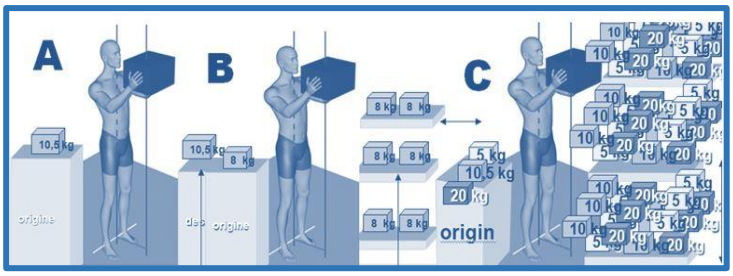
**With the suggested exercises , the course can las 12-16 hours**

# A GUIDE TO STUDYING SIMPLE AND COMPLEX LIFTING TASKS USING UPDATE NIOSH LIFTING EQUATION (LI, CLI, VLI) for evaluating biomechanical overload of spine




## AIM, MAIN CONTENTS AND CRITERIA

This course aims to offer a useful guidance and tools (spreadsheets in Excel free download) on how to analyse and evaluate the intricate lifting functions for preventing injury during their execution.
Based on the practical experience of the authors, the manual should **help users to apply both the international standards ISO [ISO 11228-1, 2003] and the RNLE (Revised NIOSH Lifting Equation)**

The tools were created by EPM with the support of a qualified group of co-workers in various European countries, based on extensive field experience. For over 10 years now EPM has worked with researchers at the NIOSH, primarily Thomas Waters, the principal author of the RNLE, to develop theoretical models and application tools for the **update the criteria to study of complex manual lifting tasks** (**variable and/or sequential, manual lifting situations commonly present in all warehouses, supermarkets, construction, agricultural works, etc**.). Variable and sequential tasks today represent the latest evolution of the original RNLE [WATERS, 2003] and have become the reference method for international standards.

## COURSE CONTENT

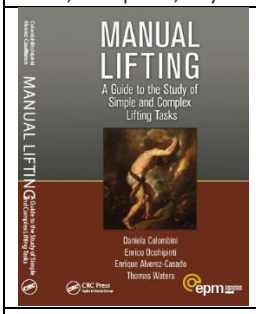
INTRODUCTION AND MNUAL LIFTING NIOSH GENERAL MODEL
MANUAL LIFTING EVALUATION: MONO-TASK ANALYSIS CRITERIA AND APPLICATION EXAMPLES
MANUAL LIFTING EVALUATION: COMPOSITE-TASK ANALYSIS CRITERIA AND APPLICATION EXAMPLES
MANUAL LIFTING EVALUATION: VARIABLE-TASK ANALYSIS CRITERIA AND APPLICATION EXAMPLES
MANUAL LIFTING EVALUATION: SEQUENTIAL-TASK ANALYSIS CRITERIA AND APPLICATION EXAMPLES
FINAL LIFTING INDEX CLASSIFICATION
ISO STANDARD ON MANUAL LIFTING (version 2003, new version in 2021)
ISO STANDARD ON CARRYING (version 2003, new version in 2021)
EXERCISES

## MAIN FEATURES

- Presents applications of RNLE for all types of lifting tasks.
- Explains procedures and applications with examples.
- Defines different types of lifting tasks, with instructions on how to analyse each.

## RECOMMENDED READING: the course manual

**Manual Lifting: A Guide to the Study of Simple and Complex Lifting Tasks**
**Daniela Colombini, Enrico Occhipinti, Enrique Alvarez-Casado, Thomas R. Waters**
2012, CRC press, Taylor & Francis




### Features

- Presents applications of RNLE for all types of lifting tasks
- Includes a special chapter devoted to procedures for Active Health Surveillance of workers who perform manual handling tasks.
- Explains procedures and applications with examples.
- Defines different types of lifting tasks, with instructions on how to analyse each.

### Summary

Commonly used throughout the world, manual lifting tasks—whether simple or complex—all involve variable loads, postures, and movements. This practical guide discusses how to analyse the intricate lifting function and prevent injury during its execution. Outlining revised NIOSH Lifting Equation (RNLE) methods, the book illustrates their use in assessing manual lifting tasks of varying degrees of difficulty. Using examples to reinforce presented concepts, it explains how RNLE methods can be applied to evaluate single, composite, variable, and sequential lifting tasks. It also explores how to interpret and apply the results according to international standards and guidelines.