



# WAFIK HACHICHA

Prof. Ph.D, Eng. en Genie Industriel et Logistique

## سيرة ذاتية قصيرة

Industrial Engineering. He has an Industrial Engineer Diploma from the National School of Engineering of Tunis (ENIT, Tunisia). With professional experience in various industries, he has obtained his PhD in Mechanical and Manufacturing Engineering in 2009 and a Master's degree in Engineering in 2014 from the University of Sfax, Tunisia. He is a reviewer in many international journals, author or co-author of several books, journal articles and communications. His specialisation is about applied quantitative methods in quality management, process improvement, industrial engineering, and Supply chain management.

## الخبرات المهنية

### Professeur en Genie Industriel

سبتمبر 2019 - هنا ( 6 سنين, 8 شهر )  
*Institut Supérieur de Gestion Industrielle de Sfax, Sfax*

### Maitre de Conferences en Genie Industriel

سبتمبر 2015 - سبتمبر 2019 ( 4 سنين )  
*Institut Supérieur de Gestion Industrielle de Sfax, Sfax*

### Maitre Assistant en Genie Industriel

أغسطس 2009 - أغسطس 2015 ( 6 سنين )  
*Institut Supérieur de Gestion Industrielle de Sfax, Sfax*

### Assistant en Genie Industriel

سبتمبر 2007 - يوليو 2009 ( 1 سنين, 10 شهر )  
*Institut Supérieur de Gestion Industrielle de Sfax, Sfax*

### Assistant Contractuel en Genie Industriel

سبتمبر 2004 - سبتمبر 2007 ( 3 سنين )  
*Institut Supérieur de Gestion Industrielle de Sfax, Sfax*

### Ingénieur Méthode et R&D

أبريل 2001 - أغسطس 2004 ( 3 سنين, 4 شهر )  
*Societe Patisserie Masmoudi, Sfax*

### Ingénieur Production

يوليو 1999 - مارس 2001 ( 1 سنين, 8 شهر )  
*Ak Khoutaf - Sekkinox, Sfax*

## Mecanique et Ingenierie

2004

Mastère de recherche : *مطوق*

Ecole National d'Ingenieurs de Sfax, Sfax

Développement d'un modèle d'estimation des couts d'assemblages soudés

## Diplome National d'Ingenieurs

1999

Ingénierie : *مطوق*

Ecole National d'Ingenieurs de Tunis, Tunis

## تعاليم

### ...Operation Research (1) – LP, Simplex Method, Branch and Bound

سبتمبر 2019 - يونيو 2024 ( 4 سنين, 9 شهر )

College of Engineering in Taif University, Saudi Arabia

تيار (مسارات) التدريس : **ingénieur génie industriel**

- Introduction to Operations Research
- Formulation of linear programming problems
- Graphical solution
- The Simplex algorithm, Big M method and Two Phase method
- Duality-Primal Problem
- Sensitivity analysis ( Dual Price - Reduced Cost)
- Integer programming, 0-1 Integer programming and Mixed integer programming
- Branch and Bound and Cutting Plane Techniques
- Applications in Logistic and industrial Engineering Problems
- Introduction to the Problem complexity
- Excel Solver - Lingo Software

### Operation Research (2) - Network Flows Models, Dynamic Programming, Goal Programming

سبتمبر 2019 - يونيو 2024 ( 4 سنين, 9 شهر )

College of Engineering in Taif University, Saudi Arabia

تيار (مسارات) التدريس : **ingénieur génie industriel**

- Algorithms for Transportations and Assignments: The Stepping-Stone Method, The Hungarian Method
- Spanning tree, shortest-route algorithms, maximum-flow algorithms, minimum cost capacitated network algorithms, Critical path(CPM) algorithms
- Calcul recursive nature computation (such as Binomial Coefficients and Fibonacci Numbers and Sequence ), Knapsack Problem, Shortest-Route
- ...Problem, Multiperiod Production and Inventory Planning Problem
- Goal Programming (GP): Introduction to a multi-objective programming, Formulation, Goal Programming Algorithms, the Weights Method, the Preemptive Method

### Quality Control (Statistical Process Control)

سبتمبر 2019 - يونيو 2024 ( 4 سنين, 9 شهر )

College of Engineering in Taif University, Saudi Arabia

تيار (مسارات) التدريس : **ingénieur génie industriel**

- Use and interpret normal probability distribution in industrial engineering training
- Estimate and interpret Confidence Intervals
- Explain and interpret Hypothesis Testing to make statement(s) and decision regarding unknown population parameter values based on sample data
- Define and describe Quality Control tools and methods
- Design and interpret control charts for variables
- Estimate and interpret process and machine capability
- Analyze data using Ms Excel and Minitab software for statistical quality control

## Design of Industrial Experiments

سبتمبر 2019 - يونيو 2024 ( 4 سنين, 9 شهر )

College of Engineering in Taif University, Saudi Arabia

تيار (مسارات) التدريس : ingénieur génie industriel

l theory for experimental design (One-sample z-test, One sample t-test, Two-sample t-test (z-test), Paired t-test, F-test / Hartley's Fmax test, -  
One-way ANOVA, Two-way (taw-factor) ANOVA without Replication, Two-way (taw-factor) ANOVA with Replication  
...Apply When and How apply Full Factorial Designs, Fractional Factorial Designs, Taguchi Design and Response Surface Methodology -  
Apply Optimization using Design of experiments -  
cal models for designed experiments, perform data analysis using appropriate software, and communicate results without use of statistical jargon -  
ns for given problems: sample size determination, choice of levels of variables, designs with restrictions on randomization, utility functions for -  
.measuring design objectives, use of simulation to characterize properties of designs

## Production Planning & Control

سبتمبر 2019 - يوليو 2024 ( 4 سنين, 10 شهر )

College of Engineering in Taif University, Saudi Arabia

تيار (مسارات) التدريس : ingénieur génie industriel

Recognize the objectives, functions, applications of Production Systems, Production Planning and Control (PPC), and Operations Management▪  
Explain different qualitative and quantitative demand forecasting techniques mainly regression analysis and time series based models▪  
Management concept and the different Inventory control models and techniques such as Economic order quantity, Economic Production Quantity, etc▪  
arize various Aggregate Production Planning strategies (level, mixed, chase) and policies, Materials Requirements Planning records and calculation▪  
ns (Apply the assignment method for loading jobs (0-1 formulation, Least Branch and Bound, the Hungarian Method), Name, describe and apply▪  
ncing rules (FCFS, LPT, etc.), Use Johnson's rule, Define finite capacity scheduling, Use linear programming models to solve scheduling problems, etc  
.Recognize the concept of the Kanban Method, Just in time (JIT), and introduce the lean Manufacturing concept▪

## Modeling of Logistics Systems - Markov Chains, Petri Net

سبتمبر 2010 - يونيو 2019 ( 8 سنين, 9 شهر )

Institut Supeirur de Gestion Industrielle de Sfax

تيار (مسارات) التدريس : LAGL

## Industrial Systems Modeling & Simulation

سبتمبر 2004 - يونيو 2018 ( 13 سنين, 9 شهر )

تيار (مسارات) التدريس : ingénieur génie industriel MPGL LAGL

## Documentation of Quality Systems (ISO 9001 - ISO 22001 - ISO 14001)

سبتمبر 2004 - يونيو 2019 ( 14 سنين, 9 شهر )

Institut Supérieur de Gestion Industrielle de Sfax

تيار (مسارات) التدريس : MPQSE LAGQ

الأنشطة البحثية

- en Ammar, Abdelkarim Elloumi, **Wafik Hachicha (2023)**. A new rolling forecasting framework using Microsoft Power BI for data study in a pharmaceutical industry, *Annales Pharmaceutiques Françaises*, In press 2023, DOI: [10.1016/j.pharma.2023.10.013](https://doi.org/10.1016/j.pharma.2023.10.013)
- Bouri, S.; Hajji, S.; Aljuaid, A.M.; **Hachicha, W. (2023)**. The Socio-Economic Effects of Floods and Ways to Prevent Them: A Case Study of the Khazir River Basin, Northern Iraq. *Water* 2023, 15, 4271. DOI: [10.3390/w15244271](https://doi.org/10.3390/w15244271)
- Wafik Hachicha, **(2022)**. Empirical Safety Stock Estimation Using GARCH Model, Historical Simulation, and Extreme Value Theory: A Comparative Study, *Applied Sciences*, 12(19), 10023. DOI: [10.3390/app121910023](https://doi.org/10.3390/app121910023)
- Marco D. R. Gomes da Silva, Riadh Ben Salah, Awad M. Aljuaid, Wafik Hachicha and Mohamed Bouaziz **(2022)**. Antioxidant and Polysaccharide Extracted from *Ceratonia siliqua* L. and Its Involvement in the Enhancement Performance of Whipped Cream, *Separations*, 9(5), 117. DOI: [10.3390/separations9050117](https://doi.org/10.3390/separations9050117)
- msalmi, Awad M. Aljuaid, **Wafik Hachicha** and Sami Hammami **(2022)**. Joined Efficiency and Productivity Evaluation of Tunisian Commercial Seaports Using DEA-Based Approaches, *J. Marine Science Engineering*, 10(5), 626. DOI: [0.3390/jmse10050626](https://doi.org/10.3390/jmse10050626)
- Hachicha**, Awad M. Aljuaid, Neila Khabou Masmoudi and Faouzi Masmoudi. **(2022)** Multi-Objective Design Optimization of Flexible Systems Using Design of Simulation Experiments: A Comparative Study, *Machines* 10(4), 247; DOI: [10.3390/machines10040247](https://doi.org/10.3390/machines10040247)
- Aljuaid M., **Wafik Hachicha** and Faouzi Masmoudi **(2022)** Design of Supply Chain Transportation Pooling Strategy for Reducing CO2 Emissions Using a Simulation-Based Methodology: A Case Study, *Sustainability*, 14(4), 2331 DOI: [10.3390/su14042331](https://doi.org/10.3390/su14042331)
- msalmi, Awad M. Aljuaid and **Wafik Hachicha (2022)**. Seaport Terminals Risks Prioritization Using a Structural Modeling-Based Approach: A Real Case Study, *J. Marine Science Engineering*, 10(2), 217, DOI: [10.3390/jmse10020217](https://doi.org/10.3390/jmse10020217)
- llouche, Salem Bouri, Awad M. Aljuaid and Wafik Hachicha **(2022)** Assessment of Seawater Intrusion in Coastal Aquifers Using Multivariate Statistical Analyses and Hydrochemical Facies Evolution-Based Model, *Int. J. Environ. Res. Public Health*, 19(1),155; DOI:[10.3390/ijerph19010155](https://doi.org/10.3390/ijerph19010155)
- Awad M. Aljuaid **(2021)** Modeling sustainable risks mitigation strategies using a morphological analysis-based approach: A real case study, *Sustainability*, 13(21), 12210 DOI: [10.3390/su132112210](https://doi.org/10.3390/su132112210)
- yaoui, Sonda Bousnina, Salem Bouri, **Wafik Hachicha**, Awad M. Aljuaid **(2021)**. Using a Mamdani Fuzzy Inference System Model Quality in an Agri-Environmental Context: Case of the Hammamet-Nabeul Shallow Aquifer (Tunisia), *Water*, 13(18,) 2507 DOI: [10.3390/w13182507](https://doi.org/10.3390/w13182507)
- Frikha, A., **Wafik Hachicha**, Aljuaid, A.M., Andejany. **(2021)** Solving a multiple user energy source selection problem using a fuzzy multi-criteria group decision-making approach, *Energies*, 14(14), 4313 DOI: [10.3390/en14144313](https://doi.org/10.3390/en14144313)
- Hachicha**, Awad M. Aljuaid **(2021)** Integrating quality tools and methods to analyze and improve a hospital sterilization process, *Healthcare*, 9(5), 544, DOI: [10.3390/healthcare9050544](https://doi.org/10.3390/healthcare9050544)
- Hachicha**, Awad M. Aljuaid **(2021)** Prioritization of the Best Sustainable Supply Chain Risk Management Practices Using a Structural Analysis Based-Approach, *Sustainability*, Vol. 13, No. 9 2021, 13(9), 4608; DOI: [10.3390/su13094608](https://doi.org/10.3390/su13094608)
- a, Younes Boujelben, Awad M. Aljuaid **(2021)**. Linking Entrepreneurial Innovation to Effectual Logic, *Sustainability*, Vol. 13, No. 5, 2626; DOI:[10.3390/su13052626](https://doi.org/10.3390/su13052626)
- Hachicha**, Awad M. Aljuaid **(2021)**. Sensitivity Analysis of the Optimal Inventory-Pooling Strategies According to Multivariate Demand Dependence, *Symmetry*, Vol. 13, No. 2, 328; <https://doi.org/10.3390/sym13020328>
- Awad M. Aljuaid **(2021)** Sustainable Configuration of the Tunisian Olive Oil Supply Chain using a Fuzzy TOPSIS-based approach, *Sustainability*, Vol. 13, No. 2, 722; DOI:[10.3390/su13020722](https://doi.org/10.3390/su13020722)
- Hachicha (2020)** "The Impact of Demand Dependence on Optimal Inventory Level and Pooling Effect, International Journal of Industrial Engineering & Management Science, Vol. 7, No. 2, pp 5-63
- Wafik Hachicha (2020)** "Solving a routing problem of collect infectious healthcare waste with stochastic demand: case of Sfax Governorate in Tunisia, *World Review of Intermodal Transportation Research*, Vol. 9, No. 3, pp. 297-311

## Enadrement de Theses

**Student:** Amira KAMMOUN .1

**Title:** Evaluation and improvement of sterilization services performance: the case of Sfax hospitals

**Major:** Management Science: Logistics and Production

**Institution:** Faculty of Economics and Management of Sfax, Tunisia

**Defended on** January 2019

**Student:** Mouna DERBEL .2

**Title:** The effect of demand dependency structure on the determination of the optimal procurement strategy using copula

**Major:** Management Science: Logistics and Production

**Institution:** Faculty of Economics and Management of Sfax, Tunisia

**Defended on** July 2019

**Student:** Manel MSALMI .3

**Provisional Title:** Using Prospective analysis base framework for the risk management in Supply Chains

**Major:** Management Science: Logistics and Production

**Institution:** Faculty of Economics and Management of Sfax, Tunisia

**Defended on** July 2019

**Student:** Rim DAOUD .4

**Title:** Incinerator Locating Problem and Healthcare Waste Routing Problem in Sfax Governorate- Tunisia

**Major:** Management Science: Operational Research and Decision Aid Support

**Institution:** Faculty of Economics and Management of Sfax, Tunisia

**Defended on** January 2020

**Student:** Ahlem JALLELI .5

**Title:** Sustainable Configuration of the Tunisian Olive Oil Supply Chain

**Major:** Management Science: Operational Research and Decision Aid Support

**Institution:** Faculty of Economics and Management of Sfax, Tunisia

**Defended on** June 2021

## التخصصات

Conception et Exploitation des Systèmes de Production (Design and Manufacturing Management Systems)

Modélisation & Amélioration des Performances des Systèmes Complexes (Complex Systems Modeling & Performance Improvement)

Management des Risques et Maitrise des processus Industriels (Risk Management & Process Control and Monitoring)

Protection de l'Environnement et Développement Durable (Environmental Protection and Sustainable Development)