



## SUMMARY

This course is an introduction to Fatigue Risk Management for flight crews.

The course covers the basic concepts of fatigue and sleep physiology, including definitions, symptoms of fatigue, error rates, circadian rhythm, sleep homeostat, blood glucose levels and glycemic index (GI).

Particular emphasis is placed on specific fatigue issues for flight operations (sleep debt, acute and chronic fatigue, time zones) and mitigation strategies (sleep schedules, controlled rest, layovers).

## TARGET POPULATION

The Pelesys Fatigue Risk Management course is designed for flight crews (all experience levels) requiring initial or recurrent training.

## REGULATORY COMPLIANCE

- ICAO / EASA / FAA
- Maintenance compliance with IOSA standards

Versions Available:  
Standard  
EASA

Course Length:  
1 hr 20 min  
2 hr 15 min

## LESSON 01: Basic Concepts: Fatigue and Sleep

In this lesson we cover:

- Accidents / incidents
- Fatigue Risk Management (FRM) implementation
- Symptoms of fatigue: physical, mental, emotional
- Fatigue impairment
- Alertness / error rates
- Sleep characteristics
- Sleep cycles / circadian rhythm
- Sleep homeostat

## LESSON 02: Causes of Fatigue

In this lesson, we cover:

- Internal (physiological) sources of fatigue
- Minimum required sleep / sleep debt
- Recovery sleep
- Acute fatigue
- Nutrition / fitness
- Nicotine
- Medications
- Sleep apnea
- External (environmental) factors
- Eastbound / westbound flight

## LESSON 03: Mitigation Strategies - General

In this lesson, we cover:

- Sleep duration and quality
- Sleeping areas
- Distractions / noise levels
- Napping
- Nutrition
- Hydration
- Blood glucose levels / glycemic index (GI)
- Shift workers
- Selective use of caffeine

## LESSON 04: Mitigation Strategies – Flight Operations

In this lesson, we cover:

- Time zones / jet lag
- Sleep schedules
- Dehydration
- Flight levels
- Controlled rest on the flight deck
- Relief pilots
- Bunk facilities
- Circadian low points
- Layover strategies
- Commuting issues

## LESSON 05: EASA Legislation (EASA Version Only)

In this lesson, we cover:

- Regulatory approaches of limiting fatigue
- EASA's Fatigue Risk Management (FRM)
- Essential requirements from EU 216/2008
- Implementing Rules (IR) from EU Regulation 83/2014
- Certification Specifications (CS) from EU Regulation 83/214
- Some aspects of Acceptable Means Compliance (AMC) and Guidance Material (GM) from EU Regulation 83/2014

## LEARNING TIME AND RUN TIME

This course has a learning time of: (run time plus additional time per page to account for understanding learning points)

- 1 hr 20 min (Standard) / 2 hr 15 min (EASA)

This course has a run time of: (the base time for each page to be completed)

- 30 min (Standard) / 1 hr 22 min (EASA)

## Exam Generation System (EGS) Banked Questions

The total amount of banked questions for this course is:

Lesson Title	Standard Questions	EASA Questions
Basic Concepts: Fatigue and Sleep	18	18
Causes of Fatigue	8	8
Mitigation Strategies - General	9	9
Mitigation Strategies - Flight Operations	5	5
EASA Regulations	---	15
	<b>40</b>	<b>55</b>

## REFERENCE MATERIAL

This course provides the core elements of FRM training outlined in:

### ICAO

- ICAO FRMS Manual for Regulators DOC 9966
- ICAO Human Factors Training Manual, Doc 9683
- ICAO Fatigue Management (ICAO Safety)
- ICAO /IATA/IFALPA implementation guide for Fatigue Risk Management Systems

### EASA

- EASA ORO.FTL.205
- EASA AMC1 ORO.FTL.250

### FAA

- FAA AC 117-1, 2, 3
- FAA FAR 121 Sub Q, R, S
- FAA AC 120-51E
- FAA AC 120-103A

The operator remains responsible for obtaining approval from the regulatory authority.

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