissue culture techniques" 2. "Analysis and testing for quality maintenance in seed production" 3. "Transforming Farming with DSR" 4. Any other

			trending and relevant topics as per the need of time.

4. **Consideration of the curricula of the new programs**

S. No.	Item No.	Feedback from Faculty/subject experts/Industries	Recommendation /Action Taken
1	**RU/FASAI/BOS/2025/006**Exposure visits (Industry and Institutes)	All the courses are already based on entrepreneurship skills, recent trends and practical based applications to enhance the knowledge of students.	Applicability of the courses will be thoroughly discussed along with exposure visits as per need of the subject.

5. Review of Teaching Process/Pedagogy

S. No.	Item No.	Existing	Recommendation /Action Taken
1	**RU/FASAI/BOS/2025/007**Enrichment in teaching Pedagogy for better understanding	Audio visible aids, Projectors, white board, Peaceful learning environment	Proper interaction with students, involve the students in training & learning program and experimental learning by doing principle must be adopted.

6. Result Analysis: --- Summary of Result Analysis of the students' performance in the previous semester examination was presented and it was suggested that the course instructors should conduct remedial classes for the students whose performance was not found satisfactory and the subjects where results are below standards.

7. Feedback Analysis: --- Analysis was performed based on summary of already collected feedback from students and the course instructors have been instructed for improvement in teaching pedagogy for better understanding of students in the cases where the feedback is below average.

8. Any other issue with the permission of the Chair: ---- No

The meeting concluded with a vote of thanks to the chair. Date of the Next Meeting: to be decided and conveyed later

Dr. Aneeta Yadav
(Chairperson)

Encl.: Recommended Evaluation scheme and Curricula (If modified) attached for consideration and approval.

CC:
1. Dean, Academic Affairs
2. Registrar Office

Rama University, Uttar Pradesh, Kanpur-209217

EVALUATION SCHEME

&

SYLLABUS

FOR

M.Sc. (Ag)

Genetics and Plant Breeding
2025-26

Faculty of Agricultural Sciences & Allied Industries,

Rama University, Kanpur-209217

RAMA UNIVERSITY UTTAR PRADESH, KANPUR

A meeting of the Board of Studies of the Ph.D. Genetics and Plant Breeding, Faculty of Agricultural Sciences & Allied Industries, Rama University Uttar Pradesh, Kanpur was held on 18th July 2025, 12:00 pm. The following members were present:

1.	Dr. Aneeta Yadav	Convener
2.	Dr. Vinay Joseph Silas	Member
3.	Dr. Syed Mohd Quatadah	Member
4.	Dr. Kartikay Bisen	Member
5.	Dr. Debjyoti Sengupta	External Member

The quorum of the meeting was complete.

Agenda of the meeting:

1. Assessment Criteria
2. Question Paper Format
3. Syllabus

The meeting resolved unanimously that attached Assessment Criteria, Question Paper Format and Syllabus are justified and approved.

Note: No changes have been suggested by the committee. Committee have

Convener

Signature: .....
Name : Dr. Aneeta Yadav
Date : 18/7/2025

Internal Members

Signature: 1..... 2.....
Name: Dr. Aneeta Yadav Dr. Kartikay Bisen
Date: 18/7/2025

External Members

Signature: 1.....
Name: Dr. Debjyoti Sengupta
Date: 18/7/2025

RAMA UNIVERSITY

Faculty of Agricultural Sciences & Allied Industries

ORDINANCE

For

M.Sc. (Ag) Department 2025-26 PROGRAMME

(All Streams)

1. Program Name & Code

- **Program Name:** Master of Science in Agriculture - **(Agronomy/Horticulture-Fruit. Sc./Veg. Sc./Soil Science/Plant Pathology/Genetics & Plant Breeding/Agricultural Economics/ Agricultural Extension)**
- **Program Code:** M.Sc. (Ag) Agronomy-802, M.Sc. (Ag) Soil Sc.-805, M.Sc (Ag) Genetics & Plant breeding-806, M.Sc. (Ag) Extension Education-809, M.Sc. (Ag) Plant Pathology-808, M.Sc. (Ag) Economics-815, M.Sc. (Ag) Fruit Sc.-816, M.Sc. (Ag) Veg Sc.-817.

2. Eligibility Criteria

- The candidate must have successfully completed a **B.Sc. Agriculture** or an equivalent degree in Agriculture or related discipline from a recognized University.
- Minimum aggregate marks required: **55%** for General/OBC candidates and **50%** for SC/ST candidates (or as per Government/University norms).
- Admission preference will be given to candidates qualifying **ICAR/UPCATET/CUET** and University-conducted entrance tests.

3. Admission Procedure

- Admission will be made strictly on the basis of **merit in the entrance examination** conducted by Rama University RUET
- Reservation of seats will be as per the Government of Uttar Pradesh/University norms.
- Final admission is subject to verification of original documents and fulfillment of eligibility criteria.

4. Duration of Program

- **Normal Duration:** 2 academic years (4 semesters) of full-time study.

5. Maximum Duration for Completion

- The maximum period allowed for completing the program is **4 academic years** from the date of admission.
- After this period, the student's enrollment shall stand automatically canceled unless special approval is granted by the University.

6. Medium of Instruction

- The medium of instruction and examination will be **English**.
- Use of scientific terms in Hindi is permitted for clarity in certain contexts.

7. Structure of the Program

- The program will be based on **ICAR-recommended postgraduate curriculum**, consisting of:
  - **Major Courses** (Core discipline specialization)
  - **Minor Courses** (Related discipline)
  - **Supporting Courses** (Interdisciplinary knowledge)
  - **Seminar Courses**
  - **Master's Research (Thesis)**
- Credit requirement for award of degree: **Minimum 55 credits** (Major: ~20–25 credits, Minor: ~8–10 credits, Supporting: ~5–6 credits, Seminar: 2 credits, Research: ~20–25 credits).
- The program shall also be followed by the **ICAR** as well as other **Central & State Agriculture University** for M.Sc. Agriculture

8. Marks/Credit Distribution

- **Sessional:** The internal assessments in theory conducted normally through two-tests and assignments,with **20 marks and 20** marks respectively. The internal assessments in practical subjects conducted with **50** marks The External assessments in practical subjects conductedwith **50** marks Sessional weightage shall be normally performed by the concerned teacher. Thus, total 50% internal assessment. While in case of only theory subjects, internal assessment conducted normally through two-tests and assignments,with **20 marks and 20** marks respectively and in case of only practical subjects, evaluation will be done for cumulative 50 marks based on Practical record, assignment, viva-voce etc. resulting in 50% internal evaluation.
- **Semester Examinations:** The semester final examinations conducted for summative evaluation of course.The duration of these examinations shall be 3 hours for theory and practical courses and total evaluation will be done for 50 % marks as external evaluation.
- **Seminar:** 100% internal evaluation.
- **Thesis:** Evaluated as per University guidelines with internal and external examiners.
- **Credit Calculation:** 1 credit = 1 hour theory/week OR 2 hours practical/week.

9. Evaluation Procedure

a. **Sessional:** The laboratory course sessional evaluations shall be performed continuously based on practicalperformed by a student. Such evaluation may involve periodic assessment of documentation of the practical exercise/experiment, precision of experiment etc. In the case of Project /Dissertation the Internal Assessment may be based on periodical progress report.

b. **Semester Examination:** The Semester Examination shall commence during the first week ofDecember/May for the Odd semester/Even semester courses, respectively.

c. **Appointment of Examiners:** Head of the department shall normally appoint the examiners for differentcourses, selecting at least two other than the concerned teachers, randomly for theory courses in each of the semesters. In case of Lab/Projects/Viva-Voce examinations there shall be one internal and one external examiner. A sizable panel of external examiners shall be approved by the BOS on annual basis to facilitate the appointment of external examiners.

d. **Moderation:** A committee duly constituted by BOS as follows, shall moderate the examination papers andshall have the right to improve / change the questions to a considerable extent:

i. Dean (Chairman)
ii. Head of the department (Convener)
iii. Three Faculty Members nominated by the Dean

f. Examination

- External theory (60%)
- External Practical (50%)
- Courses with Internal Theory and Practical
  Mid-term Exam & Continuous Evaluation (40%) + Practical (50%)
- Courses with only Theory
  Mid-term Exam (20%) + Assignment (20%)
- Courses with only Practical:
  (100%) Internal

- Paper to be set by external: HOD shall ensure the coverage of syllabus. If needed moderation can be done.

ii. Evaluation to be done internally by the faculty other than the Course Instructor. Syllabus of the concerned course shall be sent to the external examiner, who shall prepare the question papers. For practical, it is recommended that examination shall be conducted by course instructor(s) and one teacher nominated by HOD.

a. For non credit courses **'Satisfactory' or 'Unsatisfactory'** shall be indicated instead of the letter grade and this will not be counted for the computation of CGPA.

ii. **Transcripts (Format):**

Based on the above recommendations on Letter grades, grade points, OGPA and CGPA, the Higher Education Institutions may issue the transcript for each semester and a consolidated transcript indicating the performance in all semesters.

i. Review and Re-evaluation:

Review and re-evaluation of the answer sheets shall be as per the university rules.

10. Rules for Backlogs / Supplementary Exams

- A student failing in any course may appear for the **supplementary examination** within the permitted schedule.
- All backlogs must be cleared within the **maximum program duration**.
- A student who fails in thesis evaluation may be given one additional opportunity after incorporating suggested corrections, within the maximum duration limit.

11. Special Academic Requirements

- Successful completion and defense of **Master's Thesis** is mandatory for the award of the degree.
- Minimum **75% attendance** in each course is required to be eligible for examinations.

- Participation in **seminars, research methodology workshops, and departmental activities** is compulsory.

12. Other Specific Rules

- Students must adhere to the University's **Code of Conduct**.
- **Plagiarism check** is mandatory for thesis submission; acceptable similarity index will be as per University norms.
- Wearing prescribed **laboratory/field dress code** during practical work is compulsory.
- Ragging and use of unfair means in examinations are punishable as per University and State laws.

Faculty of Agricultural Sciences & Allied Industries

Rama University Uttar Pradesh, Kanpur
Course Detail and Evaluation Scheme
(Effective from the Session 2025-26)

M.Sc. (Ag.) GENETICS & PLANT BREEDING FIRST YEAR (SEMESTER-I)

S.N.	Subject Code	Subject Name	Period			Evaluation Scheme			Subject Total	Credit Hours
			L	T	P	CE	MTE	ETE		
Theory subjects										
1	MSG-101	Principles of Genetics	2	0	0	20	20	60	100	2
2	MSG-102	Principles of Cytogenetics	2	0	0	20	20	60	100	2
3	MSBT- 103	*Principles of Biotechnology	2	0	0	20	20	60	100	2
Practicals / Project										
4	MSG -151	Principles of Genetics	0	0	1	30	20	50	100	1
5	MSG – 152	Principles of Cytogenetics	0	0	1	30	20	50	100	1
6	MSBT -153	Principles of Biotechnology	0	0	1	30	20	50	100	1
Total			**6**	**0**	**3**	**150**	**120**	**330**	**600**	**9**

Faculty of Agricultural Sciences & Allied Industries

Rama University Uttar Pradesh, Kanpur

Course Detail and Evaluation Scheme

(Effective from the Session 2025-26)

M.Sc. (Ag.) GENETICS & PLANT BREEDING FIRST YEAR (SEMESTER-II)

S.N.	Subject Code	Subject Name	Period			EVALUATION SCHEME			Subject Total	Credit
			L	T	P	CE	MTE	ETE		
Theory subjects										
1	MSG-201	Principles of Plant Breeding	2	0	0	20	20	60	100	2
2	MSG-202	Principles of Quantitative Genetics	2	0	0	20	20	60	100	2
3	MSBT-203	*Biotechnology for Crop Improvement	2	0	0	20	20	60	100	2
4	MSG-204	**Basic Design of Experiments	2	0	0	20	20	60	100	2
Practical / Project										
5	MSG-251	Principles of Plant Breeding	0	0	1	30	20	50	100	1
6	MSG-252	Principles of Quantitative Genetics	0	0	1	30	20	50	100	1
7	MSBT-253	Biotechnology for Crop Improvement	0	0	1	30	20	50	100	1
8	MSG-254	Basic Design of ExperimentsLab	0	0	1	30	20	50	100	1
9	MSG- 255	Master Seminar	0	0	1	0	0	100	100	1
	MSG- 256	Master Research Synopsis	0	0	1	Satisfactory/ non-satisfactory				1
10	PGS 202	**Library and Information Services	0	0	1	30	20	50	100	1
Total			**8**	**0**	**7**	**230**	**180**	**590**	**1000**	**15**

Faculty of Agricultural Sciences & Allied Industries

Rama University Uttar Pradesh, Kanpur

Course Detail and Evaluation Scheme

(Effective from the Session 2025-26)

M.Sc.(Ag.) GENETICS & PLANT BREEDING SECOND YEAR (SEMESTER-III)

S.N.	Subject Code	Subject Name	Period			EVALUATION SCHEME			Subject Total	Credit
			L	T	P	CE	MTE	ETE		
Theory Subjects										
1	MSG- 301	*Cell Biology & Molecular Genetics	2	0	0	20	20	60	100	2
2	MSG- 302	Breeding for Biotic and Abiotic Stress Resistance	2	0	0	20	20	60	100	2
3	SST- 303	Principles and Practices of Seed Production	2	0	0	20	20	60	100	2
4	PPA- 301	Diseases of Field Crops	2	0	0	20	20	60	100	2
5	PGS- 301	History of Agriculture	1	0	0	20	20	60	100	1
Practicals / Project										
6	MSG- 351	Cell Biology & Molecular Genetics	0	0	1	30	20	50	100	1
7	MSG- 352	Breeding for Biotic and Abiotic Stress Resistance	0	0	1	30	20	50	100	1
8	MSG- 353	Principles and Practices of Seed Production	0	0	1	30	20	50	100	1
9	PPA- 351	Diseases of Field Crops	0	0	1	30	20	50	100	1
Total			**9**	**0**	**4**	**240**	**180**	**500**	**900**	**13**

Faculty of Agricultural Sciences & Allied Industries

Rama University Uttar Pradesh, Kanpur

Course Detail and Evaluation Scheme

(Effective from the Session 2025-26)

M.Sc.(Ag.) Genetics & Plant Breeding Second Year (SEMESTER-IV)

S.N.	Subject Code	Subject Name	Period			EVALUATION SCHEME			Subject Total	Credit
			L	T	P	CE	MTE	ETE		
Theory Subjects										
1	MSG-600	Master's Research (Research Work & Thesis)	0	0	2	Satisfactory/ non-satisfactory				20
Total			0	**0**	**2**					**20**

L-Lecture, T-Tutorial, P- Practical, CE- Continuous Evaluation, MTE-Mid Term Examination, ETE-End Term Examination

Evaluation Scheme:

- **Course without practical components**

For Continuous Evaluation (CE) is such as: 20 Marks

1 Overall class performance: 5 Marks

2 Assignments/Quiz / Seminar/Term paper /Project :15Marks

MTE - Mid Term Examination: 20 Marks

a. First Mid Term Examination: 10 marks

b. Second Mid Term Examination: 10 marks

ETE - End Term Examination: 60 Marks

- **Course with practical components only**

For Continuous Evaluation (CE) is such as: 30 Marks

Conduct / Perform/Execution /Practical File/ Viva-Voice

MTE - Mid Term Examination: 20 Marks

First Mid Term Examination: 10 marks

a. Second Mid Term Examination: 10 marks

ETE - End Term Examination: 50 Marks

*Denotes minor subjects

** Denotes basic supporting subjects

Convener

Signature: .....

Name : Dr. Aneeta Yadav

Date :

Internal Members

Signature: 1..... 2.....

Name: Dr. Syed Mohd Quatadah Dr. Vinay Joseph Silas

External Member

Signature: 1.....

Name: Dr. Debjyoti Sengupta

Course Learning Outcomes (CLO)

- Identify the area of research in field of Genetics and Plant Breeding.
- Develop a research problem and plan for further investigation.
- Propose research topic and objective of research work planned.
- Quote the available literature during development of research plan.
- Collect suitable review of literatures related to the planned work

Faculty of Agricultural Sciences & Allied Industries
Rama University Uttar Pradesh, Kanpur
(Department of Genetics and Plant Breeding)

Report on Feedback on Genetics and Plant Breeding by Industry and Stakeholders

Genetics and plant breeding play a vital role in addressing global challenges related to food security, agricultural sustainability, and climate change resilience. As such, it's crucial to gather feedback from industry stakeholders to understand their perspectives, needs, and expectations regarding genetics and plant breeding research, technologies, and applications. This report summarizes the feedback obtained from various industry representatives and stakeholders through interviews, surveys, and consultations.

1. Demand for Improved Traits: Industry stakeholders expressed a strong demand for crop varieties with enhanced traits such as yield potential, stress tolerance (e.g., drought, heat, pests), disease resistance, and nutritional quality. There is a growing need for genetics and plant breeding solutions that address specific challenges faced by farmers, including climate variability, pest outbreaks, and soil degradation.

2. Interest in Advanced Technologies: Industry representatives emphasized the importance of adopting advanced technologies in genetics and plant breeding, including genomic selection, marker-assisted breeding, gene editing, and high-throughput phenotyping. These technologies offer opportunities to accelerate breeding progress, enhance trait introgression, and develop tailored solutions for diverse agricultural environments.

3. Focus on Sustainability and Resilience: Stakeholders highlighted the importance of sustainability and resilience in crop breeding programs. There is a growing emphasis on developing environmentally friendly and resource-efficient crop varieties that minimize chemical inputs, conserve water, and promote soil health. Additionally, there is interest in breeding resilient crops capable of withstanding extreme weather events and adapting to changing climatic conditions.

4. Collaboration and Knowledge Exchange: Collaboration between academia, industry, and government agencies was identified as crucial for advancing genetics and plant breeding research and innovation. Industry stakeholders expressed interest in establishing partnerships with research institutions and breeding organizations to access cutting-edge technologies, genetic resources, and

expertise. There is also a need for greater knowledge exchange and technology transfer initiatives to facilitate the adoption of research findings and best practices by breeders and growers.

5. Regulatory and Market Considerations: Industry representatives highlighted the importance of navigating regulatory frameworks and market dynamics in genetics and plant breeding. There is a need for clear and transparent regulations governing the use of genetic technologies, including gene editing, to ensure safety, consumer acceptance, and market access. Additionally, there is interest in understanding consumer preferences, market trends, and value chain considerations to guide breeding priorities and product development efforts.

Conclusion:

The feedback obtained from industry stakeholders underscores the importance of genetics and plant breeding in addressing current and future challenges in agriculture. There is a strong demand for innovative breeding solutions that enhance crop performance, sustainability, and resilience while addressing regulatory, market, and societal considerations. Collaboration, technology adoption, and knowledge exchange will be critical for driving advancements in genetics and plant breeding that benefit farmers, consumers, and the environment.

BoS Chairman

Dean

Faculty of Agricultural Sciences & Allied Industries
Rama University Uttar Pradesh, Kanpur
(Department of Genetics and Plant Breeding)

Action Taken Report based on Feedback at BoS held on 18.07.2025

- Invited resource persons from industries were made to address the students.
- Visits and interaction with progressive farmers, Seed industries, Agribusiness personals, ICAR research stations to learn about the latest technologies.
- Students are conducting their trails in the campus for the research associated with the genetics and plant breeding.

BoS Chairman

Dean