

DEPARTMENT OF MATHEMATICS AND INFORMATICS
Faculty of Mechanical Engineering
University of Niš

MELANIJA MITROVIĆ, FULL PROFESSOR

Head of the Center for Applied Mathematics, Faculty of Mechanical Engineering Niš,
CAM-FMEN (<http://camfmen.masfak.ni.ac.rs/>)

Chair of the Seminar Constructive Mathematics: Foundation and Practice,
CM:FP (<http://seminarcmfpm.masfak.ni.ac.rs/index.html>)

EDUCATION

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| • Dates | October 1977. – March 1983. |
| • Name and type of organisation providing education and training | Undergraduate studies
University of Niš, Faculty of Philosophy |
| • Principal subjects/occupational skills covered | Mathematics |
| • Title of qualification awarded | Dipl. mathematician |
| • Level in national classification | High (VSS) VII-1 |
| • Dates (from – to) | 1983. - 1992. |
| • Name and type of organisation providing education and training | Postgraduate studies
University of Niš, Faculty of Philosophy |
| • Principal subjects/occupational skills covered | Mathematics |
| • Title of qualification awarded | M.Sc. Master of Mathematics |
| • Level in national classification | High (VSS) VII-2 |
| • Dates | 1995. – 2000. |
| • Name and type of organisation providing education and training | Postgraduate studies
University of Niš, Faculty of Sciences and Mathematics |
| • Principal subjects/occupational skills covered | Mathematics |
| • Title of qualification awarded | Ph. D. of Mathematics |
| • Level in national classification | High (VSS) VIII |

WORK EXPERIENCE

- Dates (from – to)
 - Name and address of employer
 - Type of business or sector
 - Occupation or position held
 - Main activities and responsibilities
- 1985. - 1992.**
University of Niš, Faculty of Mechanical Engineering, Aleksandra Medvedeva 14, 18000 Niš, Republic of Serbia
High Education
Junior teaching assistant at Department of mathematics
Lectures and exercises on various undergraduate courses organized by Department of Mathematics (Calculus 1 and Descriptive Geometry)
- Dates (from – to)
 - Name and address of employer
 - Type of business or sector
 - Occupation or position held
 - Main activities and responsibilities
- 1992. - 2001.**
University of Niš, Faculty of Mechanical Engineering, Department of Mathematics, Aleksandra Medvedeva 14, 18000 Niš, Republic of Serbia
High Education
Assistant
Lectures and exercises on various undergraduate courses organized by Department of Mathematics (Calculus 1 and Descriptive Geometry)
- Dates (from – to)
 - Name and address of employer
 - Type of business or sector
 - Occupation or position held
 - Main activities and responsibilities
- 2001. - 2006.**
University of Niš, Faculty of Mechanical Engineering, Department of Mathematics, Aleksandra Medvedeva 14, 18000 Niš, Republic of Serbia
High Education
Assistant professor
Lectures and exercises organized by Department of Mathematics:
- On various undergraduate: Calculus 1, Descriptive Geometry and Computer Graphics, Probability and Statistics - half of semester course.
 - On postgraduate: Probability and Statistics.
- Dates (from – to)
 - Name and address of employer
 - Type of business or sector
 - Occupation or position held
 - Main activities and responsibilities
- 2006. - 2014.**
University of Niš, Faculty of Mechanical Engineering, Department of Mathematics, Aleksandra Medvedeva 14, 18000 Niš, Republic of Serbia
High Education
Associate professor
Lectures and exercises organized by Department of Mathematics:
- Bachelor Level: Calculus 2, Business Statistics (The Engineering Management Profile).
 - Master Level: Calculus 3.
 - Doctoral level: Probability and Statistics.

• Dates (from – to)	Since 2014.
• Name and address of employer	University of Niš, Faculty of Mechanical Engineering, Department of Mathematics, Aleksandra Medvedeva 14, 18000 Niš, Republic of Serbia
• Type of business or sector	High Education
• Occupation or position held	Full professor
• Main activities and responsibilities	Lectures and exercises organized by Department of Mathematics: <ul style="list-style-type: none"> • Bachelor Level: Calculus 2, Business Statistics (The Engineering Management Profile). • Master Level: Calculus 3. • Doctoral level: Probability and Statistics.

Member of the Faculty governing bodies, working committees and boards:

- Member of the Faculty Council since 2015
- Deputy Vicehead of the Department of Mathematics and Informatics (2005-2010)
- Quality Board
- Committee for the Student Evaluation of Educational Quality (2009-2015)
- Committee for the Accreditation of the new study programme in Engineering Management (in the period from 2011 to 2012)

SCIENTIFIC WORK

Research interest

- Algebraic theory of semigroups
- Algebraic theory of semirings
- Theory of constructive semigroups with apartness

Society Memberships

- Board of the Serbian Society of Logic
- Serbian Mathematical Society.
- Center for Advanced Mathematical Models in Informational Technologies, Mathematical Institute SASA Belgrade.

Research Grants

- 11M04 grant of Faculty of Mechanical Engineering, University of Niš. (1996- 2000)
- “Methods of Logic for Decision Support in Real Situation” (1379), Serbian Ministry of Science, Technology and Development. (2000-2005)
- “Representation of Logical Structures and their Applications in Computer Science” (144013), Serbian Ministry of Science, Technology and Development. (2005-2010)
- “Representations of logical structures and formal languages and their application in computing” (174026), Serbian Ministry of Education, Science and Technological Development. (since 2010)

- Grant “Positive Quasi-antiororders in Semigroup with Apartness”, Faculty of Philosophy University of East Sarajevo, Ministry for Science and Technology of the Republic of Srpska, Bosnia and Herzegovina, Scientific Society of Mathematicians Banja Luka. (2007-2008)
- Grant “Special Maltsev’s Relational Systems - Coequalities and Quasi- antiororders”, Scientific society of mathematicians Banja Luka, Ministry of sciences and technology of the Republic of Srpska, Bosnia and Herzegovina. (2008-2010).
- Grant RN 1202.018-18, Central European Initiative – CEI.
- Savremena istraživanja u teoriji fiksne tačke: metrički i topološki pristup, Elektrotehnički fakultet, Univerzitet u Banjoj Luci. (from 2019)

- EUROWEB+ mobility project (3 months at Mathematics and Applied Mathematics) at Malardalen University, Sweden, 2017, 2018.
- 2005, November-December Tempus IMG-SCG1025-2005, TU Wien, Austria.

Invited Lectures

- M. Mitrović: Algebraic Theory of Semigroups, a **MAM PhD course**, MDH, Vasteras, Sweden, November 2017, March 2018.

- M. Mitrović, *Semilattices of archimedean semigroups*, MDH, Vasteras, Sweden, 2017.

- M. Mitrović, *Constructive Semigroups with Apartness - a New Approach to Semigroup Theory*, Uppsala University, Sweden, 2017.

- M. Mitrović, *An Introduction to a Development of the Theory of Constructive Semigroups*, Stockholm University, Sweden, 2017.
- M. Mitrović, *Constructive semigroups with apartness – basic notions*, Bar-Ilan University, Tel Aviv, Israel, April 2013.
- M. Mitrović, *Regular Subsets of Semigroups*, UTAD (University of Trás-os-Montes and Alto Douro), Vila Real, Portugal, 2008.
- M. Mitrović, *Studying Semigroups through their Semilattice Decomposition*, DMG Institute, TU Wien, Austria, 2007.

Conferences

1. Conference organization

- The Fourth International Conference “Mechanical Engineering in the 21st Century”, Niš, April 19-20, 2018 - **member of the Programme Committee**.
- The Third International Conference “Mechanical Engineering in the 21st Century”, Niš, 17-18 September, 2015 - **member of the Organizing Committee**.
- Constructive Mathematics: Foundations and Practice, Niš, 2013, 24- 28 of June - **member of Programme Committee** and **chair of Organizing Committee**.
- The Second International Conference “Mechanical Engineering in the 21st Century”, Niš, 2013, 20-21 of June - **member of Organizing Committee**.
- The International Conference “Mechanical Engineering in the 21st Century”, 2010, 25-26 of November - **member of Organizing Committee**.
- Theoretical Computer Science - from Foundation to Application, 2009, 7-11 of November, Niš - **member of Programme Committee** and **chair of Organizing Committee**.
- Novi Sad Algebraic conference, NSAC 2005, Novi Sad, 11-15 July - **member of Programme Committee**.
- Developments in Language Theory, 8th International Conference, DLT 2004, Auckland, New Zealand, 13-17 December 2004, Proceedings, Series: Lecture Notes in Computer Science, Vol. 3340, Calude, Cristian S.; Calude, Elena; Dinneen, Michael J. (Eds.) 2005, XI, 431p - **reviewer**.
- Discrete Mathematics and Theoretical Computer Science, 4th International Conference, DMTCS 2003, Dijon, France, 7-12 July 2003, Proceedings, Series: Lecture Notes in Computer Science, Vol. 2731, Calude, Cristian S.; Dinneen, Michael J. Vajnozovski, V (Eds.), 2003, 300p - **member of Programme Committee** and **reviewer**.

- Algebra, Logic and Discrete Mathematics, Niš, 1995, 14-16 April - **member of Organizing Committee.**

2. Invited talks

M. Mitrović, *Basic algebraic structures with apartness*, MAM workshop on Algebraic Structures, November 29, 2018, MDH, Vasteras, Sweden.

M. Mitrović, *Periodic semigroups which are decomposable into semilattices of (hereditary) archimedean semigroups*, EMMI-AAA 2018 International workshop „Engineering Mathematics and Mathematics in Industry – Algebra, Analysis and Applications, 30 of May, MDH, Vasteras, Sweden.

M. Mitrović, *Basic algebraic structures with apartness*, MAM workshop on Algebraic Structures, November 29, 2018, MDH, Vasteras, Sweden.

M. Mitrović, S. Crvenković: *Semigroup with apartness (in Serbian)*, In occasion of 70th anniversary of the Mathematical Institute of the Serbian Academy of Sciences and Arts, 12-13 May 2016, Belgrade.

M. Mitrović, S. Crvenković, D. A. Romano: *Semigroup with apartness: constructive versions of some classical theorems*, Annual Iranian Mathematics Conference AIMC 46, 25-38 August 2015, Yazd, Iran.

3. Participant

- M. Mitrović, S. Silvestrov: *Semilattice decompositions of semigroups: from the theory to applications*, Swedish Network for Algebra and Geometry, SNAG 2019, BTH, Karlskrona, Sweden.

- M. Mitrović, S. Silvestrov: *Semilattice decompositions of semigroups: from the theory to applications*, SPAS 2019, MDH, Vasteras, 2019, 30 of September- 2 of October, Sweden.

- M. Mitrović, S. Silvestrov: *Regular subsets and semilattice decompositions of semigroups. Hereditarness and periodicity*, 8th International Conference Logic and Applications, LAP 2018, Dubrovnik, Croatia, September 23-27, 2019.

- M. Mitrović, S. Silvestrov: *On basic constructive algebraic structures with apartness*, 7th International Conference Logic and Applications LAP 2018, Dubrovnik, Croatia, September 24-28, 2018.

- M. Mitrović: *Constructive semigroups with apartness – (development of) a new algebraic theory* The Group Theoretical Methods in Physic – Group 32, Czech Technical University, Prague, Czech Republic, July 9-13, 2018.

- M. Mitrović, S. Crvenković, B. Randelović: *Constructive Semigroups with Apartness: Foundations of the Order Theory - II*, The Fourth International Conference “Mechanical Engineering in the

21st Century ”, Niš, April 19-20, 2018.

- M. Mitrović, S. Crvenković, B. Randelović: *Constructive Semigroups with Apartness: Foundations and Possible Applications*, SPAS 2017, Malardalen University and Stockholm University, Vasteras, Stockholm, 2017, 4-6 of October, Sweden.
- M. Mitrović, S. Crvenković, B. Randelović: *Constructive Semigroups with Apartness: Foundations of the Order Theory*, 6th International Conference Logic and Applications LAP 2017, Dubrovnik, Croatia, September 18-22, 2017.
- M. Mitrović, S. Crvenković, D. A. Romano: *Constructive semigroups with apartness – a new algebraic theory*, AAA94+NSAC 2017 – Semigroups, Novi Sad, Serbia, June 15-18, 2017.
- Workshop “Semigroups and Applications”, Uppsala, 2012, 31 of August - 2 of September.
- “Algebra e Informatica Teorica”, Siena, 2004, 5-6 July.
- “International Meeting on Semigroup Theory and Related Topics”, University of Minho, Braga, Portugal, 2003, 25-28 June.
- “Workshop on Semigroups and Languages”, University of Lisbon, Lisbon, Portugal, 2001 November 27-29.
- “Colloquium on Semigroups”, Szeged, Hungary, 2000, Jul 17-21.
- “Words, Languages and Combinatorics”, Kyoto, Japan, 2000, March 14-18.
- “International Conference of Semigroups”, Braga, Portugal, 1999, Jun 18- 23.
- “Semigroups and Applications”, St. Andrews, Scotland, 1997, July 2-8.

3.1 Participant of Serbian conferences:

- M. Mitrović, S. Crvenković, D. A. Romano, *Constructive Semigroups with Apartness: (Development of) a New Algebraic Theory*, Konferencija posvećena 70. rođendanu profesora Žarka Mijajlovića, 16-17.11.2018., Beograd.
- Workshop “Analysis and Topology Meet Algebra”, ATA, Sombor, 2012, 25-27 May.
- “Filomat”, Niš, 2001, August.
- X Congress of Yugoslav Mathematicians, Belgrade, 2000, 21-24 January.
- Algebra and Logic, In the occasion of 65th birthday of prof. Svetozar Milić, 1999, 21-22 September.
- “Algebra and Logic”, Novi Sad, 1998, 21-23 September.

- Matematička konferencija, Priština, 1996, 25-27 September.
- Congress of Yugoslav Mathematicians, Petrovac, 1995, May.
- “Algebra, Logic and Discrete Mathematics”, Niš, 1995, 14-16 April.

Referee

- Open Mathematics – formerly Central European Journal of Mathematics
- Discussiones Mathematicae General Algebra and Applications
- Applied and Computational Mathematics, SciencePG
- Algebraic structures and their applications
- Semigroup Forum
- Filomat
- Mathematical Reviews, USA
- Zentralblatt für Mathematik, Germany - local redaction

Publications

Book:

- M. Mitrović: *Semilattices of Archimedean Semigroups*, (with a foreword by Donald B. McAlister) University of Niš, 2003 – **scientific monograph of national importance**.

Survey Papers:

- M. Mitrović, S. Silvestrov, *(Apartness) Isomorphism theorems for basic constructive algebraic structures with special emphasize on constructive semigroups with apartness - an overview*, accepted in Stochastic Processes and Algebraic Structures - From Theory Towards Applications, Volume II: Algebraic Structures and Applications, (Eds.: S. Silvestrov, M. Malyarenko, M. Rančić), Springer, 2019.
- M. Mitrović, S. Silvestrov, *Semilattice decompositions of semigroups. Hereditarness and periodicity - an overview*, accepted in Stochastic Processes and Algebraic Structures - From Theory Towards Applications, Volume II: Algebraic Structures and Applications, (Eds.: S. Silvestrov, M. Malyarenko, M. Rančić), Springer, 2019.
- M. Mitrović: *On Semilattices of Archimedean semigroups - a survey*, in Proceedings of Workshop on Semigroups and Languages, 2002, Lisbon, Portugal, World Scientific 200, 163–196.

Book for students:

- D. Milovančević, M. Mitrović, Lj. Radović: *Calculus 2 (Matematika 2)*, University of Niš, Faculty of Mechanical Engineering, 2013 (in Serbian).

- M. Mitrović, Z. Lozanov-Crvenković : Zbirka rešenih zadataka iz poslovne statistike, University of Niš, Faculty of Mechanical Engineering, 2018 (in Serbian).

Papers:

- M. Mitrović, S. Silvestrov, S. Crvenković, D. A. Romano., *Constructive semigroups with apartness : towards new algebraic theory*, Journal of Physics: Conference Series (JPCS), Volume 1194, 2019, 012076, doi:10.1088/1742-6596/1194/1/012076.
- M. Mitrović, S. Silvestrov, *On basic constructive algebraic structures with apartness*, 7th International Conference Logic and Applications LAP 2018, Dubrovnik, Croatia, Book of Abstracts, 34-37.
- M. Mitrović, S. Crvenković, B. Ranđelović: *Constructive Semigroups with Apartness: Foundations of the Order Theory II*, in Proceedings of the 4th International Conference Mechanical Engineering in XXI Century, Niš, 19-20.4.2018.
- M. Mitrović, S. Crvenković, B. Ranđelović: *Constructive Semigroups with Apartness: Foundations of the Order Theory*, 6th International Conference Logic and Applications LAP 2017, Book of Abstracts, 34-37.
- S. Crvenković, M. Mitrović, D. A. Romano: *Basic Notions of (Constructive) Semigroups with Apartness*, Semigroup Forum, June 2016, Volume 92, Issue 3, 659-674.
- Y. Shao, S. Crvenković, M. Mitrović: *Distributive Lattices of Jacobson Rings*, Publications de l'Institut Mathématique, 2016, 100 (114), 87-93.
- Y. Shao, M. Ren, S. Crvenković, M. Mitrović: *The Semiring Variety Generated by any Finite Number of Finite Fields and Distributive Lattices*, Publications de l'Institut Mathématique, 2015, 98 (112), 45-51.
- M. Mitrović, S. Crvenković, D. A. Romano: *Constructive Semigroups with Apartness: Constructive Versions of some Classical Theorems*, the 46th Annual Iranian Mathematics Conference, University of Yazd, Yazd, Iran, 25-28 of August, Volume 46, 2015, 64-67.
- Y. Shao, S. Crvenković, M. Mitrović: *The Variety of Semirings Generated by Distributive Lattices and Finite Fields*, Publications de l'Institut Mathématique, 2014, 95 (109), 101–109.
- A. Caserta, S. Đurčić, M. Mitrović: *Selection Principles and Double Sequences II*, Hacettepe Journal of Mathematics and Statistics, Volume 43 (5) (2014), 725-730.
- S. Crvenković, M. Mitrović, D. A. Romano: *Semigroups with Apartness*, Mathematical Logic Quarterly, 2013, 59 (6), 407-414, malq.201200107.
- Y. Shao, S. Crvenković, M. Mitrović: *The Zeleznikow Problem on a Class of Additively Idempotent Semiring*, Journal of the Australian Mathematical Society, 2013, 95 (3), 404–420 DOI 10.1017/S14466788713000359.
- B. D. Nikolić, B. Kegl, S. D. Marković, M. S. Mitrović: *Determining the Speed of Sound, Density, and Bulk of Rapeesed Oil, Biodiesel, and Diesel Fuel*, Thermal Science, 2012, 16,

Suppl. 2, 505–514.

- S. Crvenković, D.A.Romano and M. Mitrović: *Complementary pair of quasi-antiorders*; pp. Reports of Mathematical Logic, ISSN: 0137- 2904, 45(2010), 1-6.
- M.Mitrović, D.A.Romano and M.Vinčić: *Theorem on semilattice-ordered semigroup*; International Mathematical Forum; ISSN 1312-7594, 4(5)(2009), 227–232.
- M. Mitrović: *Regular Subsets of Semigroups Related to their Idempotents*, Semigroup Forum, Volume 70, Number 3 (2005), 356–360.
- S. Bogdanović, M. Ćirić, M. Mitrović: *Semilattices of Nil-extensions of Simple Regular Semigroups*, Algebra Colloquium 10:1 (2003), 81–90.
- S. Bogdanović, M. Ćirić, M. Mitrović: *Semigroups Satisfying Certain Regularity Conditions*, "Advances in Algebra - Proceedings of the ICM Satelite Conference in Algebra and Related Topics", World Scientific Publ. Co. Singapore, 46–59.
- G. Petrović, V. Jeftić, M. Mitrović, Z. Marinković: *External Excitations and Disturbances with Bucket Wheel Excavators as Non-linear and Random Functions*, Facta Universitatis (Series: Mechanical Engineering), Vol. 1, No 10, 2003, 1339–1346.
- M. Mitrović, S. Bogdanović, M. Ćirić: *Locally uniformly π -regular semigroups*, Proceedings of the International Conference of Semigroups, Braga, Portugal, 18-23 Jun 1999, World Scientific, 106-113.
- S. Bogdanović, M. Ćirić, M. Mitrović: *Semilattices of hereditary Archimedean semigroups*, Filomat (Niš) 9:3 (1995), 611-617, Algebra, Logic and Discrete Mathematics, Niš, April 14-16. 1995, 611-617.

Member of the PhD defending committee

- John Musonda, *Reordering in Noncommutative Algebras, Orthogonal Polynomials and Operators*, Mälardalen University, School of Education, Culture and Communication; Vasteras, Sweden, 2018.
- Alex Behakanira Tumwesigye, *Dynamical Systems and Commutants in Non-Commutative Algebras* Mälardalen University, School of Education, Culture and Communication; Vasteras, Sweden, 2018.
- S. Petrović, *Development of model of maintenance system by applying simulation*, University of Niš, Faculty of Mechanical Engineering Niš, Serbia, 2018.
- I. D. Radojković, *Model of a risk management in auto-insurance*, University of Niš, Faculty of Mechanical Engineering Niš, Serbia, 2016.
- N. Stevanović, *Groupoids with Abel-Grassman's law*, University of Niš, Faculty of Sciences and Mathematics, 2006.

Guest:

- Mälardalen University, Vasteras, Sweden, 28 of September – 30 of October, 2019.
- Mälardalen University, Vasteras, Sweden, several times since 2017.
- University of Minho, Braga, Portugal, November, 2014.
- Bar-Ilan University, Tel Aviv, Israel.
- TU Wien, 2009 - member of University of Niš delegation who sign contract between two Universities.
- UTAD (University of Trs-os-Montes and Alto Douro), Vila Real, Portugal, 2008.
- TU Wien, several times between 2005-2008.
- University of Bucharest, Romania, September, 2004.
- Politecnico di Milano, Italy, 2004, 3-10 July.
- University of Banja Luka, several times since 2007.
- University of Novi Sad, several times since 2001.

Host:

- Paolo Agliano, University of Siena, Siena, Italy, 2019
- Zvonimir Šikić, University of Zagreb, Croatia, 2019
- Douglas S. Bridges, University of Canterbury, Christchurch, 2013.
- Paola Catarino, UTAD (University of Trs-os-Montes and Alto Douro), Vila Real, Portugal
- Masami Ito, Kyoto Sangyo University, 2007.
- Alessandra Cherubini, Politecnico di Milano, 2004.
- Cristian Calude, The University of Auckland, 2003.
- Donald McAlister, Northern Illinois University, 2002.