

NEW CLASSROOM MATERIALS FOR COMPUTER AIDED MATHEMATICS

Goal of the project

Mathematics is, educationally and as a discipline, strongly influenced by computers in a wide spectrum of modes and at all levels of comprehension. The project objective is to improve teaching practice, to find the ideal mix between classical methods and the computer based ones, to develop GeoGebra applications which are useful to understand abstract mathematical notions and to produce dynamic and interactive documents dedicated to the first-year mathematics courses.

Short description of the project

There are two main advantages of GeoGebra in classroom: - the dual graphic view capability, which allow to simultaneously visualize two graphical representations and facilitates the study of transformations of the complex plane and of complex variable functions; - the dynamic build in tools which allow to animate, to hide or reveal graphics and text.

Project implemented by

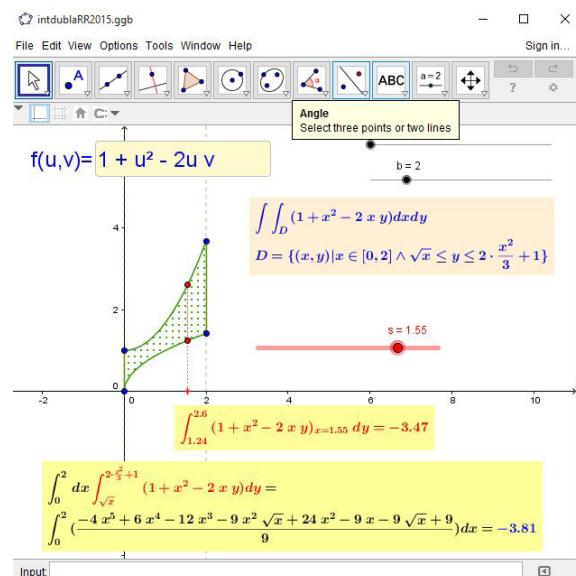
1. Department of Mathematics
2. GeoGebra Institute of UPT

Implementation period

26.06.2012-01.06.2016

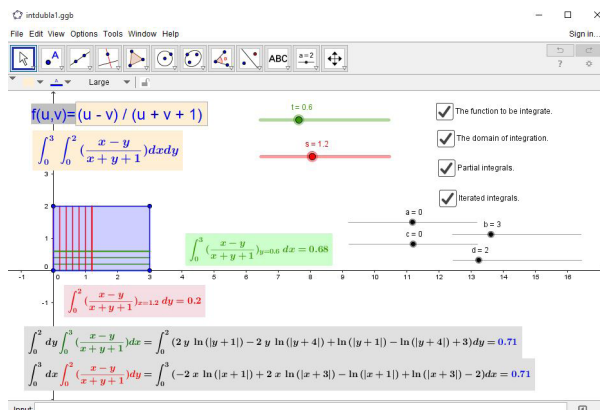
Main activities

- Weekly meetings with students at Geogebra Institute of UPT
- Support materials for life-long education of math teachers.
- Direct sharing of documents and teaching experiences over CEEPU Network
- Periodic uploads to GeoGebra Tube.



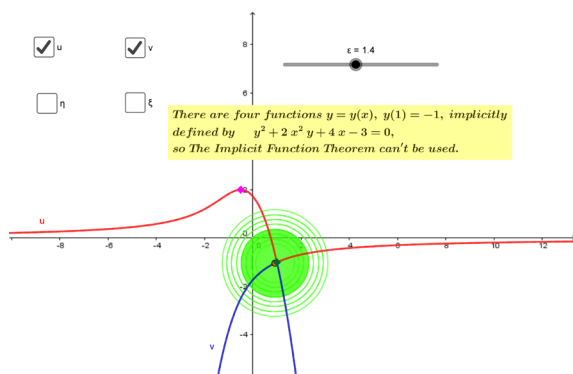
Results

- Applets for Calculus: Implicit functions, Random integral sum, Double integrals, Fourier series and Gibbs phenomenon, The Cubic root of complex numbers, Simple convergence versus uniform convergence.
- Applets for Linear Algebra and Geometry: Linear transformations in the real plane and 2x2 matrices; Dynamically generated 2D curves, About oriented curves.
- Applets for Applied Mathematics: Differential equations and stability, About Shannon sampling theorem.



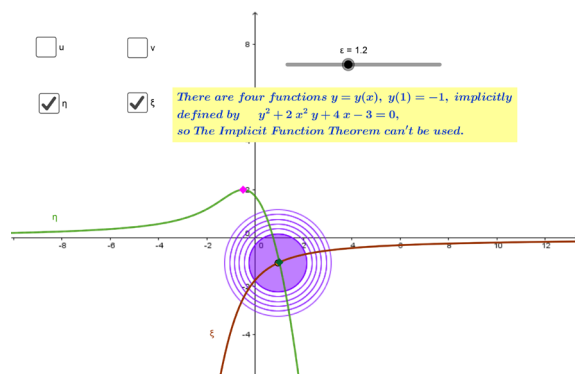
Applicability and transferability of the results

- All GeoGebra applets can be classified as didactical modeling and are appropriate to be utilized in the classroom.
- GeoGebra Institute of UPT is partner of CIII-HU-0028-08-1415 CEEPUS Network “Active Methods in Teaching and Learning Mathematics and Informatics” (Network coordinator PhD Péter Körtesi, University of Miskolc, Hungary).



Research Centre

GeoGebra Institute of UPT



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Research team

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