

Curriculum Vitae

Bellaouar Djamel

Guelma : 17 December 2024

Personal Information

Surname: Bellaouar

First name: *Djamel*

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University 8 Mai 1945-Guelma

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bellaouardj@yahoo.fr

Nationality: Algerian

Date of birth: 20 th May 1976, Babor-Sétif

Gender: Male

Photo



Current Position

University 08 Mai 1945 Guelma, Department of Mathematics, Distinguished professor in charge of lessons, class A (MCA).

Academic Qualification

1. Baccalaureate certificate: Science ex. June **1997**.
2. Graduate of higher studies (DES): Specialty (Mathemtics), Option (Functional analysis), University Farhet Abas, Sétif. June **2001**.
3. Magister: Specialty (Discrete Mathematics), Option (Number Theory), University Mohamed Boudiaf-M'sila, June **2004**.
4. Doctor of Science: in Mathematic (**15 December 2015**). Specialty (Mathemtics), University Mohamed Boudiaf M'sila, Thesis: "Étude non classique de quelques inégalités faisant intervenir la fonction d'Euler ϕ " (In English).
5. University Habilitation in Mathematics: **28 June 2020** at University 8 Mai 1945 Guelma (Presentation In English).

My Research Interests:

1. Elementary Number Theory,
2. Algebraic Number Theory,
3. Diophantine Analysis,
4. Diophantine Equations,
5. Recurrence Sequences and Special numbers,
6. Computational Number Theory,
7. Representation of Integers,
8. Matrices with Integer entries,
9. Logic number Theory,
10. Non-standard Analysis,
11. Neutrices and External Numbers.

After 28 June 2020

1. Educational activities

Teaching Experience

Note. *All my courses from the year 2020 up to now have been made by English language.*

| Départements ou Facultés | Intitulé de la matière | Niveau d'étude | Semestriel /Annuel | Année d'étude |
|--|---|--|--------------------|------------------|
| Mathématiques | Algèbre 3 + Algèbre 4, cours et TD | 2 ^{ème} Année licence LMD | Semestre 1+2 | 2020-2021 |
| | TD d'Algèbre 1 | 1 ^{ère} Année MI- LMD | Semestre 1 | |
| | Anglais1 + Anglais 2, cours | Master 1 | Semestre 1+2 | |
| Mathématiques | Algèbre 3 + Algèbre 4, cours et TD | 2 ^{ème} Année licence LMD | Semestre 1+2 | 2021-2022 |
| Mathématiques | Anglais1 + Anglais 2, cours | Master 1 | Semestre 1+2 | |
| Mathématiques | TD d'Analyse 1 | 1 ^{ère} Année MI- LMD | Semestre 1 | |
| Faculté des Mathématiques et de l'informatique et des sciences de la Matière | Renforcement de compétences en langues étrangères | Doctorat 3 ^{ème} cycle (LMD) | Semestre 2 | |
| Mathématiques | Algèbre 3 + Algèbre 4, cours et TD | 2 ^{ème} Année licence LMD | Semestre 1+2 | 2022-2023 |
| | Histoire des Mathématiques, cours | 2 ^{ème} Année licence LMD | Semestre 1 | |
| | TD d'Algèbre 2 | 1 ^{ère} Année MI- LMD | Semestre 2 | |
| | Anglais, cours | 1 ^{ère} Année MI- LMD | Semestre 2 | |
| Mathématiques | Algèbre 3 + Algèbre 4, cours et TD | 2 ^{ème} Année licence LMD | Semestre 1+2 | 2023-2024 |
| Mathématiques | Histoire des Mathématiques, cours | 2 ^{ème} Année licence LMD | Semestre 1 | |
| Département des Sciences et Technologies | TD Maths 3 | 2 ^{ème} Année Sciences et Technologie | Semestre 1 | |

Supervision (with Master students)

1. November 2019-September 2020 (Master 2). I supervised my student ABDEL-KANI IBRAHIM ANNOUR from CHAD. **Title:** "Sur les Matrices à Coefficients Entiers" (In French).

Link : https://dspace.univ-guelma.dz/jspui/bitstream/123456789/10023/1/ABDEL-KANI_IBRAHIM%20ANNOUR_Math%C3%A9matiques_Equations%20aux%20d%C3%A9riv%C3%A9es%20partielles%20et%20analyse%20num%C3%A9rique.pdf

2. Year 2022 (Master 2). I supervised my student Berramdane Ikhlas, **Title:** " On some properties of divisor function "

Link : https://dspace.univ-guelma.dz/xmlui/bitstream/handle/123456789/13994/BERRAMDANE_IKHLAS_F5.pdf?sequence=1&isAllowed=y

3. Year 2022 (Master 2). I supervised my student: REFICE Habiba. **Title:** ‘Notes on Euler’s phi function’.
Link : https://bucket.theses-algerie.com/files/repositories_dz/1130232894319573.pdf
4. Year 2023 (Master 2). I supervised my student Zitouni Naima. **Title:** "Mean values of arithmetic functions".
Link : https://dspace.univ-guelma.dz/jspui/bitstream/123456789/15055/1/ZITOUNI_NAIMA_F5.pdf
5. Year 2024 (Master 2). I supervised my student CHEDDADI Samiha. **Title:** " On the eigenanalysis methods for solving systems of higher-order differential equations ".

Published Lecture-Notes (Pedagogical Manuscripts) for students

1. Bellaouar Djamel, **Algebra 4 (summary of lessons, examples, solved and suggested exercises)**, Lecture-Note Presented to students of the second year Mathematics. Department of Mathematics, University 8 Mai 1945 Guelma, University Year: 2023/2024.
Link: <http://dspace.univ-guelma.dz/jspui/handle/123456789/16725>

Reviewing Pedagogical (Educational) Manuscripts

1. I have reviewed the Pedagogical Manuscript of Dr. Ferag Azzouz from Ecole Normale Supérieure d'enseignement Technologique de Skikda. Title : **Algèbre 4** (Directed to students in the fourth year of the secondary education).

π -day Conferences :

1. **14 March 2022**. Plenary Talk entitled: “ *Excursion of the mind with the set of natural numbers*”
2. **14 March 2023**. Plenary Talk entitled: “ *Some representation on the number π* ”.
3. **14 March 2024**. Plenary Talk entitled: “ *Mathematics is not yet ready for some Conjectures*”.

Coding and Organization Anonymity Commission and The committee for correcting

1. I was a member in the Coding and Organization Anonymity Commission, At Faculty of Mathematics and Computer Science and Material Sciences, Year 2023. University 8 Mai 1945-Guelma.
2. I was a member in The committee for correcting the tests for the doctoral competition in Mathematics, At Department of Mathematics. University 8 Mai 1945-Guelma.

2. Research activities

Published Papers in Refereed Journals

1. Bellaouar Djamel, Boudaoud Abdelmadjid and Jakimczuk Rafael: *Notes on the equation $d(n) = d(\phi(n))$ and related inequalities*. Math. Slovaca. **73** N 3, (2023), 613-632.
Link: <https://www.degruyter.com/document/doi/10.1515/ms-2023-0045/html>
2. Djamel Bellaouar and Abdelmadjid Boudaoud, *Some representations of unlimited natural numbers*. Math. Commun. **28**(2023), 317–336.
Link: <https://www.mathos.unios.hr/mc/index.php/mc/article/view/4939>
3. Djamel Bellaouar, Alain Togbé and Rafael Jakimczuk, *New notes on the equation $d(n) = d(\phi(n))$ and the inequality $d(n) > d(\phi(n))$* . Math. Slovaca. **74** N 5, (2024), 1127-1146. **Link:** <https://doi.org/10.1515/ms-2024-0081>
4. Amroune Zahra, Bellaouar Djamel and Boudaoud Abdelmadjid, *Solutions of the equation $d(kn) = \phi(\phi(n))$* . JJMS **17**, No. 3 (2024), 317-324.
Link: <https://jjms.yu.edu.jo/index.php/jjms/article/view/437/45>
5. Amroune Zahra, Bellaouar Djamel and Boudaoud Abdelmadjid, *A class of solutions of the equation $d(n^2) = d(\phi(n))$* . Notes on Number Theory and Discrete Mathematics. Volume **29**, Number 2 (2023), 284–309.
Link : <https://nntdm.net/papers/nntdm-29/NNTDM-29-2-284-309.pdf>

Accepted papers (papers that will appear after **December 2024** in some Refereed Journals)

1. Bellaouar Djamel and Boudaoud Abdelmadjid, *Representation of unlimited integers as the product of integers with some constraints*. Journal of logic and analysis. (**Received:** 21 November 2022, **Accepted:** January 2024), pages: 1-39.
2. Bellaouar Djamel and Boudaoud Abdelmadjid, *Infinite number of changes of sign for a difference of two number-theoretic functions*. Malaysian Journal of Mathematical Sciences. (**Received:** 18 January 2021, **Accepted:** July 2024), pages: 1-25.
3. Bellaouar Djamel and Özer Özen, *Padovan and Perrin numbers of the form $7^{\{t\}} - 5^{\{z\}} - 3^{\{y\}} - 2^{\{x\}}$* . Notes on Number Theory and Discrete Mathematics. (**Received:** 7 May 2024, **Accepted** October 2024), pages: 1-9.
4. Bouhadjar Slimane and Bellaouar Djamel, *Solutions of $d(n) = d(\phi(n))$ where n has four different prime divisors*, Bol. Soc. Paran. Mat. (**Received:** 10 December 2022, **Accepted:** June 2024), pages: 1-18.

Papers which were submitted **before 28 June 2020** but these papers published **after 28 June 2020**

1. Boudaoud Abdelmadjid and Bellaouar Djamel, *Representation of integers: A nonclassical point of view*, J. Log. Anal. **12:4** (2020) 1-31;
Link: <https://doi.org/10.4115/jla.2020.12.4>

2. S. Boudaoud, D. Bellaouar & A. Boudaoud (2020). Nonclassical study on certain Diophantine inequalities involving multiplicative arithmetic functions. *Malays.J. Math. Sci.*, 14(1), 17–39.
Link:<https://mjms.upm.edu.my/fullpaper/2020-January-14-1/Djamel%20Bellaouar-17-39.pdf>.
3. Özen Özer and D Bellaouar, Some results on a special type of real quadratic fields, *Bulletin of the Karaganda University-Mathematics*, Karaganda State Univ, V. 93, 2019.
Links:<https://doi.org/10.31489/2019M1/48-58>
<https://hdl.handle.net/20.500.11857/2950>

Submitted papers (papers in Review)

1. Bellaouar Djamel, *When does $(P_{n+1}^x + P_{n-1}^x)/2$ equal a Pell-Lucas number?*. *Jordan Journal of Mathematics and statistics*. (**Received:** 7 March 2024, in Review).
2. Merzougui Imane, Bellaouar Djamel and Boudaoud Abdelmadjid, *Mersenne numbers of the form $P_n \pm P_m$ or $Q_n \pm P_m$* . *Jordan Journal of Mathematics and statistics*. (**Received:** 28 April 2024, in Review).

Plenary and Invited Talks at **international** Conferences:

1. **Plenary session** ‘‘ Bellaouar Djamel, Some generalizations on the representation of unlimited natural numbers’’ March 7 2023, MOPA Seminar, USA.

Video Link:

<https://www.youtube.com/watch?v=ywIYuMkR9OM>

<https://nylogic.github.io/mopa/2023/03/07/some-generalizations-on-the-representation-of-unlimited-natural-numbers.html>

2. Bellaouar Djamel, On the comparison between the value of the divisor function to its value at Euler's function. Conference on diophantine m -tuples and related problems III, Zagreb- Croatia, September 14-16, 2022 :

Link: <https://www.grad.unizg.hr/dioph/>

Link: <http://www.numbertheory.org/ntw/N3.html>

3. Bellaouar Djamel, International Biomathematical Modeling Days (IBMD-2023) 25-27 June, 2023, Biomathematics Laboratory, University Djillali Liabes, Sidi Bel Abbes, Algeria : Representation of matrices with integer entries (a non-classical point of view).

Link : <https://sites.google.com/view/ibmd2023/home?authuser=1>

4. Bellaouar Djamel, Nonstandard models applied on the representation of integers. Second International Conference on Mathematics and Applications (ICMA'2023), Sep 26-27 2023, Blida :

Link : <https://icma23.sciencesconf.org/program/details>

5. Boudaoud Abdelmadjid and Bellaouar djamel, Some representations of unlimited natural numbers. The fourth International conference on Applied Algebra, ICAA'2024, University Center of Barika. 17-18 September 2024.
Link : <https://icaa2024barika.mystrikingly.com/>

Plenary and Invited Talks at **national** Conferences:

1. Bellaouar Djamel, New open problems involving the divisor function. Journée Scientifique des Mathématiques et Informatique (JSMI2022), Khemis- Miliana-ALGERIA, May 16th 2022.
Link : <http://www.univ-dbk.m.dz/jsmi/index.html>
2. Bellaouar Djamel, The equation $\sigma(n) = \tau(k \cdot \phi(n^2))$ has finitely many solutions. Second online conference on Mathematics and its applications (CNMA'2022), University of Bourdj Bou Arréridj September 17-18, 2022 :
Link : <https://site-5709206-7403-6518.mystrikingly.com/>
Program : [Algebra PROGRAM.pdf?id=3933100](#)
3. Bellaouar Djamel, New diophantine equation involving the sum of positive divisors and Euler's function. National Conference on Mathematics and Applications NCMA2022, Centre Universitaire Abdelhafid Boussouf Mila/ 29 November 2022, Mila – Algeria.

Scientific Collaboration Projects

Project 1. CNEPRU N° C00L03UN280120180006. Projet reconduit pour les années 2020 et 2021. **Intitulé** : *Applications dans le domaine des mathématiques discrètes avec utilisation de l'outil non standard.*

Project 2. CNEPRU N° C00L03UN280120220006, Year : Projet agréé à partir du 01/01/2022. **Intitulé** : *Representation of integers and solving Diophantine equations.*

Project 3. CNEPRU N° C00L03UN280120220006, Year : Projet reconduit pour les années 2024 et 2025. **Intitulé** : *Representation of integers and solving Diophantine equations.*

Participation in the doctoral competition in mathematics

1. I participated in the doctoral competition in mathematics (Proposing exams and doing corrections), University Mohamed Boudiaf-M'sila, 13 April 2022.

Reviewing Doctoral Theses (Arbitration)

1. Reviewing and Examining the Doctoral Thesis of BENAOUI Abdelhamid at University Mohamed Boudiaf-M'sila : **21 October 2021. Title** : Particular neutrosophic subsets on a lattice.
Link : <https://dspace.univ-msila.dz/server/api/core/bitstreams/92f801d1-0d25-4dd0-8e4e-6ad8757f0c5f/content>

2. Reviewing and Examining the Doctoral Thesis of HEBOUB Lakhdar at University Mohamed Boudiaf-M'sila : **21 December 2023**. **Title** : Sur les codes cycliques maximaux de longueur n .

Link : <https://dspace.univ-msila.dz/server/api/core/bitstreams/122f8a79-d01f-428d-9502-dbaf979c4f7f/content>

3. Reviewing and Examining the Doctoral Thesis of AMROUNE Zahra at University Mohamed Boudiaf-M'sila : **18 April 2024**. **Title** : Representation of the solutions of diophantine equations containing arithmetic functions.

Link : <https://dspace.univ-msila.dz/server/api/core/bitstreams/09fb5c18-7006-41dd-8e69-1aca7f9d1bb0/content>

Experience with university Habilitation

1. Examining the university Habilitation of **Dr. KARRAS Meselem** at University Mohamed Boudiaf-M'sila : **07 March 2021**.

2. Examining the university Habilitation of **Dr. KRELIFA Ali** at University Mohamed Boudiaf-M'sila : **26 May 2021**.

Signature:



Dr. Bellaouar Djamel
University 8 Mai 1945 Guelma

Before 28 June 2020

Teaching Experience:

1. 2003-2004: **TD** "Analysis 2" The common T. of exact sciences, Technology and Computer Science. University Mohamed Boudiaf-M'sila.
2. 2004-2005: **Course and TD** "Mathematics 2", Department of Economic Sciences, University 08 Mai 1945 Guelma.
3. 2005-2007: **TDs** "Analysis 1", Department of Technique sciences (ST), University 08 Mai 1945 Guelma.
4. 2007-2008: **Course and TD** "Numerical Analysis 1 and 2", Department of Mathematics, University 08 Mai 1945 Guelma.
5. 2008-2009: **Course 1 and TD** "Numerical Analysis 1 and 2", Department of Mathematics, **Course 2** "Numerical Analysis 1", Department of SM, University 08 Mai 1945 Guelma.
6. 2009-2011: **Course and TD** "Numerical Analysis 1 and 2", Department of Mathematics, University 08 Mai 1945 Guelma .
7. 2011-2016: **Course 1 and TD** "Algebra 3 and 4", Department of Mathematics, University 08 Mai 1945 Guelma, **Course 2** "English 1 and 2" for Master, Department of Mathematics, University 08 Mai 1945 Guelma.
8. 2016-2017: **Course and TD** "Algebra 1 and 2", Department of Mathematics, University 08 Mai 1945 Guelma.
9. 2017-2018: **Course 1 and TD** "Algebra 1 and 2", Department of Mathematics, University 08 Mai 1945 Guelma, **Course 2** "English" for doctoral student, Laboratory of Applied Mathematics and Modeling (LMAM), University 08 Mai 1945 Guelma.
10. 2018-2019: **Course and TD** "Algebra 1 and 2", Department of Mathematics, University 08 Mai 1945-Guelma.

Supervision:

- 2016-2017 (Master 2), I worked with my students S. Kribes and S. Souici on the generalized Euler's function. They made a thesis entitled "Sur la fonction d'Euler généralisée" (In French).
- 2018-2019 (Master 2), I worked with my students N. Benmabrouk and S. Moussaoui on recurrence sequences. They made a thesis entitled "A study of certain generalized recurrence sequences".

Plenary and Invited Talks at Conferences:

1. **Communication Poster** " Sur l'approximation simultanée au sens infinitésimal des réels d'un système contenant un nombre infiniment grand d'éléments " 5eme

Rencontre internationale d'analyse Mathématique et ses applications (RAMA V), 10-13 April 2006 University Mohamed Boudiaf-M'sila, Algeria.

2. **Communication Poster** “ Approximation simultanée au sens infinitésimal d'un système de réels contenant un nombre infiniment grand d'éléments ” Colloque International sur les Mathématiques Appliquées (CIMA'10), 07-09 November 2010, University 08 Mai 1945- Guelma, Algeria.
3. **Plenary sessions** “ Open problems on Diophantine equations and Nonstandard analysis” Laboratory of pure and applied mathematics, University Mohamed Boudiaf-M'sila, 2014.
4. **Oral presentation** “ Non-classical Study on the infinity of certain Arithmetic Inequalities” The 3rd International Conference on Applied Algebra (Icaa'2015), April 28-30 2015, University Mohamed Boudiaf-M'sila.
5. **Plenary session** “Non-classical study on the simultaneous rational approximation and on the infinity of certain Arithmetic Inequalities” Laboratory of Applied Mathematics and Modeling (LMAM), Séminaire hebdomadaire du Laboratoire. November 24, 2015 (14h-15:30 h).
6. **Oral presentation** “ On a sequence formed by iterating the number of the positive divisors of n ” Sociadage Portuguesa de Matemática 2016, 11, 12 e 13 de Julho. Escola Superior de Tecnologia do Barreiro, **Portugal**,
(<http://enspm16.spm.pt/>),
(http://enspm16.spm.pt/files/outros/assintotica_nstandard.pdf).
7. **Oral presentation** “ On the solubility of certain Diophantine inequalities using particular subsets of positive integers” Congrès des Mathématiciens Algériens, CMA'2016, Batna, 08-09 November 2016.
8. **Plenary session** “Notes on certain Diophantine equations involving the divisor function and some related functions” Laboratory of Applied Mathematics and Modeling (LMAM), Séminaire hebdomadaire du Laboratoire. November 07, 2017 (14h-15:30 h).
9. **Oral presentation** “ Remarks and new problems involving the iteration of decreasing multiplicative operators” Workshops on pure and applied Mathematics (WPAM'18), CMA'2016, University Mohamed Boudiaf-M'sila, December 17-18, 2018.
10. **Oral presentation** “ Non-standard notes on the ratio of two expressions formed by the product and the sum of certain multiplicative arithmetic functions” Second International Workshop on Cryptography and its Applications (2'IWCA'19) / 18-19 June 2019, U.S.T.O-MB, Oran, Algeria.

Articles Published in Refereed Journals and Conference Proceedings:

1. *D. Bellaouar, A. Boudaoud*: Non-classical study on the simultaneous rational approximation. *Malays. J. Math. Sci.* **9** (2015), 209-225. [MR 3350181](#)
2. *D. Bellaouar*: Notes on certain arithmetic inequalities involving two consecutive primes. *Malays. J. Math. Sci.* **10** (2016), 253-268. [MR 3583217](#)
3. Özer Özen and Bellaouar Djamel. (2019). *Some Results on Special Types of Real Quadratic Fields*. Bulletin of the Karaganda University. Mathematics series. **93**. DOI:[10.31489/2019M1/48-58](#), <https://mathematics-vestnik.ksu.kz/apart/2019-93-1/5.pdf>
4. *Bellaouar Djamel, Boudaoud Abdelmadjid, Özen Özer*, On a sequence formed by iterating a divisor operator, Published online September 16, 2019, DOI: [10.21136/CMJ.2019.0133-18](#). Czechoslovak Mathematical Journal, first online, pp. 1-20.

Submitted Articles:

1. *Bellaouar Djamel*, *Sign changes of two arithmetic functions involving the kernel of a positive integer*, Ukrainian Mathematical journal, submitted on December 12, 2016.
2. *Boudaoud Abdelmadjid and Bellaouar Djamel*, *Representation of Integers: A nonclassical point of view*, Journal of Logic and Analysis, Submitted on April 15, 2019. About 40 pages.
3. *Boudaoud Said, Bellaouar Djamel and Boudaoud Abdelmadjid*, *Non-classical study on certain Diophantine inequalities involving multiplicative arithmetic functions*, Malays. J. Math. Sci. Submitted on June 5, 2017 and resubmitted on April 17, 2018.

Articles in Preparation:

My own works:

1. Representation of integers using the number of digits prime factorization,
2. On the equation $\sigma(n) = n+1+\phi(n)$ and some related inequalities

In cooperation with Professors Boudaoud Abdelmadjid and Rafael Jakimczuk from Argentina:

1. On the solutions of $d(n) = d(\phi(n))$ and related inequalities:

In cooperation with Professor Boudaoud Abdelmadjid:

1. On the Factorization of Unlimited terms of some Recurrence Sequences,
2. Non-classical Representation of Gaussian Integers,
3. On the properties of certain families of unlimited natural numbers.
4. On factoring of unlimited matrices with integer entries.

Computer knowledge:

- **Office Automation:** Word, Excel, Beamer and Power-point,
- **System:** Windows and Unix,
- **Software:** Latex and Scientific Work Place,
- **Programming:** Maple, Pari-Gp and Mathematica.

Degree Course:

- 2004-2010, Maître assistant Classe B,
- 2010-2015, Maître assistant Classe A,
- 2015 up to now, Maître de conférences Classe B,

Duplicated Lecture Notes:

1. D. Bellaouar, Algèbre 3 (Cours et exercices corrigés), For the second year Maths, Department of Maths, University 08 Mai 1945-Guelma, 2018.
2. D. Bellaouar, Algebra 4, Level: for the second year Maths, Department of Maths, University 08 Mai 1945-Guelma, *In preparation*.

Scientific Collaboration Project:

Project 1. CNEPRU N° B05620140101, Year : 2015-2018, Théorie IST et Applications.

Project 2. CNWPRU N° C00L03UN280120180006, Year : 2018-Now, Applications dans le domaine des Mathématiques discrètes avec utilisation de l’outil non standard.

Hobbies:

Studying Phonetic Symbols of English Language and Practicing Sports.

Signature:



Dr. Bellaouar Djamel
University 8 Mai 1945 Guelma