

Masters of Science
PLANT MOLECULAR BIOLOGY AND BIOTECHNOLOGY (PMBB)
Department of Plant Molecular Biology
University of Delhi South Campus

Comments from Experts on the Revised syllabus

(1) Prof. S. K. Sopory (JNU, New Delhi)

From: **sudhir sopory** <sopory@hotmail.com>
Date: Wed, May 23, 2018 at 11:21 AM
Subject: Re: Revised syllabus of Plant Molecular Biology & Biotechnology (PMBB)
To: Paramjit Khurana <param@genomeindia.org>

Dear Prof. Paramjit Khurana

The revised syllabus that you have developed is appropriate in view of the strengths and specialization of the faculty members.

A few suggestions:

1. In some course do include a lecture on molecular evolution of plants
2. In course 801: include under hormones, strigolactone ; under seed development one can also take up discussion on fertilization and incompatibility ; would be nice to include a lecture on pattern formation and root development etc
3. in course 901: can include , Epitranscriptome concept ; also a full lecture on transposons (especially since discovered in plants)
4. in 804: a lecture on use of artificial intelligence in big data analysis
5. in 702: under nucleus one can include eu - and heterochromatin and something about Telomers and telomerases

I do not know in which course but one could teach something about cell to cell and organ to organ long distance signaling via plasmodesmata and phloem respectively. Concept of movement of proteins, RNA, microRNAs is gaining ground .

I wish I was that many years younger to have opted for some of your courses!

Best wishes and regards

Sudhir Sopory

(2) Dr. Arnab Mukhopadhyay, Staff Scientist, NII, New Delhi (Alumni)

From: **Arnab Mukhopadhyay** <arnab@nii.ac.in>
Date: Mon, May 28, 2018 at 3:24 PM
Subject: Re: Comments on Revised MSc course (PMBB)
To: head.pmb@gmail.com
Cc: Saurabh Raghuvanshi <saurabh@genomeindia.org>

Dear Saurabh

I quickly went over the course material . The syllabus is quite robust and well-designed, covering most of the basic biology and advanced topics. I have only a few comments:

- 1) The core course components should have the biosafety and radiation safety concepts. Right

now, they are in the elective- Imaging part.

2) The PMBB 0901 teaches the eukaryotic genome in the Semester III. However, you are taking the Bioinformatics and data informatics, that will require extensive understanding of the genome, in the Sem I and II. This may be looked into.

3) While having Stress Biology as an elective course is a great idea, the students should also get an exposure to stress biology in the main course. I did not see that. Also, organelle-specific stress response like mitochondrial and ER stress response should be incorporated in the basic cell biology itself. I did not see mention of protein folding etc. also.

Please get back to me if you need any clarification.

best regards

Arnab

Arnab Mukhopadhyay, Ph.D.

Staff Scientist

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Website: <http://www.nii.res.in/research/arnab-mukhopadhyay>

<https://sites.google.com/a/nii.ac.in/arnab/>

(3) Dr. Saloni Mathur, Staff Scientist, NIPGR, New Delhi (Alumni)

From: **Saloni Mathur** <saloni@nipgr.ac.in>

Date: Mon, May 28, 2018 at 1:04 PM

Subject: comments for course-work at PMBB

To: head.pmb@gmail.com

Dear ma'am,

The course looks appealing with balanced incorporation of different topics and suitably revised to include latest aspects. The provision of electives is a very welcome change since it gives an opportunity to the student to indulge deeply in a particular aspect. Further, the inclusion of hands-on training in the electives is very important as it will impart practical training to the students, which is much needed for any 'actual' understanding of the subject. Similarly, the open elective paper on topics required for analysis of large scale data and for future relevance like 'Data analytics and Biocuration' is also a good addition. However, it must include sufficient practical training as well. This can be easily done by providing practical oriented lectures.

best

Dr. Saloni Mathur

Staff Scientist III

National Institute of Plant Genome Research

Aruna Asaf Ali Marg

New Delhi-110067

India

(4) Ms. Harsha Samtani (PhD scholar, DPMB, UDSC)

From: **Samtani Harsha** <harshasimply.sam@gmail.com>

Date: Fri, May 25, 2018 at 9:08 PM

Subject: Comments regarding the new M.Sc Syllabus

To: head.pmb@gmail.com

Respected ma'am

I think the course is well structured according to the new guidelines. All the internal elective theory papers are very interesting. Papers like "Advanced Plant Imaging techniques" and "Small RNA Biology and Epigenetics" will help students to acquire specific practical skills and also will update them with recent upcomings in the field. Even the open elective course appears to be very informative and will provide students with both data analysis as well as computer programming skills. Overall, I feel the new syllabus has become more specialized now.

Regards

Harsha Samtani

(5). Ms. Shaloo Meena (PhD scholar, DPMB, UDSC)

From: **Shaloo Meena** <shaloomeena@gmail.com>

Date: Mon, May 28, 2018 at 11:17 PM

Subject: Regarding M.Sc. Syllabus

To: head.pmb@gmail.com

Respected Ma'am

I am writing this regarding to the syllabus of M.Sc. I feel that the syllabus has been nicely designed, it is complete and offers the students with large spectrum of plant molecular biology. Now a days, it is very important that a student should knows the concepts of the basic statistical methods used to conduct a research study. so,i would like to suggest that there should be a topic on biostats that emphasise on stats analysis of data and the different softwares that are available for statistics.

Thank you

Regards

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Shaloo Meena

Ph.D. Scholor

Response to Comments from Experts on the Revised syllabus

(1) Prof. S. K. Sopory (JNU, New Delhi)

The revised syllabus that you have developed is appropriate in view of the strengths and specialization of the faculty members. A few suggestions:

Comment: In some course do include a lecture on molecular evolution of plants

Response: *These aspects have been appended in the course.*

Comment: In course 801: include under hormones, strigolactone ; under seed development one can also take up discussion on fertilization and incompatibility ; would be nice to include a lecture on pattern formation and root development etc.

Response: *These aspects have been appended in the course.*

Comment: in course 901: can include , Epitranscriptome concept ; also a full lecture on transposons (especially since discovered in plants).

Response: *These aspects have been appended in the course.*

Comment: in 804: a lecture on use of artificial intelligence in big data analysis.

Response: *This aspect is already included in this paper*

Comment: in 702: under nucleus one can include eu - and heterochromatin and something about Telomers and telomerases.

Response: *These aspects have been appended in the course.*

Comment: I do not know in which course but one could teach something about cell to cell and organ to organ long distance signaling via plasmodesmata and phloem respectively. Concept of movement of proteins, RNA, microRNAs is gaining ground .

Response: *These topics have been suitably integrated in the syllabus*

(2) Dr. Arnab Mukhopadhyay, Staff Scientist, IIT, New Delhi (Alumni)

Comment: The syllabus is quite robust and well-designed, covering most of the basic biology and advanced topics. I have only a few comments:

The core course components should have the biosafety and radiation safety concepts. Right now, they are in the elective- Imaging part.

Response: *This aspect is covered while conducting the relevant practicals during the course.*

Comment: The PMBB 0901 teaches the eukaryotic genome in the Semester III. However, you are taking the Bioinformatics and data informatics, that will require extensive understanding of the genome, in the Sem I and II. This may be looked into.

Response: *The course on bioinformatics is very introductory in nature and does not require extensive knowledge of genome level data. These aspects of analysis are covered in the advanced paper in entitled 'Data analytics and Biocuration (PMBB804)'.*

Comment: While having Stress Biology as an elective course is a great idea, the students should also get an exposure to stress biology in the main course. I did not see that. Also, organelle-specific stress response like mitochondrial and ER stress response should be incorporated in the basic cell biology itself. I did not see mention of protein folding etc. also.

Response: The basic aspects of stress biology are introduced in the core paper on 'Agricultural Biotechnology (PMBB903)'

(3). Dr. Saloni Mathur, Staff Scientist, NIPGR, New Delhi (Alumni)

Comment: The course looks appealing with balanced incorporation of different topics and suitably revised to include latest aspects. The provision of electives is a very welcome change since it gives an opportunity to the student to indulge deeply in a particular aspect. Further, the inclusion of hands-on training in the electives is very important as it will impart practical training to the students, which is much needed for any 'actual' understanding of the subject. Similarly, the open elective paper on topics required for analysis of large scale data and for future relevance like 'Data analytics and Biocuration' is also a good addition. However, it must include sufficient practical training as well. This can be easily done by providing practical oriented lectures.

Response: The open elective paper will include a complete hands-on training approach wherein lectures and practical would be taken simultaneously in a computer lab.

(4). Ms. Harsha Samtani (PhD scholar, DPMB, UDSC)

Comment: I think the course is well structured according to the new guidelines. All the internal elective theory papers are very interesting. Papers like "Advanced Plant Imaging techniques" and "Small RNA Biology and Epigenetics" will help students to acquire specific practical skills and also will update them with recent upcomings in the field. Even the open elective course appears to be very informative and will provide students with both data analysis as well as computer programming skills. Overall, I feel the new syllabus has become more specialized now.

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Comment: I am writing this regarding to the syllabus of M.Sc. I feel that the syllabus has been nicely designed, it is complete and offers the students with large spectrum of plant molecular biology. Now a days, it is very important that a student should know the concepts of the basic statistical methods used to conduct a research study. so, i would like to suggest that there should be a topic on biostats that emphasise on stats analysis of data and the different softwares that are available for statistics.

Response: the basics of statistical analysis would be taken up in the paper on 'Data analytics and Biocuration (PMBB804)'.

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