



LOGI-713: LOGISTICS SAFETY PRINCIPLES (FORMERLY ENGR-713)

Effective Term

Fall 2026

BOT Approval Date

06/12/2025

Discipline

LOGI - Logistics

Course Number

713

Course Title

Logistics Safety Principles (formerly ENGR-713)

Short Title

Logistics Safety Principles

Credit Status (CB 04)

D - Credit - Degree applicable

Units

Lecture Units

3.00

Total Units

3.00

Hours

Lecture Contact Hours

48-54

Out of Class Hours Lecture

96-108

Total Contact Hours

48 - 54

Total Out of Class Hours

96 - 108

Total Student Learning Hours

144 - 162

Distance Education

Yes

Distance Education

Distance Education Type

Both Fully Online and Hybrid Online

Fully Online Delivery Requirements:

a. Students must be notified via the college schedule of classes and the syllabus for the class if proctored tests are required for this course



b. Any planned face-to-face meetings, such as an orientation or study session, must be optional

c. The MSJC curriculum committee requires the use of accessible, asynchronous discussion as a component of every fully online course

Are you using publisher content?

No

Regular Substantive Interaction

Instructor-to-student, student-to-student, and student-to-content contact shall be distributed in a manner that will ensure regular substantive interaction (RSI) is maintained not only weekly but also for the duration of the course. Instructor interactions should be equivalent in time, quality and consistency to the engagement students would receive in a face-to-face course—for example, through announcements, discussion participation, personalized feedback, video messages, or other instructional communications. Instructors are expected to be responsive to student inquiries within a 24-72 hour time frame excluding holidays. RSI will be maintained through a variety of methods:

- **Orientation** - Students must be oriented to the online and face-to-face portions at the start of the course.
- **Announcements** - Announcements using the course management system must be posted at least weekly to keep students current on course events, due dates, materials, etc.
- **Discussion Forums** - Content-related discussion forums within the designated CMS will include appropriate instructor participation and will be initiated and maintained, with timely feedback provided. Instructors are required to monitor the discussions and related activities to provide guidance and direction. Open-ended discussion boards may be used to further learning and interaction.
- **MSJC Communication** – Instructor will use MSJC-administered communication tools (such as email or the designated CMS communication tools) to regularly communicate with and provide ease of access to students.
- **Timely Feedback** - Timely feedback on student work will be provided by the instructor, which may include comments and/or rubrics, within the Grades area of the designated CMS.
- **Scheduled Meetings** – Hybrid and synchronous courses will meet at regularly scheduled times. ADA Compliance - All course interactions and content must be designed with accessibility in mind and meet ADA requirements.

Catalog Description

This course introduces students to the basics of workplace safety, while examining the latest standards of OSHA, NIOSH, and other US regulatory bodies in the context of new and emerging industry trends. This course suits students who are also seeking growing and promising careers as industry safety professionals. (formerly ENGR-713)

Codes

TOP Code (CB 03)

0510.00* - *Logistics and Materials Transportation

CIP Code

52.0203 - Logistics, Materials, and Supply Chain Management.

Repeatability Code

No

Grading Option

Letter grade OR P/NP

Minimum Qualifications

Minimum Qualifications	And/Or
Small Business Development	Or
Business (Masters Required)	Or
Engineering (Masters Required)	Or
Supply Chain Technology	End

Learning Objectives

Learning Objectives

Learning Objective
1. Examine the safety and health movement today in a logistics environment with an equity lens.
2. Analyze the various accident theories and describe individual factors that can contribute to accident causation with warehouse forklift drivers.

3. Explain the role of safety and health professionals in the workplace.
4. Summarize OSHA's mission and purpose and explain the concept of the OSHA standard.
5. Evaluate the standards of OSHA, NIOSH, and other US regulatory bodies such as the Department of Transportation.
6. Examine the most current and fundamental concepts in occupational safety.
7. Evaluate US regulatory bodies in the context of new and emerging logistics industry trends.
8. Analyze the basic tenets of workers compensation and describe how distribution center workers' compensation disputes are handled.
9. Describe how to conduct a delivery vehicle accident investigation: when to investigate, what should be investigated, and who should investigate workplace accidents.
10. Summarize the most common sources of workplace stress and analyze the relationship between stress and workers compensation.
11. Evaluate the causes of slip and fall hazards in a distribution center and summarize the basic elements of a slip and fall prevention program.
12. Analyze the effectiveness of workplace safety committees by its diversity, inclusion, and perceived inequities

Learning Outcome Information

Course Learning Outcomes

Learning Outcome

1. Students will critically analyze accidents, their effects, and ways they may be prevented.
2. Students will evaluate the standards of OSHA, NIOSH, and other US regulatory bodies.
3. Students will successfully demonstrate an understanding of the nature and role of safety professionals in the workplace.
4. Students will critically examine and pose questions about warehouse safety practices and their role in personal health and safety.

Content

Course Lecture Content

1. Safety and Health Movement, Then and Now
 - a. Developments Before the Industrial Revolution
 - i. Code of Hammurabi (days of ancient Babylonians)
 - ii. Bernardino Ramazzini (eighteenth century)
 - b. Milestones in the Safety Movement
 - i. Health and Morals of Apprentices Act of 1802
 - ii. Establishment of The Bureau of Labor Statistics (BLS)
 - c. Development of Accident Prevention Programs
 - i. Early Safety Programs
 - ii. The Three E's of Safety
 - d. Development of Safety Organizations
 - i. Occupational Safety and Health Administration (OSHA)
 - ii. National Institute for Occupational Safety and Health (NIOSH)
2. Accidents and Their Effects
 - a. Accidents versus other causes of death
 - i. Death in Work Accidents
 - ii. Death rates by Industry
 - b. Estimating the Cost of Accidents
 - i. Cost-Estimation Method
 - ii. Estimating the Hidden Costs
 - c. Global Impact of Accidents and Injuries
 - i. OSHA Reports and Logs
3. Theories of Accident Causation
 - a. Domino Theory of Accident Causation
 - i. Heinrich's Axioms of Industrial Safety
 - ii. Heinrich's Domino Theory
 - iii. Heinrich's Theory and Corrective Action

- b. Human Factors Theory of Accident Causation
 - i. Overload
 - ii. Inappropriate Response and Incompatibility
 - iii. Inappropriate Activities
- c. Accident/Incident Theory of Accident Causation
 - i. Accident/Incident Theory in Practice
 - ii. Overload, Ergonomic Traps, Decision to Err
- d. Epidemiological Theory of Accident Causation
 - i. Epidemiological Theory in Practice
 - ii. Limitations of Event-Chain Accident Causation Theories
- e. Behavioral Theory of Accident Causation
 - i. Behavioral Theory in Action
- f. Individual Factors and Accident Causation
 - i. Warning Signs
 - ii. Sources of Help
- g. Management Failures and Accident Causation
 - i. Role of the Supervisor in Workplace Safety and Healthy
 - ii. Typical Management Failures That Cause Accidents
- 4. Roles and Professional Certifications for Safety and Health Professionals
 - a. Safety and Health Manager
 - i. Job of the Safety and Health Manager
 - ii. Role in the Company Hierarchy
 - iii. Diversity, Equity and Inclusion in Safety and Health Manager positions
 - b. Problems Safety and Health Managers Face
 - i. Lack of Commitment
 - ii. Production Versus Safety
 - c. Productivity, Quality, Cost, and Response Time
 - i. Quality
 - ii. Cost
 - iii. Response Time
 - d. Certification of Safety and Health Professionals
 - i. Certified Safety Professional
 - ii. Experience and Examination Requirements
 - iii. Workplace safety committees and their diversity, inclusion, and equity opportunities.
- 5. OSHA
 - a. Rationale for OSH Act
 - i. OSHA'S Mission and Purpose
 - ii. State-level Safety and Health Programs
 - b. OSH Act Coverage
 - i. Coverage of Federal, State, and Local Government Personnel
 - c. OSHA Standards
 - i. How OSHA Standards are Developed
 - ii. Input for Small Business in Standards Development and Compliance
 - iii. OSHA Standards versus OSHA Regulations
 - iv. OSHA'S Record-Keeping and Reporting
 - d. Reporting Requirements
 - i. Electronic Reporting Requirements
 - ii. Anti-retaliation Measures
 - iii. Employee Reporting Measures
 - e. Safety Incentives
 - f. OSHA'S Whistleblower Programs
 - i. OSHA's Enhanced Enforcement Policy
 - g. OSHA's Severe Violator Enforcement Program
 - i. Follow-Up Inspections
 - ii. Programed Inspections
 - iii. Public Awareness
 - iv. Settlements

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- h. Services Available from OSHA
 - i. Consultation Services
 - ii. Safety and Health Achievement and Recognition Program
 - iii. Cooperative Program
 - i. Laws and Liability
 - i. Fundamental Legal Principles
 - ii. Negligence
 - iii. Foreseeability
 - iv. Influence of Diversity, Equity and Inclusion in Creation of Laws
6. Worker's Compensation
- a. Objectives of Workers' Compensation
 - i. Replacement of Income
 - ii. Rehabilitation of the Injured Employee
 - iii. Prevention of Accidents
 - iv. Historical Perspective
 - v. Contributory Negligence
 - vi. Assumption of Risk
 - b. Workers' Compensation Legislation
 - i. Modern Workers' Compensation Insurance
 - ii. Resolution of Worker's Compensation Disputes
 - c. Injuries and Workers' Compensation
 - d. Disabilities and Workers' Compensation
 - i. Temporary Disability
 - ii. Permanent Partial Disability
 - e. Distribution Center Workers' Compensation Disputes
7. Accident Investigation and Reporting
- a. Types of Accident Investigations
 - i. Accident Report
 - ii. Accident-Analysis Report
 - b. When to Investigate
 - i. Emergency Procedures
 - ii. Evidence
 - c. What to Investigate
 - i. Accident Investigation
 - ii. Five-Component Approach to Accident Investigation
 - d. Delivery Vehicle Accidents
 - i. Accident Reports
 - e. Components of Investigation
 - i. When to Investigate
 - ii. What to Investigate
 - f. Reporting Accidents
 - i. Ten Accident Investigation Mistakes to Avoid
8. Stress and Safety
- a. Workplace Stress Defined
 - i. Stress
 - ii. Workplace Stress
 - b. Sources of Workplace Stress
 - i. Task Complexity
 - ii. Control
 - iii. Job security
 - c. Common Causes of Stress in the Workplace
 - i. Making Use of the List of Common Causes of Stress
 - ii. Human Reactions to Workplace Stress
 - d. Measurement of Workplace Stress
 - i. Behavioral Time-Sharing
 - ii. Psychophysiological Techniques
 - e. Improving Safety by Reducing Workplace Stress

- i. Training
 - ii. Stress in Safety Managers
- 9. Falling, Impact, Acceleration, and Vision Hazards with Appropriate PPE
 - a. Causes of Falls
 - i. Kinds of Falls
 - ii. Walking and Slipping
 - b. Measuring Surface Traction
 - i. Factors that Decrease Traction
 - c. Specific Strategies for Preventing Slips
 - d. Locations
 - i. Restrooms
 - ii. Kitchens
 - iii. Processing Areas
 - e. Slip and Fall Prevention Programs
 - i. Practical Prevention Measures
 - ii. Choosing Footwear
 - f. OSHA Fall Protection Standards
 - i. Testing Fall Protection Equipment
 - ii. OSHA's Fall Protection Standard for Construction
 - g. OSHA's Recommendations for Effective Fall Protection
 - h. Ladder Safety
 - i. Inspecting Ladders
 - ii. Dos and Don'ts of Ladder Use
 - i. Impact and Acceleration Hazards
- 10. Personal Protective Equipment (PPE)
 - a. Head Protection
 - i. Types and Classes of Hard Hats
 - b. Eye and Face Protection
 - c. Personal Protective Equipment
 - i. PPE Program
 - ii. Reinforcing the Proper Use of PPE and Challenging its Improper Use
- 11. Forklift Safety (Powered Industrial Trucks)
 - a. General Rules
 - i. Rules for Operation of the Forklift
 - ii. Rules for Maintenance of the Forklift
 - b. OSHA's Training Requirements
 - i. Initial Training Program Content
 - ii. Refresher Training Program Content
- 12. Hazards of Temperature Extremes
 - a. Heat Stress and Strain
 - i. Heat Strain Defined
 - ii. Recognizing Heat Strain
 - b. Cold Stress
 - i. Hypothermia
 - ii. Preventing Cold Stress
 - c. Burns and Their Effects
 - i. Human Skin
 - ii. Severity of Burns
 - d. Chemical Burns
 - i. Effects of Chemical Burns
 - ii. Infection
 - e. Fluid Loss
 - f. Shock
 - g. OSHA's Guidelines for Hazards of Temperature Extremes
- 13. Logistics Industry Trends

- a. OSHA Logistics Warehouse Safety Trends
- b. Freights and Shipping Safety Trends
- c. NIOSH Cell Phone Ladder Safety

Methods of Instruction

Method

Lecture

Integration

Lecture will be used to verbally present course material to students utilizing slide presentations, videos, and other media. Lecture will cover all course material including OSHA standards, forklift safety, and workers' compensation.

DE Adaptations for MOI

Accessible lecture materials will be delivered highlighting key concepts of course material using the CMS. Students will have access to the chat functions and group features within the CMS to ask questions or provide insight. Accessible lecture materials will be delivered highlighting key concepts of course material using the CMS. Students will have access to the chat functions and group features within the CMS to ask questions or provide insight.

Method

Discussion

Integration

Discussions over the course material will encourage students to exchange ideas while feeling safe and respected expressing diverse and inclusive views. Discussion as a class, or in smaller groups will be used to encourage students to exchange ideas, findings and comprehension of course material in a learning environment where students feel safe and respected expressing differing views. The instructor will facilitate questions for small group discussions related to warehouse safety, reducing workplace stress and slip and fall prevention programs. Additionally, students will discuss the safety and health movement today in a logistics environment with an equity lens.

DE Adaptations for MOI

The discussions will be accomplished through the regular use through equitable modes of discussions in the CMS, the chat, conversations, and group features within the CMS. The instructor will participate in discussions and respond to student questions in the CMS as needed. Using the chat, conversation and group features within CMS, students will be able to discuss their ideas throughout each lecture and group discussion. Students will participate in class discussions by participating in synchronous discussions using accessible video conferencing tools.

Method

In-class Exercises

Integration

In-class exercises facilitating student participation will be essential in this course. Each lecture will provide opportunities for student discussion and in-class exercises that will allow for feedback on topics including early safety programs, accident prevention, role of safety professionals among others. Groups will be pre-arranged to ensure diversity in each group. Class participation will be inclusive, vital and enriched as students are able to provide input based on their understanding as well as their socio-cultural background. Discussion will be through the chat and group tools in the CMS.

DE Adaptations for MOI

In the online environment, in-class exercises will be adapted into interactive modules within the CMS. Students will engage in structured group discussions, collaborative activities, and scenario-based tasks using discussion boards, group workspaces, and chat functions. Pre-assigned groups will work asynchronously or during optional synchronous sessions to complete exercises and provide peer feedback. These activities will maintain the course's focus on inclusion, active participation, and diverse perspectives.



Methods of Evaluation

Method

Papers

Integration

Papers will allow students to demonstrate their ability to write and articulate fundamental logistics principles in an equitable manner. Students will write a research paper on the topic of the effectiveness of workplace safety committees by its diversity, inclusion, and perceived inequities. Papers will be evaluated based on the students' ability to analyze class course content and incorporate it to support findings. Students will upload their papers into the CMS and will receive feedback and a grade within 72 hours of the due date via the grade book, chat, or other accessible conferencing tools.

DE Adaptations for MOE

Students will upload their papers into the CMS and will receive feedback and a grade within 72 hours of the due date via the grade book, chat, or other accessible conferencing tools.

Method

Exams/Tests

Integration

Exams will evaluate student comprehension of class material. Exams will include information on theories of accident causation, steps in proper equipment and chemical storage, as well as other safety information related to the workplace. Exams will include true or false, multiple choice, fill-in-the-blanks, and short answer questions providing an equitable opportunity for all students. Exams will be submitted to the online grading system within the CMS. Exams will be graded and students will receive feedback within 72-hours via the grade book, chat, or other accessible conferencing tools.

DE Adaptations for MOE

Exams will be administered and submitted to the online grading system within the CMS. Exams will be graded and students will receive feedback within 72-hours via the grade book, chat, or other accessible conferencing tools.

Method

Homework

Integration

Homework assignments will be assigned periodically to ensure understanding of course content. Homework assignments will cover OSHA regulations, forklift safety, and accident prevention among other course concepts. Periodic homework assignments will evaluate students on their understanding of the course content.

DE Adaptations for MOE

Homework will be submitted to the online grading system within the CMS. Homework will be evaluated on accuracy and completeness. Instructor will provide feedback within 72 hours for all assignments turned into the CMS.

Assignments

Assignment Type

Writing

In-class and/or outside of class

Outside of class

Formative or Summative

Summative

Assignment

Write a three page essay on the topic 'How to become a Safety Professional'. The essay should be posted on the course management system. The length should be at least three pages. The title of the thread should be, 'How to become a Safety Professional'. Be



certain to organize it in the following ways. 1. Introduce Safety Principles. Evaluate OSHA, NIOSH and other US regulatory bodies. 2. Differentiate between the roles of safety professionals (maximum 3). Utilize the book and library for extensive research on the history of OSHA, NIOSH and other US regulatory bodies that correspond to the theories and principles we discussed in class. 4. Provide examples of the duties of safety professionals with practical examples of workplace implementation. 5. Examine workplace safety committees and their diversity, inclusion, and inequities.

How assignment will be adapted in online format

In the online environment, this essay assignment will be submitted through the Course Management System (CMS) as a file upload or text entry. All assignment instructions and expectations will be clearly outlined within the CMS module. Students will be able to access support materials, including links to digital library resources and recorded lectures, to aid in their research. Instructor feedback will be provided within one week of submission through the CMS comment and grading tools, ensuring timely and constructive responses to support student learning.

Assignment Type

Reading

In-class and/or outside of class

In-class

Formative or Summative

Formative

Assignment

Read and analyze OSHA's position on safety incentives found on page 100 in the textbook. Then, answer the following questions: 1) Describe OSHA's position on safety incentives. 2) What are some concerns caused by organizations offering incentives to employees? Be prepared to discuss these topics with the class in small or large groups.

How assignment will be adapted in online format

In the online environment, students will complete this assignment by reading the assigned section in the digital textbook and submitting their responses to the questions through the CMS. Responses may be submitted via a designated discussion board or as an individual assignment upload, as specified in the module. Students will then participate in a follow-up group discussion using the CMS discussion board or group collaboration tools to share and reflect on their analyses. Instructor feedback will be provided within 72 hours to reinforce key concepts and encourage deeper engagement with the material.

Course Materials

Textbooks

Goetsch, David. Occupational Safety and Health for Technologists, Engineers, and Managers, 10th edition". New York, Pearson, 2024. ISBN 978-0137989140

Other Resources

We will use library resources on International trade topics.

Class Size Information

Class Size

40

Class Size Category

A - Lecture/discussion 40

Diversity and Inclusion

Course Design and Materials: Course will incorporate diverse perspectives, authors, and examples that reflect a variety of cultures, identities, and lived experiences. Instructional materials will be reviewed regularly to ensure representation, inclusivity, and alignment with equity-minded practices across disciplines.

Inclusive Learning Environment: Instructors will establish classroom norms and policies that promote respect, civil discourse, and belonging in both online and face-to-face classes. Clear expectations for communication and engagement will support a learning space where all students feel valued and heard.

Accessible Instruction: Course content will be delivered using accessible design. Materials will follow accessibility guidelines within the CMS, including captioned media, readable document formats, and multiple means of engagement to support diverse learning.

Equitable Teaching Practices: Instructors will use transparent and grading criteria, varied assessment methods, and timely feedback to promote fairness and student success. Opportunities for revision, reflection, and multiple demonstrations of learning may be incorporated when appropriate to the discipline.

Culturally Responsive Pedagogies: Instructional strategies will encourage critical thinking about diverse perspectives and systems of power relevant to the course content. Faculty will foster opportunities for students to connect course material to real-world contexts.

Ongoing Reflection and Improvement: Faculty will engage in continuous professional development related to IDEAA principles and reflect on course practices using metacognition to identify opportunities for increased equity, inclusion, and accessibility.

Explain how diversity and inclusion(e.g., gender, culture/race, sexuality, etc.) is infused into the course.

Diversity and inclusion are infused throughout the course through lectures, discussions, and assignments that explore how equity, representation, and cultural awareness intersect with workplace safety. Students will analyze topics such as the influence of diversity, equity, and inclusion (DEI) in the creation of safety laws, the role of DEI in safety and health management positions, and how inclusive practices shape the effectiveness of workplace safety committees. Through group discussions and collaborative activities, students will be encouraged to draw from their own diverse experiences and perspectives. These interactions will promote critical thinking around the societal and organizational factors that impact safety culture, allowing students to develop a broader understanding of how DEI influences safety outcomes across industries.

Describe how assignments, instruction, evaluation, course content, and interactions are contextualized for diverse learners promoting an equitable course.

This course is designed to promote equitable learning outcomes for all students. All course content including lecture, assignments, group discussions and projects will be presented through different instructional methods including interactive lectures, small group discussions, and self-reflection. Lectures will include topics such as the influence diversity, equity and inclusion has on the creation of safety laws. Learning objectives examine the effectiveness of workplace safety committees by their diversity, inclusion, and perceived inequities. There will be opportunities for feedback intertwined in all lessons to ensure students are grasping the content and do not fall behind. Students will be encouraged to draw from their own cultural experiences, backgrounds, and socio-cultural backgrounds when participating in class discussions, completing assignments and class participation. A variety of teaching methods will be used including: slideshows, PDFs, videos and websites. Group discussions and assignments will have diverse groups so no students, especially students in the minority, are isolated.

Interactions

Explain how the course will incorporate student-to-student interaction.

In the face-to-face format, students will participate in in-class discussions and group work designed to promote interaction and engagement. Pre-assigned groups will collaborate on topics such as human factors in accident causation, OSHA standards, safety certifications, and workers' compensation. Groups will share their findings with the class through informal presentations or guided group reports.

In the online environment, students will engage with one another through discussion boards, group collaboration tools, and chat features in the CMS. The instructor will assign discussion questions to pre-arranged groups, which will work together asynchronously in designated group areas. These discussions will foster peer-to-peer learning and provide opportunities for students to share perspectives, analyze content, and apply safety concepts. Groups may be asked to summarize their conclusions in shared documents or posts visible to the full class. The instructor will monitor and participate in discussion forums, offering feedback and guidance as needed.

Explain how the course will incorporate instructor-to-student interaction.

Instructor-to-student interactions will occur through regular engagement in lectures, group discussions, and feedback on assignments and presentations. The instructor will present course material through structured lectures that explore key topics such as warehouse safety, accident causation theories, OSHA standards, and the roles of safety and health professionals. The instructor will also guide small group discussions by providing prompts, facilitating participation, and encouraging critical thinking. Individual support will be available through scheduled meetings or office hours.

In the online environment, instructor interactions will be facilitated through the Course Management System (CMS) using accessible tools such as recorded video lectures, discussion boards, announcements, live chat, and video conferencing. The instructor will actively monitor and respond to student discussions, provide timely feedback on assignments (typically within one week), and offer regular virtual office hours for one-on-one support. Clear communication, consistent presence, and timely responses will help ensure students remain engaged and supported throughout the course.

Explain how the course will incorporate student-to-content interaction.

Student-to-content interactions will occur through active, diverse, and equitable learning activities designed to promote engagement and deeper understanding of course material. These activities include discussion assignments, problem-solving tasks, content research, and critical reflection. Students will interact with lecture materials, readings, and real-world case studies that reinforce safety concepts and workplace applications. For example, an assignment on warehouse and workplace safety will encourage students to reflect on how to apply safety principles in their own lives. In another assignment, students will independently read OSHA's position on safety incentives before analyzing and discussing their insights in group activities.

In the online environment, students will access all course content—including lecture recordings, reading materials, and interactive media—through the Course Management System (CMS). Self-paced modules will include embedded quizzes, guiding questions, and digital resources to support content comprehension. Assignments and readings will be integrated into the CMS to promote consistent engagement, and students will be prompted to respond to content through written reflections, group discussions, or collaborative documents. These tools allow students to engage meaningfully with the material at their own pace while receiving feedback and support from the instructor.

Explain how the course will incorporate student-to-self interaction (metacognitive).

Student-to-self interactions will take place in an equitable and inclusive fashion in both formative and summative assignments. Through quizzes and assignments, students will reflect on the course material and consider how they can implement the concepts in their daily lives. For example, an assignment on creating a discussion thread on 'How to Become a Safety Professional' will allow students to examine the requirements, duties and responsibilities of health professionals and how that can be implemented in their own careers.

Key: 2992