CURRICULUM VITAE

Federico G. Lastaria

Dipartimento di Scienze e Tecnologie Aerospaziali

Politecnico di Milano

Via La Masa 34

20156 Milano (Italy)

- **Contact information**   federico.lastaria@polimi.it

- **Date of birth**   November 5, 1955

- **Birthplace**   Milano (Italy)

- **Citizenship**   Italian

- **Research and teaching interests**

  - Differential geometry.
  - Geometric methods for physics and engineering.
  - Geometric algebra.
  - Combinatorics.
  - Improving high school and university mathematics curricula.

- **Education**

  - Ph.D. in Differential Geometry, from Milan State University.
  - M.S. in Mathematics, from Milan State University. (Diploma cum laude)

- **Scholarships and grants**

  - 1980. Scholarship from the *Italian National Research Council* (CNR).
  - 1985-1989 Ph.D. scholarship from Milan State University.
  - 1990-1991 Senior research grant from the *Istituto Nazionale di Alta Matematica* (*High Mathematics National Institute*).

- **Teaching responsibilities**

  - 1993 - 2022   Politecnico di Milano, School of Industrial Engineering and Information. Degree Programmes in Aerospace Engineering, Mechanical Engineering, Energy Engineering.
    Course level: First-year undergraduate.
    Role: Instructor.
    Courses taught since 1993 - such as *Geometria, Elementi di Analisi Matematica A e Geometria, Analisi Matematica B, Analisi e Geometria 1 (ID code 081360), Analisi e Geometria 2 (ID code 081372)* - include topics from:

1

* Analysis 1
* Analysis 2
* Geometry
* Linear algebra
* Discrete mathematics

   – 1992-1993   Università di Roma 2 School of Engineering:

   * Linear Algebra and Analytic Geometry.

   – 1989 - 1990   Degree Programme in Physics, Como University. Teaching assistant in the course of

   * Geometry.

- **Teaching assignments at the Specialization School in Mathematics for High School Teachers.** (Silsis).

  – 2003 - 2009

   * Algebra and combinatorics.
   * Supervisor of final theses

  – 1996 - 2003   Specialization School on Mathematics and Didactics of Mathematics. Lectures on:

   * Functions and combinatorics.
   * Symmetries.

- **Other teaching responsibilities.**

  – 1984-1991   High school teacher of mathematics and physics.
  – 1999-2003   Mathematics teacher in a prison (Milano).

- **Academic service positions**

  – 2001-2003   National coordinator of the project: *Scientific cooperation and organization of post-graduate studies in mathematics with Birzeit University.* (Cooperation between the mathematics departments of seven Italian universities and the Mathematics Department of Birzeit University, Palestine). The project was funded by the Italian University and Research Ministry.
  – 2005-2007   Member of the Didactic Assessment Committee of the Faculty of Industrial Engineering of the Politecnico di Milano.
  – 2017-2022   Member of the Scientific Committee of the *Bovisa Campus* Library.

- **Talks in International Conferences**

  – The International Conference on Mathematics Education Into the 21st Century, Cairo, 1999.
  – The International Conference on Mathematics Education Into the 21st Century, Amman, 2000.

- Third International Palestinian Conference on Mathematics and Mathematics Education (IPCM). August 9-12, 2000. Bethlehem, Palestine.

- International Conference on Mathematical Sciences, Gaza, Palestine, 15-17 May 2006.

- New Trends in Mathematics and Physics, Birzeit University, Palestine, July 27-30, 2008.

- **Articles and reports**

  - Lastaria, F.G., *Metriche omogenee con la stessa curvatura*, Ph.D. Thesis in Mathematics, 1989, Università di Milano.

  - Lastaria, F.G., *Homogeneous metrics with the same curvature*, Simon Stevin Journ. of Pure Appl. Math., 65 (1991) pp. 267-281.

  - Lastaria, F.G., *Comparison of metrics on three-dimensional Lie groups*, Rend. Mat. Acc. Lincei, s. 9, vol. 2 (1991) pp. 207-210

  - Lastaria, F.G., Tricerri F., *Curvature-orbits and locally homogeneous Riemannian manifolds*, Ann. Mat. Pura Appl., CLXV (1993), pp. 121–131.)

  - Lastaria, F.G., *On separable algebras in Grothendieck Galois theory*, Le Matematiche, Catania, 127-136, LI, (1996)

  - Lastaria, F.G., *Azioni e rappresentazioni di gruppi*, Corso di Perfezionamento in matematica e didattica della matematica, Note del corso, (1996)

  - Lastaria, F.G. e Betti R., *Per una concezione dialettica della matematica*, Lett. Mat. Pristem, 12-14, 25, (1997)

  - Lastaria, F.G., *Introduzione alla Combinatoria, Corso di Perfezionamento in matematica e didattica della matematica*, Note del corso, (1998)

  - Lastaria, F.G., *Lie subalgebras of real and complex orthogonal groups in dimension four*, , Journal of Mathematical Physics, 449-453, 40, (1999)

  - Lastaria, F.G. e Saita M., Esercizi di Algebra Lineare, C.U.S.L., Milano, 1998.

  - Lastaria, F.G. e Saita M., *Appunti di Algebra Lineare*, C.U.S.L., Collana Scientifica, Milano, 1999.

  - Lastaria, F.G. , *An Invitation to Combinatorial Species*, Proceedings of the International Conference on Mathematics Education Into the 21st Century, Cairo, 1999.
    $http : //ii.uwb.edu.pl/akk/sem/sem\_rota.htm$

  - Lastaria, F.G. , *Introduzione al dossier: "Categorie e spazio: un profilo"*, lettera matematica pristem, Springer, 31, (1999)

  - Frezzotti, A., Lastaria, F.G., Mortola, S., *Through the bars. Teaching and learning mathematics in jail*, Proceedings of the International Conference on Mathematics Education Into the 21st Century, Amman, 2000.
    $http : //math.unipa.it/ grim/jourdain$

  - Lastaria, F.G. , *On the Category-Theoretic Approach to Differential Geometry*, Proceedings of the Third International Palestinian Conference on Mathematics and Mathematics Education, Bethlehem University, 2000.

3

- Lastaria, F.G., Munarini, E., Torri,D., *Enumerative Combinatorics: methods and applications.* Subjclass: 05A05, 68R05 Quaderno del Seminario Matematico dell'Università Cattolica di Brescia.

  http://www.dmf.unicatt.it/cgi-bin/preprintserv/semmat/Quad2001n22
- Lastaria F.G., *On the derivatives of one-forms along their metrically associated vector fields*, The International Conference on Mathematical Sciences, Gaza, Palestine, May 2006.
- Lastaria F.G., *Infinitesimal Stokes's Formula and Integration Theory of Forms and Pseudo-Forms*, New Trends in Mathematics and Physics, Birzeit University, Palestine, July 27-30, 2008.
- A. Kramer, F. Lastaria, N. Zagaglia Salvi, *Perfect matchings of a graph associated with a binary de Bruijn digraph*, Discrete Mathematics 310(22), 3241-3245 (2010).
- L. Frigerio, F. Lastaria, N. Zagaglia Salvi, *Adjacent vertex distinguishing edge colorings of the direct product of a graph by a path or a cycle*, Discussiones Mathematicae Graph Theory 31(3) (2011) 547-557.
- A. Dama, F. Lastaria, *Explicit versus implicit method for radiative heat transfer in gray and diffuse enclosures*, International Journal of Heat and Mass Transfer 55 (2012) 3829Â-3833.
- (a cura di F. Lastaria), *Isaac Newton, "De Quadratura Curvarum". Introductio.* Traduzione dal latino e note di Federico Lastaria. (2014)
- F. Lastaria, Luigi Quartapelle, *Rappresentazioni del gruppo SO_3 e moduli di Lamé.*, 2016. (Preprint).
- (a cura di F. Lastaria), *Archimede, "La Misura del Cerchio".* Versione digitalizzata, tradotta dal greco e annotata a cura di F. Lastaria. (2022, Preprint).

- **Pedagogical and research guidelines.**

  - Paying attention to political and social environment.
    * Support to the *Right to Education Campaign* to defend the rights of Palestinian students and teachers living under the Israeli Occupation and the siege of Gaza.
  - Emphasizing the importance of deep and wide mathematical education, trying to avoid artificial barriers between geometry, analysis, algebra, mathematical physics and so on.
  - Improving specialization that leads to deeper comprehension of mathematics and to enrichment of the quality of teaching and research, while avoiding excess of self-referential specialism.
  - Improving scientific dialogue and cooperation between experts in different fields, to enhance the quality of research and teaching.

Milano, July 15, 2022.