

**Requirements in
Plant Physiology and Plant Molecular Biology (3MN24NAK06M)
MSc course**

at Dept of Plant Physiology and Plant Biochemistry
Szent István University
2016/17 autumn term

- The program starts on September 15 and concludes on December 15. Lectures will be given until November 10, practical classes will be held from November 17 onwards.
- All classes are scheduled on Thursdays from 11.00 to 13.45 h, in Room A118.
- Attendance at lectures is highly advisable, as not all topics are fully covered in the textbooks available.
- Studying downloadable material from the website of the Department is recommended. For further readings chapters of some textbooks covering parts of the lectures are indicated. More detailed information on these resources has been attached below.
- Laboratory practical training is obligatory, one out of the four occasions may be missed.
- A successful written examination on practical topics is required for admission to oral exam on topics of lectures. Dates will be negotiated for oral examination.

Budapest, September 15, 2016

Dr István Papp

Head of Dept of Plant Physiology
and Plant Biochemistry

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representative
of the students

Topics of lectures and practicals:

15th Sept Introduction to the Course

Transport systems in plants

22nd Sept Water relations of plants I. Papp
29th Sept Water relations of plants, Phloem transport I. Papp
6th Oct Mineral nutrition E. Bába

The regulation of plants' behavior

13th Oct Effects of light, Signal transduction I. Papp
20th Oct Plant hormones I. Papp
27th Oct Plant hormones I. Papp

The generative phase of plants' life

Flowering I. Papp
3rd Nov Flowering, Seed biology I. Papp
10th Nov Fruit biology I. Papp
17th Nov Practical 1 – *in vitro* techniques
24th Nov Practical 2 – Measuring proline level in water stressed plants
1st Dec Practical 3 – Coloring compounds in flowers and other plant parts
8th Dec Practical 4 – Determination of antioxidant capacity of fruits
15th Dec Written examination on topics of practicals
dates to be negotiated Oral examination on topics of lectures

Topics of oral examination:

Water relations of plants

Mineral nutrition

Phloem transport

Light as stress factor and as regulator

Temperature as life condition and stress factor

Signal transduction

Biology of plant hormones I – Hormones in general and Auxin

Biology of plant hormones II – Hormones other than Auxin

Flowering

Fruit biology

Seed physiology

Selected readings:

Downloadable material of the lectures

log in to the University online e-learning system at
<http://elearning.szie.hu/>
for downloadable pdf form of the lecture slides.

Chapters from textbooks

Water relations of plants	T&Z Chapter 3 + 4 p 33-65 T&Zw 3.5 – 8
Phloem transport	T&Z Chapter 10 p 193-220 T&Zw 10.1, 10.3
Signal transduction	Buchanan Chapter 18
Flowering	T&Z Chapter 24 p 559-590 T&Zw 25.2, 25.8 + Buchanan Chapter 19 1 st part
Seed physiology	Buchanan Chapter 19 2 nd part T&Zw 23.17 – 19
Fruit biology	lecture slides only

T&Z: eds Lincoln Taiz and Eduardo Zeiger– Plant Physiology 3rd Edition
Please note, that this edition is freely downloadable from several sources in the internet!

T&Zw: T&Z web topics at <http://5e.plantphys.net>

Buchanan: Biochemistry and Molecular Biology of Plants, Eds Buchanan and Gruissen