



UGC Partners

UGC is part of the *Graduate School of Natural Sciences* (GSNS) at *Utrecht University* a world-class research university in The Netherlands. We collaborate with *mastermath/WONDER*, the Dutch national education programmes in mathematics, and with the national research clusters *GQT* in Geometry and Quantum Theory and *DIAMANT*, in discrete mathematics, algebra and number theory. Furthermore, in Utrecht, the world-class Institute for Theoretical Physics *ITF* is our neighbour, and dual degrees with physics are possible. Over the past years, UGC members have attracted more than 16 million euro in external grants.

UGC Members

Erik van den Ban, Frits Beukers, Gil Cavalcanti, Gunther Cornelissen, Marius Crainic, Carel Faber, André Henriques, Martijn Kool, Johan van de Leur, Tobias Müller, Jaap van Oosten and Fabian Ziltener.

The '**Utrecht Geometry Centre**' ('UGC' for short) is a new programme (masters *and* PhD track) within the Utrecht Graduate School of Natural Sciences that was set up by geometers at the Mathematical Institute of Utrecht University in 2014 in order to consolidate a long tradition.

The UGC aims to cover a spectrum of modern 'Geometry' as broad as possible and to nurture its different components, as well their interaction with neighbouring fields such as logic, number theory and physics.

The Centre focusses on *algebraic and differential geometry*. Our specific research topics are moduli spaces, higher structures, spaces without classical points, and randomness in geometry.

We offer a **two-year master programme** and a **four-year PhD programme**. As a **master student** at UGC, you can compose your own dedicated portfolio in geometry (a course sampler is found below). You enrol in an "orientation" seminar, attend two master seminars, and receive training in research proposal writing. As a **PhD student** at UGC, you are appointed as University employee and, apart from doing research, teach tutorials. You follow a programme of advanced courses, and receive a yearly research allowance for travel and visitors.

We hope to see you soon at the Geometry Centre in Utrecht!



What students said...

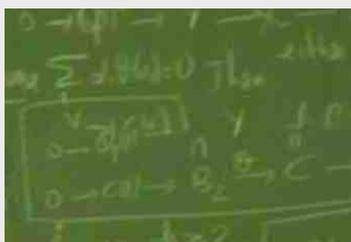
"I really enjoyed the master seminar, especially seeing connections between apparently separate fields. The extensive feedback after my lectures was very useful and constructive and helped me to improve my presentation skills." (*Peter Lombaers*, master student)

"I studied mathematics in Freiburg, before coming to Utrecht via an exchange programme. Two things struck me. One is the wide variety of courses to choose from. Another is the relative freedom to pursue one's own interests. I basically just picked the subjects I liked best." (*Sebastian Klein*, graduate student)

What others said...

"It is very rare, and laudable, that a group of high-quality researchers is willing to invest that much time in teaching the new generation"; "Students are expertly coached"; "The supervising concept compares favourably to other leading graduate schools in mathematics in Europe"; "The quality of the geometry group is very high, comparable to the very best institutes across Europe and North America"; "The researchers are first-rate"; "At the forefront of current research" (NWO expert referees)

"The quality of the research output of the members of this programme is outstanding" (QANU research evaluation)



Sample courses

In the *Orientation Seminar*, you get to know all UGC members. The basic geometry education takes place through *mastermath*, offering courses in *algebraic, symplectic and differential geometry, as well as elliptic curves, graphs, Riemann surfaces, operator algebras, Lie groups and algebraic topology, categories and homotopy theory*. At a more advanced level, we offer *student seminars*, e.g., on *fundamental groups, arithmetic of curves, K-theory, integrable systems, quantum groups, vertex operator algebras, stable homotopy theory, spectral triples*, etc., as well as *GQT-advanced courses*, e.g. on the *moduli space of curves, abelian varieties, analysis on manifolds*. You spend more than a semester writing a *research-level master thesis*. At the PhD level, we participate in the *GQT-schools*, with varying topics (most recently, e.g., on *Gromov-Witten theory, index theory and p-adic groups*). We also co-organise *WONDER-minicourses* for PhD students, e.g., on *rigid analytic geometry*, and other *schools and workshops* on specific topics, e.g., *graph theory, foliations, higher structures and Poisson geometry*. We organise weekly *research seminars* in geometry.

How to apply to UGC

To be considered for admission to this selective **masters**, you need to submit a motivation letter, cv and grade list. You can enrol twice a year. The tuition fees for the year 2014-2015 are 1906 € (EU/EAA/Swiss/Surinam students); 18850 € (others) - waivers are available for students on official exchange programmes with Utrecht.

To enter the **PhD track**, you need to submit a motivational letter, a research proposal, thesis, two letters of recommendation and a cv; you might be invited to an interview before admission.

We regularly have available several **PhD student scholarships**.

Upcoming this autumn

- Student seminars on *Tame Topology* and on *Probability on Graphs*.
- Research Seminar GAGA
- Minisymposium *Algebraic Geometry and Category Theory* (29 Sep)
- Intercity Number Theory Seminar on *Algebraic Groups and Number Theory* (17 Oct)
- GQT-school and Colloquium (3-7 Nov)
- Utrecht *Combinatorics Workshop* (7 Nov)
- PhD Minicourse on *Berkovich Skeletons* (8-12 Dec)