Module Template for New and Revised Undergraduate Modules[1]

Module Code	PSU3456
Module Name	Human and Organisational Factors
ECTS credit weighting	5 ECTS
Semester taught	Semester 1
Module Coordinator/s	Sam Cromie
Module Learning Outcomes with embedded Graduate Attributes	On successful completion of this module, students will be able to: 1. Define the discipline of human factors/ergonomics, the challenges it addresses and the systems perspective it takes [PO 1] 2. Describe a range of analytical methodologies and tools that can be applied to problems in human and organisational factors [PO 1] 3. Be able to critically evaluate theories in human and organisational factors [PO 2,4] 4. Be familiar with the application of several tools and methodologies [PO 1,2,5] 5. Be familiar with how the discipline is applied in a range of industrial and organisational contexts [PO 2,8] 6. Articulate the values of the discipline and how these are promoted in applied research and practice (PO 8,9)
Module Content	Please provide a brief overview of the module of no more than 350 words written so that someone outside your discipline will understand it. Every time a surgeon picks up a scalpel, a bus driver opens the door to a passenger, a waiter takes an order or a lecturer starts a class, a complex web of factors interact to influence whether the patient gets effective and safe treatment, the passenger enjoys a safe and efficient journey, the diner receives a tasty and timely meal and the student experiences a positive learning experience. These factors are the subject matter of the discipline of Human Factors/Ergonomics, which this module explores. Human performance is subject to influences at the levels of task, individual, team, organisation, industry and society. This module will: • Help the student to critically examine the interplay of these factors in determining the dimensions of human performance – safety, efficiency, reliability, sustainability. • Introduce students to the range of interventions that have been developed to enhance performance and help them to critically evaluate their effectiveness

[1] An Introduction to Module Design from AISHE provides information on designing and re-designing modules.

- Expose students to applied human factors research in a range of organisational and societal contexts

The theory and practice of Human and Organisational Factors are presented in the context of current research in the school and current industry applications. This will be done in a way that facilitates ready understanding of them and to enhance the students' ability to apply the concepts through practical exercises in seminars. The content of the course will vary depending on the nature of current research projects and industry engagement.

Indicative topics:

- Introduction
- Task Analysis
- Interface Design
- Managing Risk
- Safety Culture
- Just Culture
- Hazard Awareness & Reporting
- Incident Investigation
- Team Human Factors
- Individual Human Factors

Teaching and Learning Methods[2]

The module comprises 11 x 2-hour workshops.

Typically, the workshops comprise:

1. An initial group activity, such as a serious game, video analysis or task analysis designed to introduce the students to a human factors application, theory or methodology.
2. A lecture on the topic of the group activity.

Some classes may take other formats such as guest lectures from other academics or industry experts, presentations by research staff on their current research or field trips.

ESD pedagogical approaches are embodied in the module as follows:
The workshop format is learner-centred and action-oriented since it gets students actively addressing a challenge or experiencing a phenomenon and giving them the opportunity to construct their individual and shared understanding of the challenge before introducing them to theory and research
Transformative learning is embodied in the module since it takes a systems approach to applied problems, which challenges the default individualistic approach students typically

[2] Trinity-INC provides tips and resources on how to make your curriculum more inclusive.

adopt by default. The implicit question is "What if, instead of trying to change individuals, we seek to understand and change the systems within which they live and work?"

Assessment Details[3]
Please include the following:

- **Assessment Component**
- **Assessment description**
- **Learning Outcome(s) addressed**
- **% of total**

It is recommended that module co-ordinators consider assessment types used across the year to ensure varied assessment methods.

Assessment Component	Assessment Description	LO Addressed	% of total
Summative Assessment: Applied Human Factors project	The project will comprise the application of one or more human factors methodologies to a specific real-world challenge	All	100%
Formative Assessment: Presentation of project idea (circa week 5)	Students will get an opportunity to present their project idea and get feedback from their peers and lecturer on its feasibility and how to approach it	All	
Micro-presentation of project (circa week 10)	Students will get an opportunity to present their project and get feedback from their peers and lecturer on	All	

[3] https://www.tcd.ie/academicpractice/resources/assessment/

	completing and writing it up		

In carrying out a real-world applied project the students will be required to document their data gathering activities and analyse a real-world challenges, limiting the direct value of AI in completing their assignment.

Contact Hours and Indicative Student Workload[4]

Consider how much time an average student needs to invest in the elective to demonstrate the learning outcomes at threshold level. Take into account attendance and time for preparation, including self-study, for all teaching, learning and assessment associated with the module. Workload should be commensurate with ECTS size, which is equivalent to 100-125 student learning hours.

Contact hours: 22 hours
Independent Study (preparation for course and review of materials): 30 hours
Independent Study (preparation for assessment, incl. completion of assessment): 70 hours

Inclusive Curriculum

All modules should be inclusive for all students who learn differently. Please respond to the following questions (i.e. ensuring the course supports engagement and representation of all students)

	PLEASE TICK
1. Have you reviewed the teaching / assessment methods and materials for possible barriers to learning, e.g. students with English as a second language, disabilities, significant external responsibilities, students with IT issues / requiring specific accessibility software etc.?	☒
2. Have you adapted your resources and teaching materials taking into account Trinity's Accessible Information Guidelines (https://www.tcd.ie/disability/teaching-info/TIC/materials.php)?	☒
3. Does the content of your module address diversity? For example, including a diverse demographic profile of authors, diversity of ideas and perspectives, or representation (e.g. pictures of conditions on different	☒

[4] https://www.tcd.ie/academicpractice/resources/assessment_workload/

	skin tones), or by acknowledgement of the homogenous context of the discipline/topic?
	4. Highlight at least two ways which your course/module incorporates principles of inclusivity and accessibility into the curriculum design *(i.e. supports engagement and representation of **all** Trinity students, presents information and content in a variety of ways, and offers variety and options of assessment type. See:* Universal Design for Learning - AHEAD *for more information and guidance, and* Inclusive Curriculum - Equality - Trinity College Dublin (tcd.ie) *for insights from Trinity students)*
	One of the core values of human factors is promoting workplace wellbeing, safety and effective performance for all. In examining human-centred design, for instance, we will be looking at inclusive design and discussing the bias in much design towards designing for the average able-bodied male. Giving students flexibility in selecting their applied projects facilitates them in pursuing a topic of interest to them and/or using a method that fits with their abilities. E.g. some may be more comfortable or able to interview people for their project. Giving students two opportunities to present their developing projects to their peers should help those who have difficulty managing their work towards and end of term deadline.

Indicative Reading List (approx. 4-5 titles)	*Evaluation of Human Work*. 3rd ed, CRC, 2004. *Human Error* James Reason 1990 *The Design of Everyday Things* Don Norman *Work system design for patient safety: the SEIPS model* Pascal Carayon, 2006
Module Pre-requisite	
Module Co-requisite	
Are other Schools/Departments involved in the delivery of this module? If yes, please provide details.	