

FABIO FRUGGIERO, PhD., Eng.,



CONTACT DETAILS

Phone (w) +39 0971 205196
(fax) +39 0971 205160
(cell) +39 3333 202007

Nationality: ITALIAN

Date of Birth: 02-02-1979 in Salerno

E-mail: fabio.fruggiero@unibas.it;

Address

School of Engineering -
Mechanical Engineering
University of Basilicata
Via Ateneo Lucano 10 -
85100 - Potenza
IT

Fabio Fruggiero is an ASSISTANT PROFESSOR since 2008 in Industrial Systems Engineering at the School of Engineering - University of Basilicata - ITALY -

BIOGRAPHY

FABIO FRUGGIERO graduated in Mechanical Engineering at the University of Salerno with a dissertation about newly formed meta-heuristics for the industrial scheduling optimisation, 2004. His dissertation was for published work in the field of industrial optimization at the ICPRI8 conference.

He conducted his PhD in Mechanical Engineering at the University of Salerno - Italy with a dissertation about Digital Factory Application from Manufacturing to Service Environment, 2008.

Formerly, in 2008, He was post PhD student at the Mechanical Engineering Department of the University of Salerno with main topic of research: Operations Management Strategies for HealthCare optimisation.

Currently, he is Assistant Professor, and responsible of the area and lab, in Industrial Systems Engineering at the School of Engineering - Mechanical Engineering Area - of the University of Basilicata- Italy. He runs courses for both Industrial System Engineering and Operations Management.

He works as referee for different International Journals (e.g., IJSOI, IJAMT, IJPR, CPPB, EIS, TPMR, TSMSI, IJEBM, UHSE, Cogent OA etc ...) and the national minister of research. Track Chair for Human Factor and Ergonomics in IEOM - Industrial Engineering and Operations Management Society - conferences. He is editor Of Cogent Engineering Journal and Industrial and Systems Engineering. Fabio has been engaged in the auto sector for both Human Factor analysis and Ergonomic research, scheduling optimization, production management. He has collaboration with firms of the production and service sector applying the results of his work to help multinational companies and SMEs to generate safety and Optimize services and profits.

He is acting as consultant to several major companies and patent initiatives (FCA, CRF, PintoTecno Srl, Metecno, Gallotta produzioni, M.I.p. Srl) . He is active in initiative for knowledge transfer to industry.

He has been conducting research with Ryerson University - Canada; Cardiff School of Engineering - UK; Manchester University - UK; Cork Institute of Technology - IR; Universidad Politecnica de Madrid- Spain (performing lectures and research initiatives); University Of Technology of Troyes - France.

His research's activity encompassed the area of: Human Factor and Corporate Strategy; Industrial System Design Processes; Additive Manufacturing and

Advanced Manufacturing; Simulation and Virtual modelling; Agent Based Modelling; Assembly Line Balancing; HealthCare Management and Clinical Risk Assessment; Scheduling and Optimisation; Safety and Risk analysis.

AWARDS and PRIZES

Winner: Best Practices for Innovation in 2001 - Industrial Requalification.

Winner: Best Research award, ICMR07 - 5th International Conference on Manufacturing Research incorporating the 23rd National Conference on Manufacturing Research conference in Leicester, United Kingdom - 2007

TEACHING (since 2008)

ING0220 Industrial Systems Engineering (bachelor)

The course covers methods and tools to plan industrial systems. The principal key performance indicators are defined. Performances Measurement in TQM approach are discussed. The facility layout problem (group technology and cellular manufacturing strategies as well) is analysed and resolved according to main approaches as for literature. Anthropometry is studied and applied in the workstation design and balancing. Elements of safety engineering for reduction of human errors in the operations of machines, accident-related behaviour models, safety management aspects are introduced. Material handling systems, Warehouse Facility Planning, Fault diagnosis and Maintenance strategies, Safety and Risk Analysis are analyzed and contextualized inside the course. Case studies and exercises and projects are performed.

ING0068 Operations Management (master)

The course deals with Operations Strategies and competitiveness in industrial systems. Inside the courses are analysed the principal methods for forecasting analysis and error measurement. The role of time, product (and Its presentation in BoM), information and uncertainty is stressed. The Inventory Control techniques are discussed and elaborated. Strategies for JIT and MRP implementation and management are discussed. The role of capacity in system is stressed. Main operations scheduling approaches (Neural Networks, Genetic Algorithms, Tabu Search, Ants System, Bees Algorithms) are discussed and implemented for system optimization. The main aspects of Supply chain Management are introduced. The role of Operation Strategies for the management of innovative products and project is elaborated. Student projects and exercises are performed.

REFEREED ARTICLES TO INTERNATIONAL CONFERENCE:

- F. Fruggiero, C. Lovaglio, S. Miranda, S. Riemma (2005), *From Ants Colony to Artificial Ants: a nature inspired algorithm to solve job scheduling problems*. In **Proceedings of ICPR18 - 18th International Conference on Production Research** - University of Salerno - ITALY, 30th July - 4th August 2005.
- F. Fruggiero, A. Lambiase, F. Negri (2006), *Design and Optimisation of a Facility Layout problem in Virtual Environment*. In **Proceedings of ICAD06 - "4th International Conference on Axiomatic Design"**, Firenze - ITALY, 13th-17th June 2006.
- F. Fruggiero, M. de Falco, A. Lambiase, F. Lambiase (2006), *Trend and perspectives on Virtual Reality usefulness in manufacturing*. In **Proceedings of FAIM06 - Intelligent Manufacturing Now - The 16th International Conference in Flexible Automation and Intelligent Manufacturing**, Limerick - IRELAND, 26th- 28th June 2006.
- F. Fruggiero, A. Lambiase, D. Fallon (2007) *The balancing problem in an Emergency Room based on Ant Colony Optimisation algorithm*. In **Proceedings of FAIM07- Intelligent Manufacturing Now - The 17th International Conference in Flexible Automation and Intelligent Manufacturing**, Philadelphia - USA, 18th - 20th June 2007.
- F. Fruggiero, A. Lambiase, F. Lambiase (2007), *Ergonomics*

- characterization in *Digital Manufacturing: A new ergonomic index proposal*. In **Proceedings of FAIM07- Intelligent Manufacturing Now - The 17th International Conference in Flexible Automation and Intelligent Manufacturing**, Philadelphia - USA, 18th - 20th June 2007.
- F. Fruggiero, C. Di Martino, A. Lambiase, F. Lambiase (2007), *Making Virtual the Reality: A Factory Planning across an integrated Ergonomic-Digital Factory approach*. In **Proceedings of CARV07- 2nd International Conference on Changeable, Agile, Re-configurable and Virtual Production - 22th-24th July 2007**, Toronto, Ontario, Canada.
 - F. Fruggiero, A. Lambiase (2007) *Evolutionary Computing and Swarm Intelligence algorithms for JSSP: Genetic Algorithm vs. Ant Colony Optimisation techniques*. In **Proceedings of IPMM07 - 6th International Conference on Intelligent Processing and Manufacturing of Materials - 25th 29th June 2007**, Salerno, Italy.
 - F. Fruggiero, A. Lambiase, S. Vitale (2007), *Computer Simulation in Health Care Service: The Emergency Department of CUH*. In **Proceedings of ICMR07 - 5th International Conference on Manufacturing Research incorporating the 23rd National Conference on Manufacturing Research - 11th - 13th September 2007**, Leicester, United Kingdom (Prized as best research award)
 - F. Fruggiero, A. Lambiase, L. Zampognaro (2009), *Strategic Resources Management In Health Care System: The ED case*. In **Proceedings of FAIM09 - 19th Flexible Automation and Intelligent Manufacturing- 6th - 8th July 2009**, University of Teesside, Middlesbrough, United Kingdom. ISBN 978-0-9562303-3-1
 - F. Fruggiero, A. Lambiase (2009), *The Digital Factory Concept from Manufacturing to Services Environment*. In **Proceedings of FAIM09 - 19th Flexible Automation and Intelligent Manufacturing- 6th - 8th July 2009**, University of Teesside, Middlesbrough, United Kingdom. ISBN 978-0-9562303-3-1.
 - F. Fruggiero, A. Lambiase, M. Sammarco (2010), *Overall Measurement Of Process Equipment Effectiveness For Performance Monitoring and Decisions Assess*. In: **Proceedings of FAIM10 - 20th International Conference on Flexible Automation and Intelligent Manufacturing**. California State University East Bay, USA, July 12-14th 2010, p. 1130-1140
 - F. Fruggiero, A. Lambiase, A. Braione (2010), *Towards An Optimal Mix In Planning And Scheduling Of Operating Theatres* . In book : **OPERATIONS RESEARCH FOR PATIENT - CENTERED HEALTH CARE DELIVERY**. Ed. Franco Angeli p. 337-350, ISBN/ISSN: 9788856825954
 - F. Fruggiero, R. Iannone, S. Riemma (2011), *The Care For Planning and Control in a Framework for Hospital Management*. In: -. **Proceedings of IADIS International conference e-Health 2011**. Rome - Italy, JULY 20 - 22, 2011, p. 43-53, ISBN: 9789728939496
 - F. Fruggiero, A. Lambiase, M. Sammarco, M. Treves (2011) *Il Piano industriale dell'azienda PINCART - Un percorso tra realtà e ipotesi (Riquilificazione Processo Produttivo)*. In: -. *Il Piano Industriale dell'Azienda PINCART - Un percorso tra realtà ed ipotesi - 5° PREMIO BEST PRACTICE PER L'INNOVAZIONE*. 24-25 Giugno 2011, vol. Vol. Cd, p. 1-44, A cura di Commissione Consulenza del Gruppo Servizi Innovativi e Tecnologici di Confindustria Salerno
 - F. Fruggiero, Iannone R., Martino G., Miranda S., Riemma S. (2012), *A Forecast model for pharmaceutical requirements based on Artificial Neural Networks*. In: **IEEE INTERNATIONAL CONFERENCE ON SERVICE OPERATIONS AND LOGISTICS, AND INFORMATICS (SOLI), 2012**. p. 263-268, Suzhou, China:-, ISBN: 9781467324007, Suzhou, China, 8-10 July 2012, doi: 10.1109/SOLI.2012.6273543
 - F. Fruggiero F Packinather M.S., Yuce B., Pham D.T., Lambiase A., Mastrocinque E., (2014). *Novel Genetic Bees Algorithm applied to single machine scheduling problem*. In. **2014 World Automation Congress (WAC)** p. 906-911, IEEE, ISBN: 9781889335490, Kona, Big Island Of Hawaii, August 3-7 2014, DOI: 10.1109/WAC.2014.6936194
 - F. Fruggiero, Fera M., Iannone R., Lambiase A., (2015). *Work control in balanced DRC systems supported by negotiation procedures between autonomous agents*. In **15th IFAC SYMPOSIUM ON INFORMATION CONTROL PROBLEMS IN MANUFACTURING - INCOM 2015** Volume 48, Issue 3, 2015, Pages 733-740. DOI. 10.1016/j.ifacol.2015.06.170
 - F. Fruggiero F., Fera M., Miranda M., Lambiase A., Macchiaroli R., (2015),

Relationship between the design height of the shelves in industrial warehouses and their heat release rate. In **15th IFAC SYMPOSIUM ON INFORMATION CONTROL PROBLEMS IN MANUFACTURING** – INCOM 2015 Volume 48, Issue 3, 2015, Pages 1720-1725-740. DOI. 10.1016/j.ifacol.2015.06.334

- F. Fruggiero, S. Riemma, Y. Ouazene, R. Macchiaroli, V. Guglielmi, (2016). *Incorporating The Human Factor within the Manufacturing Dynamics* - **IFAC PapersOnline** 49-12 pp. 1691-1696.

BOOKS

- F. FRUGGIERO, LAMBIASE A, BRAIONE A (2010). *Towards An Optimal Mix In Planning And Scheduling Of Operating Theatres.* In: -. **Operations Research For Patient - Centred Health Care Delivery.** vol. Vol 1, p. 337-350, FrancoAngeli, ISBN: 9788856825954
- F. FRUGGIERO, Marcello Fera, Alfredo Lambiase, Giada Martino, Maria Elena Nenni (2013). **Production Scheduling Approaches for Operations Management.** In: INTECH. (a cura di): Massimiliano M. Schiraldi, *Operations Management.* p. 113-139, INTECH, ISBN: 97895351110132, doi: 10.5772/55431

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- F. Fruggiero, A. Lambiase, D. Fallon (2008) *Computer Simulation and Swarm Intelligence organization into an Emergency Department: A Balanced approach across Ant Colony Optimisation.* In **INTERNATIONAL JOURNAL OF SERVICE OPERATION AND INFORMATICS (IJSOI)** – Vol. 3, No. 2, pp. 143 – 161. DOI: 10.1504/IJSOI.2008.019330
- F. Fruggiero, M. Sammarco, W.P. Neumann, A. Lambiase (2013) *Agent Based modelling of movement rules in DRC systems for volume flexibility: Human Factor and Technical Performance.* In **INTERNATIONAL JOURNAL OF PRODUCTION RESEARCH (IJPR)** – Vol. 52, No. 3, pp. 1 – 18. DOI 10.1080/00207543.2013.807952
- F. Fruggiero, B. Yuce, E. Mastrocinque, M.S. Packianather, D. Pham, A. Lambiase (2014), *Neural Network Design and Feature selection using Principal component Analysis and Taguchi Method for Identifying Wood Veneer Defects.* In **PRODUCTION & MANUFACTURING RESEARCH (P&MR)** – Vol. 2, No. 1, pp. 291 – 308. DOI 10.1080/21693277.2014.892442.
- F. Fruggiero, G. Costabile, M. Fera, A. Lambiase, D. Pham. (2016). *Cost models of additive manufacturing: A literature review.* In **INTERNATIONAL JOURNAL OF INDUSTRIAL ENGINEERING COMPUTATIONS** – VOL. 8 NO.2 PP. 263-283. DOI 10.1080/23311916.2016.1261503
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- F. Fruggiero, M. Fera, A. Lambiase, R. Macchiaroli, S. Miranda (2017), *The role of uncertainty in supply chains under dynamic modelling.* In **INTERNATIONAL JOURNAL OF INDUSTRIAL ENGINEERING COMPUTATIONS** – VOL. 8 NO.1 PP. 119-140. DOI 10.5267/j.ijiec.2016.6.003
- F. Fruggiero; Fera, M; Macchiaroli, R.; Lambiase, A. (2017), *Risks prioritization in decision making for wind energy investments using analytic network process (ANP).* pp.2567-2573. In **INTERNATIONAL JOURNAL OF APPLIED ENGINEERING RESEARCH** – ISSN:0973-4562 vol. 12 (10)
- F. Fruggiero, Fera, M.; Macchiaroli, R.; Lambiase, A.; Miranda, S. (2017) *Application of a business process model (BPM) method for a warehouse RFID system implementation.* DOI:10.3233/RFT-170166. pp.57-77. In **INTERNATIONAL JOURNAL OF RF TECHNOLOGIES: RESEARCH AND APPLICATIONS** – ISSN:1754-5730 vol. 8 (1-2)
- F. Fruggiero; Di Pasquale, V.; Iannone, R.; Miranda, S. (2017), *A model for break scheduling assessment in manufacturing systems.* DOI:10.1016/j.cie.2017.05.017. In **COMPUTERS & INDUSTRIAL ENGINEERING** – ISSN:0360-8352
- F. Fruggiero, Fera, M; Costabile, G.; Lambiase, A.; Pham, D.T (2017) *A new mixed production cost allocation model for additive manufacturing*

