Week: April 20 – April 26, 2020
Topic: **Surface integral**

The below provided instructions should guide you through studying the topic. For additional explanation, clarification and extra material contact the Lecture/Tutorial teacher by email or the MS-Teams platform for live online consultation (see webpage for the link).
https://mat.nipax.cz/mathematics:mathematics_ii

This week we are entering the last big chapter of this semester. We will deal with surface integrals over parametrically defined surfaces. As for line integral, also the surface integral is defined in two kinds. We will start with the surface integral of scalar functions. This will be used in the second lecture for introduction of surface integral of vector functions. Some extra applications and additional theorems we will keep for the next week.

1) Read and learn the explanation from the textbook. Scanned pages can be found on the web page.
https://mat.nipax.cz/_media/mathematics:pages_84-103.pdf
Some of this material is for this week some for the next one.

Additional material and alternative explanation with many figures and exercises can be found in (free) online available textbooks
http://www.math.wisc.edu/~keisler/calc.html
namely chapter 13 http://www.math.wisc.edu/~keisler/chapter_13.pdf

https://openstax.org/books/calculus-volume-3/pages/1-introduction
namely chapter 6.5 - 6.8 https://openstax.org/books/calculus-volume-3/pages/6-introduction
https://openstax.org/books/calculus-volume-3/pages/6-6-surface-integrals

2) Take a look at the solved exercises from our collection of examples
questions: https://mat.nipax.cz/_media/surface_integral.pdf
complete solutions (in Czech): https://mat.nipax.cz/_media/19plosny-skalar.pdf
https://mat.nipax.cz/_media/plosny_integral_vektor_pole.pdf

3) As a training solve (at least) the following exercises.
607, 608, 610 – surface integral of a scalar function
662, 665, 668 – surface integral of a vector function

4) As a long term homework, to be delivered at your return to the school (at latest at the end of semester, prior getting the assessment from tutorials), solve all the surface integral exercises from sample exams from our webpage
https://mat.nipax.cz/_media/mathematics:ma2_exam_1_en.pdf
https://mat.nipax.cz/_media/mathematics:ma2_exam_2_en.pdf
https://mat.nipax.cz/_media/mathematics:ma2_exam_3_en.pdf

The delivery of all sample exams (completely and correctly solved) is necessary condition for obtaining the assessment from tutorials.

If you have some part of the homework done, ready to be checked and corrected by us, please scan it to PDF and send it to us by email.
Don't wait and leave it at the end of semester!