

2023/2024. ACADEMIC YEAR							
PROGRAM OF STUDY (FOR STUDENTS OF 1ST YEAR)							
Full name of the subject: Matematika gyógyszerészeknek							
Program: Undivided program (pharmaceutical)							
Schedule: full-time							
Short name of the subject:							
English name of the subject: Mathematics for Pharmacists							
German name of the subject: Mathematik für Pharmazeuten							
Type of registration: obligatory/obligatory elective/elective/criteria requirement							
Neptun code of the subject: GYKGYH271G1A							
Responsible Department: Semmelweis University, Department of Pharmacodynamics.							
Responsible tutor				Title, academic degree:			
László Tóthfalusi				professor,D.Sc.			
Contact information: - phone: +36 1 476 3600 - email: totlasz@net.sote.hu							
Name of the persons responsible for the teaching of the subject:				Title, academic degree:			
László Tóthfalusi				professor, D.Sc.			
Class per week:				Credit point(s):4			
Lectures: 2 hours Seminars: 2 hours							
Professional content, intent of acquirement and it's function in order to implement the goals of the program:							
Acquiring the basic pharmaceutical calculation skills, reviewing the mathematical apparatus used by other subjects, introducing the computer basics of modeling techniques useful in natural science research.							
Short description of the subject:							
The course aims to provide a comprehensive picture of the mathematical tools used in pharmaceutical sciences. From a mathematical point of view, it covers the following subject areas: elementary and linear algebra, mathematical analysis and numerical methods. During the exercises, the goal is to develop the numerical skills used in basic pharmacy practice, and to get to know the computer options used for mathematical calculations.							
Course data							
Recommended term	Contact hours (lecture)	Contact hours (practice)	Contact hours (seminar)	Individual lectures	Total number of contact hours /semester	Normal course offer	Consultations
.... semester						Autumn semester* Spring semester Both semesters (* Please underline)	--

Program of semester**

Topics of theoretical classes (pro week):

Week 1: Pharmacy calculations
Week 2: Sets, relations
Week 3: Functions I
Week 4: Functions II
Week 5: Linear algebra I
Week 6: Linear Algebra II
Week 7: Sequences, Limits
Week 8: Differentiation
Week 9: Applications of differentiation
Week 10: Integration
Week 11: Differential equations
Week 12: Two-variable functions, concept of partial derivative
Week 13: System of differential equations
Week 14: Computer applications

Topics of practical classes (pro week):

Week 1: Pharmacy calculations I. Algebraic tasks
Week 2: Use of the R programming environment to solve mathematical problems I.
Week 3: Representation and transformation of functions
Week 4: The R programming environment to solve mathematical problems II.
Week 5: Solving linear equations
Week 6: Linear regression
Week 7: Application of series and sequences
Week 8: Midterm 1
Week 9: Calculation of limit values. Differential calculus
Week 10: Application of differential calculus
Week 11: Applications of integral calculus
Week 12: Solving differential equations
Week 13: Midterm 2
Week 14: Retake midterm

Schedule of consultations:

Course requirements

Prerequisites:

None

Conditions of attending the classes, amount of acceptable absents, way of presentation of leave, opportunity for makeup:

Granting credit might be refused if more than 3 seminars are missed.
Absences can be made up in the class of another group.

The grading method; the conditions for getting the signature; the number, topic(s) and date(s) of the mid-term assessments, (reports, term tests), and the process in which they contribute to the final grade; and the possibility of their retake or their upgrading retake (as provided in §§ 25-28 of the STUDY AND EXAMINATION REGULATIONS):

<p>Number, topics and dates of tests during the semester, opportunities of makeup and improvement of results***:</p> <p>There will be two midterms in the 8th and 13th weeks and also a short quiz at each seminar. Results of the latter is aggregated at the end of the semester. The grade is calculated based on the average of the three percentile results as follows:</p> <p>< 50% - failed 50-70% - 2 71-80% - 3 81-90% - 4 >90% - 5</p> <p>In the 14th week, there will be a retake opportunity for those students whose average result below 60%.</p>
<p>Requirements of signature(as provided for in STUDY AND EXAMINATION REGULATIONS § 29):</p> <p>Participation in at least 75% of the practice sessions is mandatory. The retake quiz on the last week of the semester is needed if the average score is below 60%.</p>
<p>Number and type of projects students have to perform independently during the semester and their deadlines:</p> <p>none</p>
<p>Type of the semester-end examination: none</p> <p>Examination requirements: not applicable</p>
<p>Form of the semester-end examination: written*/oral*/combined examination/practical examination/the assessment of completing project work (according to STUDY AND EXAMINATION REGULATIONS 30.§)* (<i>Please underline</i>)</p> <p>not applicable</p>
<p>The possibility and conditions for offering grades:</p> <p>not applicable</p>
<p>A list of the basic notes, textbooks, resources and literature that can be used to acquire the knowledge necessary to master the curriculum and to complete the assessments, ****with exact description about which of them is required to acquire which part of the syllabus (e.g. description based on topics)), as well as the main technical and other aids and study aids that can be used:</p> <p>Joel Kilty, Alex M McAllister- Mathematical modeling and Applied Calculus Oxford University Press, 2018</p>
<p>In the case of a subject lasting more than one semester, the position of the teaching/research department ont he possibility of parallel enrolment and the conditions for admission****:</p> <p>yes*/no*/on and individual assessment basis* (<i>Please underline</i>)</p>
<p>The course description was prepared by: Laszlo Tothfalusi D.Sc.</p>