



# Corsi a scelta Laurea Magistrale - 2° semestre

**Corso: System Design for Sustainability (SDS)**

**Docente: Prof. Carlo Vezzoli**

**Lingua di erogazione: inglese**

**N° max studenti ammessi: 60**

**Modalità d'esame per non frequentanti: SI**

## SCOPE OF THE COURSE

**TO TEACH ABOUT THE THEORY AND THE PRACTICE OF SYSTEM DESIGN FOR SUSTAINABILITY (SDS)**

**or *PRODUCT-SERVICE SYSTEM DESIGN (PSSD) FOR SUSTAINABILITY.***

## COURSE INTERNATIONAL FRAMEWORK

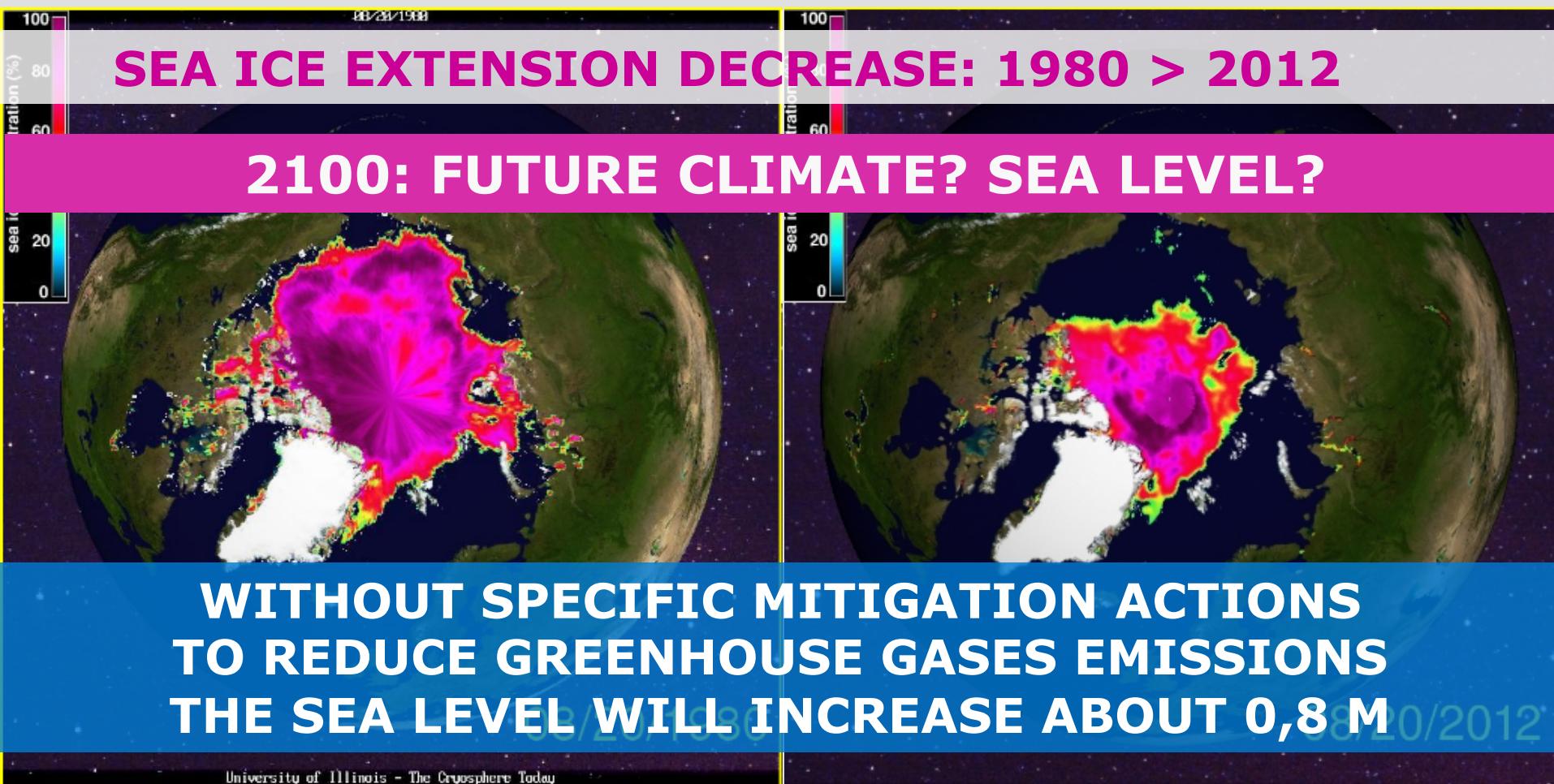
**the course is framed into the LeNS international network of more than 50 universities from all continents, aiming at the diffusion of design for sustainability with an open and copyleft ethos  
(info at [www.lens-international.org](http://www.lens-international.org))**

Prodotto	Interni	Comunicazione	Fashion	D&E	PSSD
✓	✓	✓	✓	✗	✓



# **SUSTAINABLE DEVELOPMENT?**

# **WE ARE VERY CLOSE TO THE COLLAPSE!**





**YEAR 2012:  
PREMATURE DEATH FOR AIR POLLUTION  
(FINE PARTICLES, O<sub>3</sub>, NO<sub>2</sub>, ...)**

**IN EUROPE 491.000 (PEOPLE!)  
IN ITALY 84.000 (PEOPLE!)**

**[EUROPEAN ENVIRONMENT AGENCY – EEA]**

**THESES ARE NUMBERS OF A CIVIL WAR!**

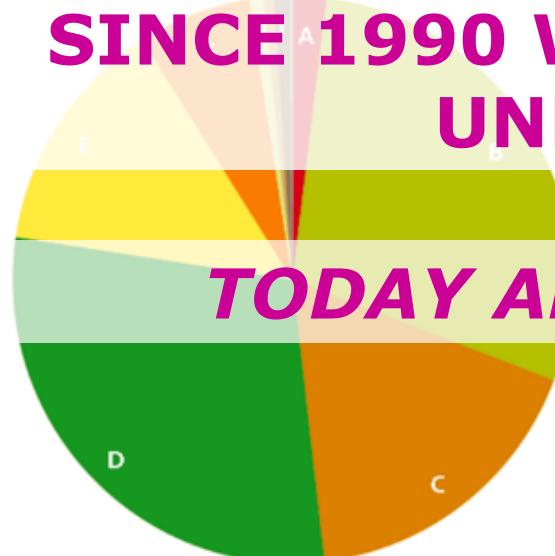


# 2015: FAO FOOD INSECURITY IN THE WORLD

The changing distribution of hunger in the world: numbers and shares of undernourished people by region, 1990–92 and 2014–16

1990–92

H  
J



2014–16

A  
B



**SINCE 1990 WE CAN REPORT A DECREASE OF  
UNDERNURISHED PEOPLE**

**TODAY ARE ONLY (!?) 795 MILLIONS!**

	Number (millions)		Regional share (%)		
	1990–92	2014–16	1990–92	2014–16	
A Developed Asia and the Pacific	32	2	2.1	1.8	
B Sub-Saharan Africa	176	220	17.4	27.7	
C Eastern Asia	295	145	29.2	18.3	
D South-Eastern Asia	138	61	13.6	7.6	
E Latin America and the Caribbean	66	34	6.5	4.3	
F Western Asia	8	19	0.8	2.4	
G Northern Africa	6	4	0.6	0.5	
H Caucasus and Central Asia	10	6	0.9	0.7	
I Oceania	1	1	0.1	0.2	
Total	1 011	795	100	100	



**795 MILLIONS UNDERNURISHED PEOPLE  
ARE MORE THAN ALL EUROPEAN  
INHABITANTS (742 MILLIONS)**

***WUOLD EUROPEAN EVER ACCEPT THIS?***



# **SUSTAINABLE DEVELOPMENT?**

**WE NEED RADICAL CHANGE**

**PROMOTE (DESIGN!)  
SUSTAINABLE SYSTEM  
INNOVATIONS**

**BROADER THAN SINGLE  
PRODUCT OR PROCESS INNOVATION**



# SYSTEM DESIGN FOR SUSTAINABILITY (SDS)

### THE COURSE ADDRESSES THE FOLLOWING QUESTIONS:

- . what are the **scenario** to radically reduce the environmental impact and improve social equity and cohesion in an economically profitable way?
- . what is a **role** a **designer** may play?
- . what a designer should design?
- . what a designer should know (the **knowledge-base**)?
- . what are the method and tools a designer may use (the **know-how**)?

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✓	✓	✓	✓	✗	✓



# Corsi a scelta Laurea Magistrale - 2° semestre

**THE COURSE IS STRUCTURED INTO 2 PARTS:**

- THE THEORETICAL PART (5 lectures)**
- THE DESIGN EXERCISE (8 lectures)**

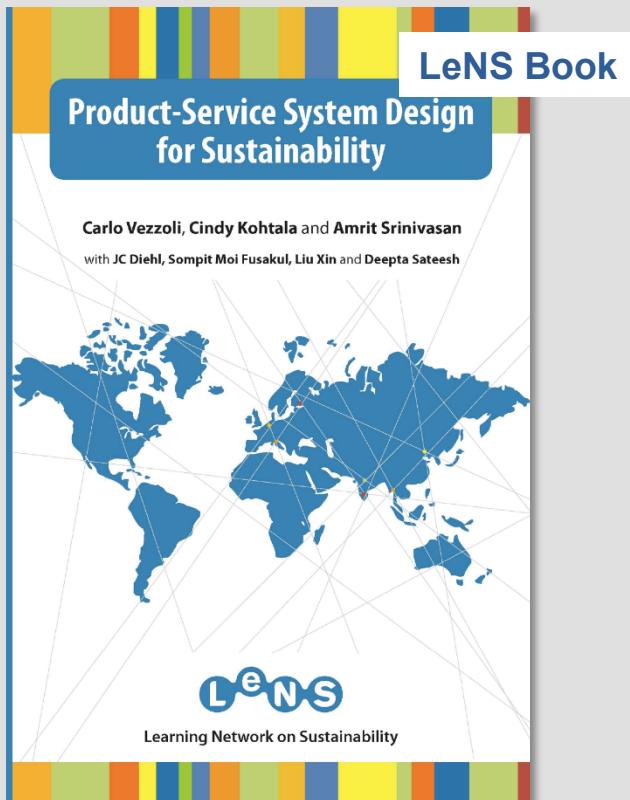
Prodotto	Interni	Comunicazione	Fashion	D&E	PSSD
✓	✓	✓	✓	✗	✓



# Corsi a scelta Laurea Magistrale - 2° semestre

## THE THEORETICAL PART:

All the Learning Resources (book, slides, videos, etc.) of the course lectures can be viewed or downloaded for FREE from [www.lenses.polimi.it](http://www.lenses.polimi.it)



**Slides**

course System Design for Sustainability (SDS)  
learning resource 0.0  
System Design for Sustainability (SDS) course and LeNS/LeNSes introduction  
carlo vezzoli  
politecnico di milano . DESIGN dept. . DIS . School of Design . Italy  
Learning Network on Sustainability (EU asia-link)  
Learning Network on Sustainable energy systems (EU edulink)

**Videos**

course System Design for Sustainability  
subject 1. Sustainable development and design: the reference framework  
learning resource 1.1  
Sustainable development and system innovation  
carlo vezzoli  
politecnico di milano . DESIGN dept. . DIS . School of Design . Italy  
Learning Network on Sustainability (EU asia-link)  
Learning Network on Sustainable energy systems (EU edulink)

LeNS  
Learning Network on Sustainability

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✓	✓	✓	✓	✗	✓



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## DESIGN EXERCISE: THE BRIEF

design an **EATING**, **CLOTHING CARE**, etc. system for a **CAMPUS** of one of the worldwide LeNS university partners, based on the promising models of Sustainable Product-Service Systems (S.PSS) applied to Distributed Economies (e.g. Distributed Renewable Energy - DRE)

## DESIGN EXERCISE: TRANSCULTURAL DESIGN LEARNING PROCESS

the design exercise process will benefit the contributions of a pool of international Professors from the LeNSin universities: they will provide a strategic analysis of the campus and the system to be redesigned as well as remote critics and suggestions on the concepts YOU will design for THEIR context

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12.2015 – 12.2018

the international Learning Network of networks on Sustainability [www.lens-international.org](http://www.lens-international.org)  
Multipolar and open network of network for curricula development on Design for Sustainability,  
focused on Sustainable Product-Service Systems (S.PSS) applied to Distributed Economies (DE).

## PARTNERS

