



PFE BOOK

2025

PURSUIT AEROSPACE TUNISIA



ALWAYS PURSUING BETTER

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ABOUT US

PURSUIT AEROSPACE IS A MULTINATIONAL COMPANY BASED IN TUNISIA SINCE 2000, OPERATING IN THE AEROSPACE SECTOR.

WE ARE A GLOBAL PROVIDER OF SOLUTIONS FOR WEAR, HEAT, AND CORROSION APPLICATIONS, AND A LEADING MANUFACTURER OF COMPONENTS AND MATERIALS FOR THE AEROSPACE INDUSTRY.

WITH DECADES OF EXPERIENCE AND EXPERTISE IN COBALT AND NICKEL ALLOYS, WE HAVE DEVELOPED A COMPREHENSIVE PORTFOLIO OF MATERIALS THAT HAVE BECOME INDUSTRY STANDARDS FOR MANY CRITICAL APPLICATIONS.

WE HOLD NUMEROUS UP-TO-DATE CERTIFICATIONS, INCLUDING AS9100D, ISO 9001:2015, AND NADCAP™ FOR NDT, ALONG WITH VARIOUS SPECIFIC APPROVALS FOR CLIENTS AND SECTORS.

COMPANY KEY PRODUCTS

Castings

Flanges
Flow Path
Plates
Shrouds
Structural Airfoils
Swirlers

Complex Assemblies

Augmentor Liners
Axial and Radial Diffusers
Swivel Ducts
Torque Boxes

Fabrications

Combustion Liners
Flame holders
Structural OGVs
Tubes

Forgings

Blades / Leading Edge
Sheaths
Disks
Engine Mounts
Impellers
Structural Components
Structural Guide Vanes
Vanels

Machining

Bearing Housings
Brackets
IBRs/Blisks
Leading Edge Sheaths
Seals
Shrouds & Stator Segments
Solid & Hollow Blades
Swirlers

PRESENTATION OF PURSUIT TUNISIA

PURSUIT AEROSPACE HAS BEEN OPERATING IN TUNISIA FOR OVER 20 YEARS, WITH A STRONG LEGACY OF GROWTH AND EXPERTISE IN THE AEROSPACE INDUSTRY.

THE COMPANY BEGAN AS P&K TUNISIA IN 2001, FOLLOWED BY THE ADDITION OF EUROCAST IN 2004.

THROUGH STRATEGIC ACQUISITIONS, INCLUDING PARADIGM PRECISION IN 2007 AND TURBOCOMBUSTOR IN 2011, PURSUIT AEROSPACE CONTINUED TO EXPAND, JOINING THE CARLYLE GROUP IN 2012.

IN 2023, A MERGER WITH CD&R AND GB OFFICIALLY FORMED PURSUIT AEROSPACE, SOLIDIFYING ITS ROLE AS A LEADING PROVIDER OF ADVANCED AEROSPACE SOLUTIONS.

PURSUIT AEROSPACE IS KNOWN FOR ITS EXPERTISE IN DEVELOPING MATERIALS AND COMPONENTS THAT ADDRESS CRITICAL WEAR, HEAT, AND CORROSION APPLICATIONS IN AEROSPACE, SUPPORTED BY NUMEROUS CERTIFICATIONS AND INDUSTRY APPROVALS.

PRESENTATION OF PURSUIT TUNISIA

GENERAL MANAGER: ADEL SAOUDI

SITE FOOTPRINT: 100,000 SQ. FT.

EMPLOYEES: 436

BUSINESS FOCUS:

- COMMERCIAL OEM PRODUCTS
- INDUSTRIAL GAS TURBINES PRODUCTS

KEY PRODUCTS

SWIRLERS, MIXERS, CYCLONES



FLANGES, PLATES, ELBOWS



STRUCTURAL AIRFOILS



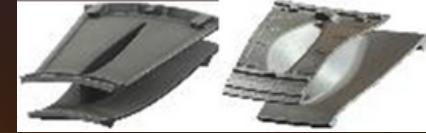
COMPLEX EQUIAX STRUCTURES



SHROUDS



FLOW PATH



CAPABILITIES:

- HIGHLY CAPABLE INVESTMENT CASTING AND POST-PROCESSING MACHINING BUSINESS FOCUSED ON NICKEL AND COBALT ALLOYS
- AIR MELT & VACUUM MELT CAPABILITY
- EQUIAX CASTING CAPABILITY
- WORLD CLASS NPI CAPABILITIES

MAIN CUSTOMERS



Pratt & whitney



GE Aviation



WOODWARD



GE Energy



| COMPANY VALUES

PROCESS

PROCESS DRIVES EVERYTHING WE DO, WITH INTENTION



OPENNESS

WE ARE COMMITTED TO KEEPING AN OPEN MIND AS WE PURSUE A BETTER WAY

SERVICE

WE ARE DEDICATED TO SERVING ONE ANOTHER, OUR CUSTOMERS, OUR SHAREHOLDERS, AND OUR COMMUNITIES



CURIOSITY

WE ARE LIFE-LONG LEARNERS WITH 'SOFT MINDS', ALWAYS ASKING QUESTIONS

OUR TOPICS

KPO
Department

OUR TOPICS

Reference #PUR01

Subject

Right sized sandblasting machine insourcing

Description

Sandblasting operation is mandatory in the process to clean parts from caustic leach. Our actual sandblasting machines are big with many EHS non conformities such as noise and dust.

That's why we are planning to manufacture our own right sized sandblasting machine specific for each flowline that ensures good quality and safe working conditions.



- SolidWorks
- Material Resistance
- NDT
- Kaizen



1



6 Months



- Material Engineer
- Mechanical Engineer
- Industrial Engineer

OUR TOPICS

Reference #PUR02

Subject

Eliminate ceramic cores rework.

Description

Ceramic cores are parts used during wax injection to get internal complex shapes on the metallic part. These parts are purchased from external suppliers and received with many defects that need to be reworked.

Since the ceramic cores production line implementation is in progress in our Meghira business unit, we need a deep study on the ceramic cores process to eliminate defects from the beginning.



- Problem solving tools
- Ceramic material knowledge
- SolidWorks
- Kaizen



1



6 Months



- Material Engineer
- Mechanical Engineer
- Industrial Engineer

OUR TOPICS

Reference #PUR03

Subject

Design and implement M38 one piece ceramic core (No JJ & HH)

Description

M38 part needs a ceramic core during wax injection to get the internal complex shape. Actually we are using a couple of ceramic cores to get that shape (JJ & HH).

Due to the flatness variation between these cores, many defects appears later on metallic part especially the high positive metal. So, to eliminate defects related to ceramic cores JJ/HH, the idea is to design one piece ceramic core for M38



- SolidWorks
- Material Resistance
- Ceramic material knowledge
- Kaizen



1



6 Months



- Material Engineer
- Mechanical Engineer
- Industrial Engineer

OUR TOPICS

Reference #PUR04

Subject

Cost saving Web application

Description

Develop a web application with both front-end and back-end to:

1. Enable users to submit their ideas independently.
2. Track the progress of each idea.
3. Notify the validation team for approval.
4. Display charts and statistics (details to be determined).

Back-End:

1. Administrators can add, modify, or remove members of the validation team.
2. Administrators can add, modify, or delete static information related to ideas (such as KPIs, buildings, departments, etc.).

Front-End:

1. Each user has a unique login and password.
2. User access is restricted based on their role (access levels to be determined).



- Angular
- Python
- HTML
- CSS



1



3 Months



- IT Engineer

| OUR TOPICS

PRODUCTION

Department

OUR TOPICS

Reference #PUR05

Subject

Continuous Improvement through Kaizen in Production

Description

The objective of this project is to implement Kaizen in the production department to optimize processes, reduce waste, and improve overall operational efficiency. The student will analyze current production workflows, identify areas of inefficiency, and apply Kaizen techniques for continuous improvement. By reducing non-value-added activities, the project aims to shorten lead times, improve product quality, and increase throughput.

The focus will be on waste elimination in key areas, such as:

- Waiting Times: Reducing idle time between processes by streamlining transitions and improving process flow.
- Defects: Enhancing quality control to reduce rework and scrap by implementing error-proofing techniques (Poka-Yoke) and more rigorous quality checks.



- Kaizen
- PDCA
- Spaghetti Diagrams
- Root Cause Analysis
- Factor Tree Analysis



6



6 Months



- Industrial Engineering
- Mechanical and production Engineering
- Mechanical Engineering

OUR TOPICS

Reference #PUR06

Subject

Implementation of a Production Line for a Part Number

Description

Analyze technical specifications and manufacturing requirements for the part 2462M39P02.

Design and optimize a production line that ensures consistent output and high product quality.

Identify suitable equipment and tools required for the line, considering budget and efficiency constraints.

Develop a workflow and process layout to minimize waste and improve productivity.

Implement lean manufacturing principles to reduce cycle time and enhance throughput.

Conduct testing, validation, and quality control procedures to ensure the line meets production targets and complies with industry standards.



- Root Cause Analysis
- Value Stream Mapping (VSM)
- Ishikawa
- SolidWorks



1



6 Months



- Industrial Engineering
- Mechanical and production Engineering
- Mechanical Engineering

OUR TOPICS

Reference #PUR07

Subject

Lead Scrap Reduction Efforts with a Dynamic FTA Defect Database

Description

Create a dynamic database with an Excel application using VBA to efficiently manage and track FTA defects. Automate data analysis processes to identify trends and optimize defect resolution.



- Fault tree analysis
- excel (VBA)
- Root Cause Analysis



1



6 Months



- Industrial Engineering
- Mechanical and production Engineering
- Mechanical Engineering

OUR TOPICS

Reference #PUR08

Subject

Study and design cutoff machine for parts produced

Description

Collect data on part numbers (dimensions, material, gate positions to be cut, etc.), determine the standard machine/plate size for fixture interchangeability, define functional cutting unit specifications (manual or automatic), size the dust collector and aspiration unit, and conduct a risk assessment and safety review for the machine.



- Design 3D/2D
- RDM
- SolidWorks /Catia
- MS office



1



4-6 Months



- Mechanical Engineering

OUR TOPICS

Reference #PUR09

Subject

Optimizing Equipment Design through 3D/2D Library Standardization

Description

Develop a standard 3D library that includes standard nomenclature, documentation, 2D templates, BOM list post-3D assembly design (including gate design), material properties (PC-15 Wax, Green Wax), and CAD tools used (ceramic rods, ceramic cups, standard metallic rods for panels). Create standard CAD models for moonshined equipment like trolleys, workstations, and boards, with a modular, right-sized solution. After standardization, implement SORT: sorting items, setting in order, shining, sustaining, and ensuring safety.



- Design 3D/2D
- SolidWorks /Catia
- MS office



1



4-6 Months



- Mechanical Engineering

| OUR TOPICS

QUALITY
Department

OUR TOPICS

Reference #PUR10

Subject

Design and Dimensioning of a Treatment Station for Water Discharged by the Penetrant Testing Machine

Description

Sizing for the water circuit in a closed loop and reuse it and define the equipment needed for the realization:

- Define actual consumption
- Create layout to put system in place
- Hydraulic study to ensure closed loop
- Define needed equipment



- Fluid mechanics
- CAD



1



4-6 Months



- Mechanical Engineering

OUR TOPICS

Reference #PUR11

Subject

Design and Development of a Treatment Station for Water Discharged by the Penetrant Testing Machine

Description

Definition of the equipment needed to treat the discharged water and make it ready for dionization:

- Define products to be eliminated
- Propose solution to remove coloration
- Propose solution to dionize water
- Implement treatment process on actual consumption



- EHS
- Chemical



1



4-6 Months



- Chemical Engineering

OUR TOPICS

Reference #PUR12

Subject

Industrialization of product: Implementation of APQP and PPAP approaches

Description

Apply APQP/PPAP phases:

Applying APQP and PPAP phases ensures that the product development and manufacturing processes meet quality standards and customer requirements. This includes creating a Process Flow Diagram (PFD) to outline each step, using Statistical Process Control (SPC) to monitor and stabilize production, conducting Measurement Systems Analysis (MSA) to ensure accurate data, and performing Process Failure Mode and Effects Analysis (PFMEA) to identify and address potential risks. These phases work together to guarantee a high-quality product and a reliable manufacturing process.



- Quality tools
- CAD



1



4-6 Months



- Industrial engineer
- Mechanical engineer

OUR TOPICS

Reference #PUR13

Subject

Analysis and Improvement of the Manufacturing Process and Control Methods for a part number

Description

- Analyse actual manufacturing process
- review actual control plan
- improve manufacturing process
- improve inspection method to remove CMM inspection



- Quality tools
- CAD



2



4-6 Months



- Industrial engineer
- Mechanical engineer

OUR TOPICS

EHS
Department

OUR TOPICS

Reference #PUR14

Subject

Ergonomic assessment

Description

The goal of this project is to identify ergonomic risk factors at two different production sites and to develop a comprehensive action plan to mitigate these risks. Ergonomics is the science of designing workplaces, products, and systems to fit the needs of the people who use them. Identifying ergonomic risks is essential to ensuring the health, safety, and productivity of workers in a manufacturing or production environment.

The focus will be on:

- Workstation Design: Seating and posture, desk height and layout, tools and equipment.
- Repetitive Motion and Manual Handling: Repetitive tasks, heavy lifting, or awkward postures.
- Environmental Factors: Lighting, noise levels, temperature, and ventilation.
- Workload and Work Schedules: Overtime or long shifts, rest breaks.

Steps:

1. Initial Data Collection and Research
2. Conduct Ergonomic Assessments
3. Analyze the Findings
4. Develop Recommendations for Improvement
5. Develop an Action Plan for Implementation

- Video Analysis Tools
- 3D modeling software
- Ergonomic Principles
- Workplace Design Standards
- Musculoskeletal Disorders (MSDs)
- Data Analysis Skills



1



4 Months - 6 Months



- Master Degree in Ergonomics

OUR TOPICS

Reference #PUR15

Subject

Ventilation improvement

Description

This project will focus on improving the ventilation in various production environments that are exposed to high levels of dust and volatile organic compounds (VOCs), which can pose serious health and safety risks to workers. Effective ventilation is essential in minimizing the exposure to harmful particles and gases, thereby reducing the risk of respiratory illnesses, skin irritation, and other work-related diseases.

The areas covered by the study are:

- *The wax injection
- *The shell formation
- *The foundry
- *The mold cutting
- *The grinding and sandblasting

Steps:

- *Assessment of Current Conditions
- *Designing Solutions for Improved Ventilation
- *Feasibility Study: Economic and Technical Aspects
- *Develop an action plan

- Fundamentals of Airflow Dynamics
- Types of Ventilation Systems
- Air Quality Monitoring
- Energy Efficiency
- HVAC Systems
- Duct Design Software



1



4 Months - 6 Months



- Chemical Process Engineer

| OUR TOPICS

ENGINEERING

Department

OUR TOPICS

Reference #PUR16

Subject

Standardization process for the shell mold casting

Description

Establishment of a Standard for the Shell Department

This initiative involves developing a standardized framework tailored to the shell department. The programming will be tailored based on the specific geometry and complexity of the parts involved, ensuring optimal efficiency and precision in production processes.



- Material
- Robot programming



2



6 Months



- Mechanical Engineer
- Mechatronics Engineer
- Materials Engineer

OUR TOPICS

Reference #PUR17

Subject

Stainless Steel Foundry Cooling Parameters Control

Description

Development of Cooling Parameters using Design of Experiments in Stainless Steel Foundries.



- Database creation



1



6 Months



- Mechanical Engineer
- Mechatronics Engineer
- Materials Engineer

| OUR TOPICS

SUPPLY CHAIN

Department

OUR TOPICS

Reference #PUR18

Subject

Supply and inventory management

Description

Develop an efficient system for demand forecasting and inventory optimization to minimize costs and ensure product availability. Leverage advanced forecasting methods and inventory models to determine optimal order quantities and timing.



- Inventory management
- Procurement management
- Transport management



1



6 Months



- Industrial Engineer

HOW TO APPLY

**SELECT A
SINGLE TOPIC
FROM THE PFE
BOOK.**

**SCAN THE QR
CODE BELOW**

**COMPLETE THE
FORM**



Each student may apply for only one PFE subject.



THANK YOU

PURSUIT AEROSPACE TUNISIA

ALWAYS PURSUING BETTER