**人因工程特論**

**時間：2019年8月12日至8月16日**

地點：國立台灣大學 公衛大樓215教室

講者：蕭宏偉 博士

課程概述：

本課程旨在讓學生了解職業傷害及健康保護的理論及其在人因工程上的應用，將著重在危害辨識、研究及實務以及工作場所安全的管理。課程主題包含工傷資料系統、人體計測、生物力學、人體機能、傷害鑑識、研究方法以及相關報告撰寫技巧。

課程目標：

* 在傷害以及失效安全之預防工作上，引入結合流行病學、工程學以及人因工程學的整合概念。
* 培養學生在進行職業傷害預防以及健康保護相關研究時，具備必需的學術經驗。
* 培養學生在執行職業傷害預防及健康保護之臨場實務時之基礎必備知識。

**講者介紹**

蕭宏偉博士任職美國國家職業安全衛生研究所 (NIOSH)，目前擔任Protective Technology Branch主任。自美國康乃爾大學及密西根大學取得學位後，先後在民間工廠以及美國政府擔任工程及管理相關職務，並在學術單位任教長達18年。

蕭博士曾參與許多為職業安全領域帶來重大變革的大型計畫，包括墜落預防、設施安全、傷患安全、特殊族群之防護設備以及工作安全之數位模擬。身為一個國際知名的學者，他也是跨機構策略聯盟以及國際安全標準機構的成員，並且在許多國際研討會擔任過主持人。

蕭宏偉博士目前負責管理美國NIOSH下的虛擬實境、人因工程、人體計測等九個實驗室，也擔任一間新成立的機器人安全實驗室的共同主持人。他是十個學術期刊的編輯群成員，擁有超過160篇關於傷害控制工程的著作和專利。因為具備超過25年的計畫管理及安全研究經驗，蕭博士常受邀到各國演講分享工安策略擬定及研究成果，至今已獲頒20個包括服務、科學及創新性質，極富盛名的獎項，近期獲獎如Public Health Service Engineer of the Year from the U.S. Government (2011)、Human Factors Prize from the Human Factors and Ergonomics Society (2012)、Alice Hamilton Award (2013)、Bullard-Sherwood Transfer of Knowledge Award (2014)、Federal Health Information Technology Innovation Award from the Digital Health Xchange (2015)和Samuel Heyman Service to America Medals Career Achievement Finalist (2016) 。

蕭宏偉博士在2003年及2005年分別獲選為英國Institute of Ergonomics and Human Factors的研究員及美國Human Factors and Ergonomics Society的榮譽研究員，並在2003年被美國疾管署(CDC)授予Silvio O. Conte Senior Biomedical Research Service Fellow和CDC Distinguished Consultant。

**Human Factors and Ergonomics for Occupational Safety and Health**

**August 12 – 16, 2019**

Hongwei Hsiao, Ph.D.

Chief for Protective Technology Branch and Coordinator of Center for Robotics Research

The U.S.National Institute for Occupational Safety and Health (NIOSH)

*Workshop Description:*

This workshop develops the student’s understanding and competence in theories and applications of human factors and ergonomics for occupational injury control and health protection. Emphasis is placed on hazard identification, research and practice, and management of workplace safety. Topics include anthropometry and biomechanics, human cognition and signal detection, human-system interface and risk assessment, injury investigation methods, and writing human factors research proposals and reports.

*Workshop Objectives:*

* Introduce students to the concept of integration of the principles of epidemiology, engineering, and ergonomics to the prevention of injury and safety failures.
* Develop students the academic experience necessary for them to conduct research in occupation injury prevention, health protection, and emerging occupational issues.
* Develop students the basic skills necessary to prepare for industrial practices in occupation injury prevention and health protection areas.

*Student Outcomes:*

* Has excellent knowledge of human factors and ergonomics for safety, practical injury control techniques, and strategic plans for injury prevention and health protection.
* Has the ability to identify and organize literature for workplace injury prevention and health protection research and practices.
* Has the skill to develop sound injury prevention and health protection research concepts.
* Has the ability to establish basic safety guidelines for industrial practices.

*Method of Instruction*

This course is taught primarily through lectures and group exercise. The course materials or handouts will be available at the lecture or a week before the lecture. Although no prerequisite is set, a basic knowledge of statistics is helpful.

Topical Schedule of Lectures

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| --- | --- | --- |
| Date | Time | Topic |
| 8/12 | 9:00 - 10:00 | Human Factors ABC and injury prevention models |
| 10:00 – 12:00 | Anthropometry theories |
| 14:00 – 17:00 | Anthropometry research and applications (+ group practice) |
| 8/13 | 9:00 - 10:00 | Anthropometry (group presentation) |
| 10:00 - 12:00 | Biomechanics |
| 14:00 – 17:00 | Biomechanics applications (+ group practice) |
| 8/14 | 9:00 - 10:00 | Biomechanics (group presentation) |
| 10:00 – 12:00 | Cognitive issues and human-system interface |
| 14:00 – 17:00 | Cognitive issues and signal detection (+ group practice/presentation) |
| 8/15 | 9:00 - 12:00 | Developing injury investigation techniques and practice |
| 14:00 – 17:00 | Developing research concepts (+ injury investigation group practice) |
| 8/16 | 9:00 – 10:00 | Injury investigation case studies (group presentation) |
| 10:00 – 12:00 | Course review (comprehensive problem solving) |
| 14:00 – 17:00 | Exam |

**Instructor’s Profile**

**Hongwei Hsiao, Ph.D.**

Dr. Hongwei Hsiao serves as Chief of the Protective Technology Branch and Coordinator of Center for Occupational Robotics Research at the National Institute for Occupational Safety and Health (NIOSH), USA. He received his degrees from Cornell University and the University of Michigan and has held engineering and management positions in both the manufacturing industry and the U.S. Government. He also has taught engineering and public health in academia and guided students and scientists for research proposal writing for 19 years.

Dr. Hsiao has coordinated numerous large-scale programs and projects in the areas of safety research and human factors engineering, including fall prevention, equipment safety, patient safety, protective technologies for special populations, robotics, autonomous vehicle safety, and digital simulations for job safety, which have had significant public health and occupational safety impacts. An internationally recognized scientist for occupational safety, he is involved in the development of institute-wide strategic goals and international safety standards. He has chaired several international conferences and seminars on digital simulations, fall Prevention, anthropometry research, and robotics.

Dr. Hsiao currently manages eight laboratories for NIOSH, including the Virtual Reality Lab, Human Factors Lab, Anthropometry Research Lab, Robotics research, and Vehicle Safety Lab, among others. An editorial board member for eight scientific journals, Dr. Hsiao also has more than 170 publications and patents in engineering innovation for injury control. He also edited two journal special issues and a book on fall prevention and protection. With more than 25 years of program management and safety research experience, he has been frequently invited as an international speaker on strategic planning and research for industrial safety. He is a recipient of more than twenty prestigious service, science, and innovation awards. Among the most recent honors are the Public Health Service Engineer of the Year from the U.S. Government (2011), Human Factors Prize from the Human Factors and Ergonomics Society (2012), Alice Hamilton Award (2013), Bullard-Sherwood Transfer of Knowledge Award (2014), Federal Health Information Technology Innovation Award from the Digital Health Xchange (2015), and Samuel Heyman Service to America Medals Career Achievement Finalist (2016).

Dr. Hsiao was elected as a Fellow of the *Institute of Ergonomics and Human Factors* (UK) in 2003 and an Honorary Fellow of the *Human Factors and Ergonomics Society* (US) in 2005. In 2003, he was credentialed by the U.S. Government Centers for Disease Control and Prevention (CDC) Executive Resources Board as a Silvio O. Conte Senior Biomedical Research Service Fellow and was named a CDC Distinguished Consultant, an appointment analogous to Senior Executive and Endowed Chair Professor ranks.

**報名、繳費期間以及退費標準**

報名、繳費期間

報名手續以完成報名費繳交為準，**一般人士費用為7,000元，學生為1,500元**。學生需檢附學生證正反面影本(蓋有學校註冊章) 或檢附在學證明。限額20名，即日起即可報名至額滿為止，報名截止日為民國108年8月9日止(報名網址：https://reurl.cc/qE8VR )。請於收到報名正取回覆後兩天內劃撥學費(劃撥帳號將會連同正取通知由工作人員寄發)。

退費標準

1. 於民國108年8月8日前辦理退費者，學費退90% ，民國108年8月9日起辦理者退學費的70％，民國106年8月12日起(含)，則不予退費。

2. 課程前置作業已支出之費用，須由學員負擔。

其他注意事項

1. 主辦單位視情況需要，保留更改課程內容權利。

其他疑問，請電洽02-3366-8077徐瑜君，謝謝。