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| The title of the course | **Mathematical Analysis** |
| Faculty | [Faculty of Mechanical Engineering and Computer Science](http://eng.ath.bielsko.pl/index.php/faculties/gerg) |
| The level of studies | Engineer (BSc) |
| Semester | Winter / Summer |
| The form of classes and number of hours | Lecture/Project (15h/15h) |
| Language of instruction | English |
| The number of ECTS | 2 |
| Teacher | dr Tomasz Zgraja |
| The aims of the course  (maximum 500 characters) | The course is based on the lectures on mathematical analysis given in Polish during the 1st semester. The students become acquainted with English mathematical as well as scientific terminology. |
| The content of the course: main topics and key ideas | Elementary functions, limits and continuity, derivatives and their applications, indefinite integrals, definite integrals and their applications, series. |
| Didactics methods | A classical lecture supplemented with display and useful materials. |
| Course requirements | Exam and attendance. |
| Literature (basic and supplementary) | **B1.** W.K. Kosek, *Calculus for the Forgetful*, MagiMath Publishing, Colorado Springs 2007  **S1.** E.J. Herman, G. Strang, *Calculus Volume 1*, OpenStax Rice University, Houston 2018  <https://openstax.org/detail/books/calculus-volume-1>  **S2.** H.J. Keisler, *Elementary Calculus. An Infinitesimal Approach*, Creative Commons, Stanford, California 2012  <https://www.math.wisc.edu/~keisler/calc.html>  **S3.** W.F. Trench, *Introduction to Real Analysis*, Faculty Authored Books 7, Trinity University, San Antonio 2013  <http://digitalcommons.trinity.edu/mono/7/> |
| The effects of the education   * knowledge * skills * social competences | **Knowledge:** a student knows the basic concepts of one variable calculus as well as English mathematical and scientific terminology.  **Skills:** a student is able to differentiate functions of one variable and find their extrema and compute indefinite and definite integrals.  **Social competences:** working in a group, speaking in a foreign language. |