Brahim Chaourar

Married and has four children
P. O. Box 286574, Riyadh 11323, Saudi Arabia
Interests: Combinatorial Optimization, Matroids

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Education

- **PhD in Computer Science (Operations Research)** — 1989 - 1993
  J. Fourier University — *Grenoble, France*
- **CTURA Diploma in Adv. Discrete Optimization** — 1992 - 1993
  J. Fourier University - Ecole Polytechnique F. Lausanne — *Grenoble-Lausanne, France-Switzerland*
- **MSc in Operations Research** — 1988 - 1989
  J. Fourier University — *Grenoble, France*
- **BSc in Mathematics (Operations Research Major)** — 1984 - 1988
  H. Boumediene University — *Algiers, Algeria*
- **High School Diploma in Mathematics** — 1984
  Prince Abdelkader Secondary School — *Algiers, Algeria*

Awards & Honours

- **Best Teacher in Mathematics Award** — 2004
  Riyadh College of Technology — *Riyadh, Saudi Arabia*
- **PhD with Very High Honours** — 1993
  J. Fourier University — *Grenoble, France*
- **1st in the CTURA Diploma** — 1993
  J. Fourier University - Ecole Polytechnique F. Lausanne — *Grenoble-Lausanne, France-Switzerland*
- **3rd in the MSc of Operations Research** — 1989
  J. Fourier University — *Grenoble, France*
- **Fellowship for Graduate Studies (from three given in Mathematics)** — 1988 - 1993
  Ministry of Higher Education — *Algiers, Algeria*
- **1st in the BSc of Mathematics (Operations Research Major)** — 1988
  H. Boumediene University — *Algiers, Algeria*

Positions held

- **Associate Professor** — 2013 - date
  Al Imam University — *Riyadh, Saudi Arabia*
- **Assistant Professor** — 2007 - 2013
  Al Imam University — *Riyadh, Saudi Arabia*
- **Senior Lecturer** — 1997 - 2007
  Riyadh College of Technology — *Riyadh, Saudi Arabia*
- **Assistant Professor** — 1993 - 1995
  University of West Britain — *Brest, France*

- **Part-time Lecturer** January - June 1992
  National School of Public Works *Lyon, France*
- **Part-time Lecturer** September - December 1991
  J. Fourier University *Grenoble, France*
- **Part-time Lecturer** January - June 1991
  I.U.T II *Grenoble, France*

Courses taught

- **Discrete Mathematics Courses:** Introduction to Operations Research, Applied Combinatorial Optimization (MSc), Linear Programming, Discrete Mathematics, Combinatorics and Graphs, Random Processes, Computer Mathematics, Combinatorial Optimization (MSc).

- **Probability and Statistics Courses:** Elements of Probability, Descriptive Statistics, Introduction to Probability and Statistics.

- **Other Mathematics Courses:** Numerical Analysis, Precalculus, Calculus 1, Calculus 2, Linear Algebra and Differential Equations, Discrete Analysis.

- **Computer Courses:** Mathematica software, Pascal Language and Algorithms.

Professional Trainings

1. **Teaching Methods in Education Oriented to Knowledge Economy** 8-10 December 2007
   Al Imam University *Riyadh, Saudi Arabia*
2. **Leading in Academic Settings** 14-15 April 2009
   Al Imam University *Riyadh, Saudi Arabia*
3. **Program and Courses Specifications** 7-8 December 2009
   Al Imam University *Riyadh, Saudi Arabia*
4. **Discussion of Sections of the Knowledge Exam** 30 April - 3 May 2011
   Al Imam University *Riyadh, Saudi Arabia*
5. **Questions Review for the Knowledge Skills Exam** 14-18 January 2012
   Al Imam University *Riyadh, Saudi Arabia*
6. **University Teaching and Learning** 8-12 September 2012
   Al Imam University *Riyadh, Saudi Arabia*
7. **Internal Review for Programs, Courses and Key Performance Indicators** 9-11 May 2016
   Al Imam University *Riyadh, Saudi Arabia*

Academic Committees

1. **Mathematics Curriculum for Technology Colleges Diploma** 1998 - 1999
   General Organization for Technical Education and Vocational Training *Riyadh, Saudi Arabia*
2. **Mathematics Scientific Committee** 2005 - 2007
   Riyadh College of Technology *Riyadh, Saudi Arabia*

3.	**General Studies Department Council** *Riyadh College of Technology*	2003 - 2007 *Riyadh, Saudi Arabia*
4.	**Questions Bank for BSc Programs Admission** *General Organization for Technical Education and Vocational Training*	2006 - 2007 *Riyadh, Saudi Arabia*
5.	**Questions Bank for Recruitment of Saudi Teachers** *General Organization for Technical Education and Vocational Training*	2006 - 2007 *Riyadh, Saudi Arabia*
6.	**Arabic Translation of BSc of Applied Mathematics Program** *Al Imam University*	2007 - 2008 *Riyadh, Saudi Arabia*
7.	**NCCAAA Evaluation for BSc of Applied Mathematics** *Al Imam University*	2010 - 2011 *Riyadh, Saudi Arabia*
8.	**Exams Committee at College of Science** *Al Imam University*	2011 - 2014 *Riyadh, Saudi Arabia*
9.	**Mathematics Academic Accreditation** *Al Imam University*	2012 - date *Riyadh, Saudi Arabia*

- Chairman from 2015

10.	**Quality Unit at College of Science** *Al Imam University*	2012 - date *Riyadh, Saudi Arabia*
11.	**Research Center at College of Science** *Al Imam University*	2013 - date *Riyadh, Saudi Arabia*
12.	**PhD of Mathematics Curriculum** *Al Imam University*	2016 - date *Riyadh, Saudi Arabia*

Theses - Supervisions and Committees

1. Didi Biha, M., *The Multicut Problem*, MSc thesis in Operations Research, Joseph Fourier University, Grenoble, France, 1993, supervisor.

2. Lenocq, H., *Parallel Computers Systems Optimization*, MSc thesis in Computer Sciences, University of West Britain, Brest, France, 1994, supervisor.

3. Lebreton, P., *Scheduling in Flexible Workshops*, MSc thesis in Computer Sciences, University of West Britain, Brest, France, 1994, supervisor.

4. Mahlous, A. R., *Multipath Routing Using Max Flow Algorithms For Internet Traffic Engineering*, PhD thesis in Computer Sciences, Bradford University, United Kingdom, 2009, external supervisor.

5. Al-Rashidi, H. D., *Demonic Operators on Fuzzy Relations Illustration with Mathematica*, MSc thesis in Mathematics, King Saud University, Riyadh, Saudi Arabia, 2011, member of the jury.

6. Al-Mousa, M., *Relational and Kleene Algebras: new applications*, MSc thesis in Mathematics, King Saud University, Riyadh, Saudi Arabia, 2011, member of the jury.

7. Al-Omar, N., *On k-Prime Labeling of Graphs Related to Cycles*, MSc thesis in Mathematics, Al Imam University, Riyadh, Saudi Arabia, 2016, member of the jury.

8. Al-Askar, M., *The minimum K-cut problem*, MSc thesis in Mathematics, Al Imam University, Riyadh, Saudi Arabia, 2017, supervisor.

Publications

1. Chaourar, B., *Meyniel Graphs and Algorithms*, MSc thesis in Operations Research, Joseph Fourier University, 1989.

2. Chaourar, B., *An Example of Well Quasi Order for Graph-Trees Pairs*, 4th Maghrebian Conference on Engineer Numeric Models, Algeria, May 1992.

3. Chaourar, B. and Sebö, A., *Strong and Totally Strong Graphs*, IMAG-119/RR 902, RR/IMAG, Grenoble, October 1992.

4. Chaourar, B., *A Characterization of Greedy Bases in Matroids*, 2nd Working Conference on Algorithmic Approaches to Large and Complex Combinatorial Optimization Problems, Schloß Dagstuhl, Germany, May 1993.

5. Chaourar, B., *Hilbert Bases and Combinatorial Applications*, PhD thesis in Computer Sciences (Operations Research), Joseph Fourier University, 1993.

6. Chaourar, B., *Greedy Spanning Trees Packing*, 6th French-Japanese Days on Combinatorics, Optimization and Discrete Geometry, Paris, France, July 1994.

7. Chaourar, B., Abida, L. and Latef, K., *A Statistical Study about the Effect of Mathematics Marks on the Final Cumulative Average of Diploma Students*, Riyadh College of Technology, Saudi Arabia, 1999-2000.

8. Chaourar, B., *On Greedy Bases Packing in Matroids*, European Journal of Combinatorics 23, 2002, 769-776.

9. Chaourar, B., and Oxley, J., *On Series-Parallel Extensions of Uniform Matroids*, European Journal of Combinatorics 24, 2003, 877-879.

10. Chaourar, B., *Teaching Mathematics using Computers*, 3rd Saudi Technical Conference and Exhibition, Riyadh, Saudi Arabia, December 2004, Volume I, 28-36.

11. Chaourar, B. and Mahlous, A. R., *Optimizing QoS Resources in Series Parallel Networks*, Saudi 18th National Computer Conference, March 2006, Riyadh, Saudi Arabia.

12. Chaourar, B., *The Kth Best Spanning Tree is Polynomial in Series Parallel Graphs*, 3rd Saudi Science Conference, Riyadh, March 2007.

13. Chaourar, B., Mahlous, A. R., and Fretwell, R. J., *On Minimizing Unused Bandwidths in Series Parallel Networks*, 3rd Saudi Science Conference, Riyadh, March 2007.

14. Mahlous, A. R., and Chaourar, B., *Quality Of Service Routing with a MultiPath Algorithm*, 3rd Saudi Science Conference, Riyadh, March 2007.

15. Mahlous, A. R., Chaourar, B., and Fretwell, R. J., *A Comparison Study between a Unipath and a Multipath QoS Routing*, Eighth Informatics Workshop for Research Students Bradford UK (ISBN 978 1 85143 246 2) , June 2007, 158160.

16. Fourar Laidi, H., and Chaourar, B., *Combining Object and Planning Paradigms for Human Skeleton Movement Simulation*, Modeling and Simulation Conference 2007, Algiers, July 2007.

17. Chaourar, B., and Mahlous, A. R., *Minimizing Unused Bandwidths in Computers Networks*, Applied Computing and Informatics 6 (2), 2008, 15-22.

18. Chaourar, B., *On the Kth Best Base of a Matroid*, Operations Research Letters 36 (2), 2008, 239-242.

19. Mahlous, A. R., Chaourar, B., and Fretwell, R. J., *A Novel Path Determination for a Multipath Routing Using Max Flow Algorithm*, Ninth Informatics Workshop for Research Students Bradford UK (ISBN 978 1 85143 251 6), June 2008, 170173.

20. Mahlous, A. R., Chaourar, B., and Fretwell, R. J., *A Comparative Study between Max Flow Multipaths, Multi Shortest Paths and Single Shortest Path*, PGNet 2008 (ISBN: 978-1-902560-19-9).

21. Mahlous, A. R., Chaourar, B., and Fretwell, R. J., *MFMP: Max Flow Multipath Routing Algorithm*, Second UKSim European Symposium on Computer Modelling and Simulation, Liverpool, England, September 2008, 482487.

22. Chaourar, B., *On the Broadcast Routing Problem*, 5th Saudi Technical Conference and Exhibition, Riyadh, Saudi Arabia, January 2009, Volume II, 145-150.

23. Mahlous, A. R., Chaourar, B., and Mansour, M., *Performance Evaluation of Max Flow Multipath (MFMP) protocol with Congestion Awareness*, the IEEE 23rd International Conference on Advanced Information Networking and Applications (WAINA-09), Bradford, UK, May 26-29, 2009, (ISBN: 978-0-7695-3639-2).

24. Chaourar, B., Mahlous, A. R., and Fretwell, R. J., *On Minimizing Unused Bandwidths in Series Parallel Networks*, Journal of King Saud University - Science 21 (Special Issue), 2009, 21-24.

25. Chaourar, B., *An O(K n log[K n]) Algorithm for the Kth Best Spanning Tree in Series Parallel Graphs*, Arabian Journal for Science and Engineering 35 (1D), 2010, 29-35.

26. Mahlous, A. R., and Chaourar, B., *MFMP Vs ECMP under RED Queue Management*, International Journal of Computer Networks 4 (6), 2011, 397-402.

27. Chaourar, B., *A Characterization of Uniform Matroids*, ISRN Algebra, 2011, Article ID 208478, doi:10.5402/2011/208478.

28. Chaourar, B., *A Linear Time Algorithm for a Variant of the Max Cut Problem in Series Parallel Graphs*, arXiv 1606.05240, 2016.

29. Chaourar, B., *The Facets of the Bases Polytope and Two Consequences*, arXiv 1702.07128, 2017.

30. Chaourar, B., *On the Matroid Isomorphism Problem*, arXiv 1703.03744, 2017.

31. Chaourar, B., *A New Algorithm for Broadcast Routing in Series Parallel Networks*, submitted, 2017.

Research Projects

1. Chaourar, B., *The Importance of Locked Subgraphs in Solving Two Problems of Combinatorial Optimization*, Al Imam University Research Grant No 28, 2007-2009.

2. Chaourar, B., and A. R. Mahlous, *MFMP Vs ECMP under Different Queuing Approaches*, King Abdulaziz City for Sciences and Technology Research Grant No LGP-14-43, 2010-2011.

3. Chaourar, B., *A Characterization of Uniform Matroids by Using Locked Subsets*, Al Imam University Research Grant No 301216, 2010-2011.

4. Chaourar, B., *On the Max Cut Problem*, Al Imam University Research Grant No 331203, 2012-2013.

5. Chaourar, B., *A New Algorithm for Broadcast Routing in Series Parallel Networks*, Al Imam University Research Grant No 351223, 2014-2015.

Other Contributions

1. *RSA encryption* (in Arabic), General Studies Magazine, Riyadh College of Technology, Volume 1, 1426 H, 2005.

2. *Dijkstra Algorithm* (in Arabic), General Studies Magazine, Riyadh College of Technology, Volume 2, 1426 H, 2005.

3. *Science College Guide* (in Arabic), October 2016, Head of the Editing Committee.

4. *Strategic Plan of Science College - Horizon 1441 H* (in Arabic), October 2016, Reviewer.

5. *Duties Description for Science College* (in Arabic), February 2017, Member of the Editing Committee.

6. *Origins of Cryptanalysis* (in Arabic), Permanent Poster in the department of Mathematics and Statistics, Al Imam University, 2017.

7. *Academic and Administrative Processes for Teaching Staff* (in Arabic), in preparation, Head of the Editing Committee.