Master Degree in Mathematics
University of Verona

http://www.univr.it/mathematics

Department (of excellence) of Computer Science

2020/2021
Why mathematics?

Professional environments requiring strong mathematics skills:

- Life sciences, biology, **health** and medicine.
- Computer science in general, and HPC (High Performance Computing) and big data in particular (we have a **cluster**), **example**.
- Physics at all scales and engineering sciences. Material science.
- Social sciences, in the broadest sense. Development of complex systems or modelling and data analysis.
- **Finance**, insurance.

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Modelling Week 2016, Verona

ECMI modelling week 2021, Saint-Petersburg, Russia

ECMI modelling week 2022, Verona

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Why in English?

- The official language of science is **English**
- More opportunities for **studying/research/job** both in Italy and abroad
- CLIL: English as mandatory teaching language in high school classes (C1 level required)
- Highly qualified international teaching staff

http://www.univr.it/mathematics
### Leaders in internationalization

#### Department of Computer Science (Verona)

#### Credits earned abroad by ERASMUS+ OUTGOING Students (valori assoluti / absolute values)

<table>
<thead>
<tr>
<th>Year</th>
<th>VR</th>
<th>NorthEast</th>
<th>Italy</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015/2016</td>
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<tr>
<td>2016/2017</td>
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<tr>
<td>2017/2018</td>
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<tr>
<td>2018/2019</td>
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</tbody>
</table>

#### Percentage of graduates with at least 12 ECTS abroad

<table>
<thead>
<tr>
<th>Year</th>
<th>VR</th>
<th>NorthEast</th>
<th>Italy</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018</td>
<td>29.41</td>
<td>24.19</td>
<td>18.96</td>
</tr>
<tr>
<td>2017</td>
<td>45.45</td>
<td>23.83</td>
<td>15.61</td>
</tr>
<tr>
<td>2016</td>
<td>35.71</td>
<td>22.60</td>
<td>14.83</td>
</tr>
</tbody>
</table>

#### Percentage of students who obtained the Bachelor abroad

<table>
<thead>
<tr>
<th>Year</th>
<th>VR</th>
<th>NorthEast</th>
<th>Italy</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018</td>
<td>29.03</td>
<td>5.69</td>
<td>4.50</td>
</tr>
<tr>
<td>2017</td>
<td>23.53</td>
<td>5.73</td>
<td>5.02</td>
</tr>
<tr>
<td>2016</td>
<td>18.75</td>
<td>4.35</td>
<td>5.26</td>
</tr>
</tbody>
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Internships (some examples, also abroad with Erasmus+)

- Chiara, 2016, Google Summer of Code
- Cristiano, 2016, European Space Agency SOCIS
- Chiara, 2014, Camera di Commercio, Verona
- Andrea, 2014, Fairmat (software house and financial mathematics)
- Isacco, 2014, Aleph Energy (models for energy markets)
- Alessandro, 2014, Cattolica Insurance
- Cristina, 2013/14, Erasmus and internship, University of Innsbruck (Austria)
- Sara, 2011, French Institute of Petroleum, Paris (France)
- Gregorio, 2014, Enginsoft (Computer Aided Engineering)
- Elisa, 2012, Zamperla (roller coasters design), Vicenza
- Martina, 2013, Atraki (traffic flow modeling), Verona

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Job opportunities: alumni

- Fabio 2019, PhD in Mathematics, Universities of Trento and Verona
- Mauro, 2018, post-doc Technische Universität München
- Mirko 2017, PhD, Innsbruck
- Valentina 2017, PhD in Bioengineering, Politecnico di Torino
- Matteo 2017, PhD, Nice
- Emanuele 2017, Ernst & Young, Milano
- Greta 2016, Unicredit, Milano
- Giulia 2016, post-doc, Nantes
- Chiara 2015, Research Fellow, CNR-IMATI, Pavia
- Gregorio 2015 Generali, Treviso
- Giulia 2015, KPMG, Verona
- Marcella 2014, permanent researcher at Inria Saclay and École Polytechnique in France
- Simone, 2014, research associate, DAMTP & Fitzwilliam Museum, University of Cambridge
- Davide, 2013, researcher at the Technologies of Vision research unit of the Fondazione Bruno Kessler in Trento
- Elena, 2014, post-doc at the Department of Civil Environmental and Mechanical Engineering of the University of Trento
- Giulia, 2013, assistant professor in mathematical analysis at Politecnico di Milano
- Marcello, 2013, analyst, Panrhema (financial advice), Milan
- Silvia, Andrea, . . . , 2012, high school teachers
- [http://www.univr.it/mathematics/alumni-ae](http://www.univr.it/mathematics/alumni-ae)
Common foundational courses

- Differential geometry
- Functional analysis
- Analytical mechanics
- Algebra
Curricula

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- Functional analysis
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Curriculum Mathematics for education - core courses
- Mathematical logic
- Mathematics teaching and workshop
- Mathematical methods for computer science
- Physics Education Laboratory

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Curriculum Applied Mathematics - core courses
- Data fitting and reconstruction
- Foundations of data analysis
- Statistical learning
- Stochastic calculus
- Numerical modeling and Optimization

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Elective courses: main tracks and tutors

- **Education** (foundations, modern physics, physics education laboratory, PF24, geology, teaching): Sisto Baldo
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- **Pure maths** (algebra, geometry, analysis): Francesca Mantese
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- **Industrial maths** (numerical modeling in applied sciences, scientific computing, ECMI): Giacomo Albi, Nicola Sansonetto
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I. seminar and mini courses delivered by international faculties
II. courses from other masters in Verona (partially in Italian)
III. courses in agreement with University of Trento
IV. courses within Erasmus+ mobility program
Further activities

- 1 semester (or 2) of mobility experience abroad (Erasmus+ & UniVR Worldwide programs)
- Presentation of agreements to students: December/January
- Deadline for first semester abroad: June/July
- Deadline for second semester abroad: October/November
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- Internships and schools
  (http://profs.scienze.univr.it/mathematics/internship)
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- Final project (also abroad within Erasmus+ program)
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- Final project (also abroad within Erasmus+ program)

- NEW: 30 ECTS + final project in Grenoble (France): joint degree (starting in 2020/21, selected students)
Web page
http://www.univr.it/mathematics

Email
master.math@ateneo.univr.it or marco.caliari@univr.it

Associazione Alumni Matematica Verona
https://www.univr.it/it/i-nostri-servizi/servizi-per-laureati