

Fanshawe College

## FIRST: Fanshawe Innovation, Research, Scholarship, Teaching

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Documentation (Approvals etc...)

Aerospace Operations Management

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2022

### FANS04057 CVS Description - non-funded

Fanshawe College

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Ontario College Quality Assurance Service

Service de l'assurance de la qualité des  
collèges de l'Ontario

# Aerospace Operations Management

Validated

Description

Fanshawe College | APS # FANS04057 | MTCU # 78900

Ontario College Graduate Certificate | No funding requested

## Purpose

The one-year Aerospace Operations Management graduate certificate will be designed for domestic and international graduates of undergraduate engineering programs who need practical and complementary experience with the management of aerospace operations, including aerodrome facilities design, functioning, and security; aircraft manufacturing and maintenance certifications; aerospace logistics and resource planning; production safety and ergonomics; aerospace projects; quality and process development and improvement; and applications for remotely-piloted aerial systems. Students will gain hands-on experience with leading aerospace industry simulation and enterprise resource planning software while also developing their business communication and ethical leadership skills.

Graduates of the Aerospace Operations Management will be well-positioned for employment in the aerospace industry beginning with jobs requiring skills in aircraft maintenance and repair (e.g., aircraft design engineer, quality and certifications analyst, structural assembler, industrial or manufacturing engineer, project analyst and project coordinator) leading to supervisory and management roles in operations (e.g., maintenance operations coordinator, program coordinator, operations manager).

## Admission Requirements

Ontario College Diploma, Ontario College Advanced Diploma, Degree, or equivalent. Fanshawe College Graduates of the Aircraft Structural Repair Technician Ontario College Certificate Program will also be considered.

## Occupational Areas

Graduates of the Aerospace Operations Management will be well-positioned for employment in the aerospace industry beginning with jobs requiring skills in aircraft maintenance and repair (e.g., aircraft design engineer, quality and certifications analyst, structural assembler, industrial or manufacturing engineer, project analyst and project coordinator) leading to supervisory and management roles in operations (e.g., maintenance operations coordinator, program coordinator, operations manager).

National Occupational Classification (NOC) Code(s):

Employment information for prospective students based on EMSI data for the following NOC codes:

- 1215 Supervisors, Supply chain, Tracking, and Scheduling Coordination Occupations: Projected Ontario growth from 28, 097 jobs in 2022 to 28, 838 in 2028. Projected London growth from 843 jobs in 2022 to 888 jobs in 2028.
- 0911 Manufacturing Managers: Projected Ontario growth from 32, 568 jobs in 2022 to 33, 201 in 2028. This NOC code is not projected to grow in London, specifically.
- 0211 Engineering Managers: Projected Ontario growth from 13, 076 jobs in 2022 to 14, 808 in 2028. Projected London growth from 474 jobs in 2022 to 570 jobs in 2028.

## Laddering Opportunities

Incoming pathways:

Ontario College Diploma programs:

- Aviation Technician - Aircraft Maintenance
- Aviation Technician - Avionics Maintenance
- Business - Supply Chain & Operations

Ontario College Advanced Diploma program:

- Aviation Technology - Aircraft Maintenance & Avionics

Outgoing pathways:

- Bachelor of Commerce with concentration in Operations Management
- Bachelor of Management and Organizations Studies with specialization in Commercial Aviation Management
- Graduates with a first degree can go on to complete a Master of Business Administration in Operations Management

## Program VLOs

1. Identify and critically assess solutions to materials supply and capacity problems to eliminate non-value-added activities from the supply chain, and ensure customer satisfaction.
2. Define and develop innovative aerospace product design to ensure an inclusive user experience.
3. Evaluate new and existing aerodrome operations and facilities to select and recommend strategies that maintain and enhance safety and security.
4. Develop and control aerodrome project plans and schedules using software for materials and operations management to meet organizational goals.
5. Apply Lean Six Sigma methodologies to improve the system performance and quality of the design and production of aerospace components, processes, systems and operations.
6. Manage client and stakeholder expectations through professional, clear, and timely written, verbal, and non-verbal communication of key information and updates.
7. Manage aerospace product manufacturing operations using strategies that optimize production and meet targets.
8. Make ethically sound decisions to protect consumers and maintain the organization's reputation and integrity within the aerospace corporate world.
9. Manage the scope, costs, time, and quality of aerospace projects and operations while ensuring and satisfying the needs of the customer and other stakeholders.
10. Oversee operations of Unmanned Aerial Vehicle applications within commercial and military industries in adherence to all regulations.
11. Integrate ergonomics and 'human in the loop' strategies into work processes to reduce injuries and streamline productivity and efficiency in operations.
12. Analyze and solve aerospace operations problems using technical mathematics and appropriate software.
13. Complete all work in compliance with current legislation, airworthiness standards, manufacturers' specifications, and health and safety regulations.

## Curriculum

- **AVIA-7001 - Process Simulation in Aerospace Manufacturing**

> Semester 1 | 75 hours

This course introduces simulation as a problem-solving tool. The students will learn how to use a

discrete event simulation software to proactively design and evaluate existing and newer processes (e.g., airport capacity planning, passenger boarding strategies).

- **AVIA-7002 - Project Management**

> Semester 1 | 45 hours

In this course, students will acquire the skills to develop, design, manage, plan, and schedule aerospace projects. Students will undertake feasibility analyses and environmental and social constraint studies, and they will identify and apply a range of controls for project cost, timelines, and technical performance.

- **AVIA-7003 - Business Ethics and Communication**

> Semester 1 | 45 hours

The students will study corporate governance and social responsibilities from a pragmatic business and an ethical standpoint. This course also examines a corporation's ethical responsibilities to its employees and customers, and to the global marketplace.

- **AVIA-7004 - Lean Six Sigma and Process Improvement**

> Semester 1 | 45 hours

In this course, students will learn about the principles of Lean and Six Sigma. The course spans across the several domains of the DMAIC methodology. Students will use these tools to improve quality and eliminate waste and defects in production.

- **AVIA-7005 - Aerospace Leadership and Operations**

> Semester 1 | 60 hours

This course will provide students with an opportunity to learn key elements involved in an operations-based leadership role for Aerospace Manufacturing. The course focuses on the primary responsibilities and interactions of an operations leader, including production metrics performance management, resource management, and process improvement.

- **AVIA-7006 - Aerospace Logistics and Resource Planning**

> Semester 1 | 75 hours

This course provides a strong foundation for logistics leaders. In this course, students will become familiar with the functionality of SAP. Students will explore how SAP can be used to run the operations side of the business, and will receive hands-on training in using SAP.

- **AVIA-7007 - Aerodrome Facilities Design, Operations, and Security**

> Semester 2 | 45 hours

This course teaches the principles of facility design and operations in aviation, including aerodrome operations and security. The course concludes with a project to design and evaluate a mock aerodrome facility.

- **AVIA-7008 - Production Safety and Ergonomics**

> Semester 2 | 45 hours

Worker injuries and lost time are a growing concern in operations. This course provides a deeper understanding of worker fatigue, cumulative trauma, injuries, and improving aspects of industrial

workload and shift work. Further, students learn about the ergonomic work designs and use of machines, to improve throughput and productivity of systems, thereby improving profits. Students learn to use the principles of ergonomics to improve product safety and human well-being.

- **AVIA-7009 - Business Operations Technology**

> Semester 2 | 75 hours

This course provides an overview of technology being used to run business operations including Enterprise Resource Planning (ERP) software.

- **AVIA-7010 - Unmanned Aerial Vehicle Applications and Operations**

> Semester 2 | 60 hours

This course enables students to develop an understanding of commercial applications and operations of UAVs. This course will enable the students to manage entrepreneurial research and day-to-day operations for the UAV industry. Further, students will learn about how to absorb these new technologies in supply chain processes, thereby, fulfilling a market gap.

- **AVIA-7011 - Aircraft Certification and Operations**

> Semester 2 | 45 hours

This course prepares students to use Canadian aviation regulations and certification procedures and conduct day-to-day operations with Airworthiness standards. The students will learn how to manage the certification procedures, including manufacturing and in-service phases.

- **AVIA-7012 - Aerospace Product Design and Development**

> Semester 2 | 75 hours

In this course, students will learn how to design and develop products in the realm of aerospace. The course also provides a detailed understanding for students of 3D printing.

## VLO Mapping

	VLO 1	VLO 2	VLO 3	VLO 4	VLO 5	VLO 6	VLO 7	VLO 8	VLO 9	VLO 10	VLO 11	VLO 12	VLO 13
AVIA-7001		X	X	X			X		X			X	X
AVIA-7002		X	X	X	X	X	X	X	X				X
AVIA-7003						X		X					X
AVIA-7004	X		X		X		X	X	X				X
AVIA-7005	X		X	X	X	X	X	X	X			X	X

	VLO 1	VLO 2	VLO 3	VLO 4	VLO 5	VLO 6	VLO 7	VLO 8	VLO 9	VLO 10	VLO 11	VLO 12	VLO 13
AVIA-7006	X			X					X			X	X
AVIA-7007		X	X	X	X		X	X	X	X	X	X	X
AVIA-7008		X	X		X		X	X	X		X	X	X
AVIA-7009	X			X					X			X	X
AVIA-7010	X							X	X	X			X
AVIA-7011			X		X		X	X	X	X			X
AVIA-7012		X	X	X	X			X	X		X	X	X

## Certification/Accreditation

### Certification type

None exist.

## Contact Information

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