Design-Led STEAM for Smart Fashion

01 WHAT IS FASHION DESIGN?

Fashion may be broadly defined as the

- **Changing dress styles**
- **The unique combinations of forms**
- **Fabrics**
- **Colours**
- **Details**
- **Fabrications**
- **Favoured by various social groupings at a given period location**

Fashion is an **aesthetic activity** that results in functional, and **occasionally profitable, products**.

Fashion has served as a tool for class **differentiation, self-expression, social performance, cultural formation, and lifestyle articulation** (Kennedy, Calderin, Stoehrer, 2013).

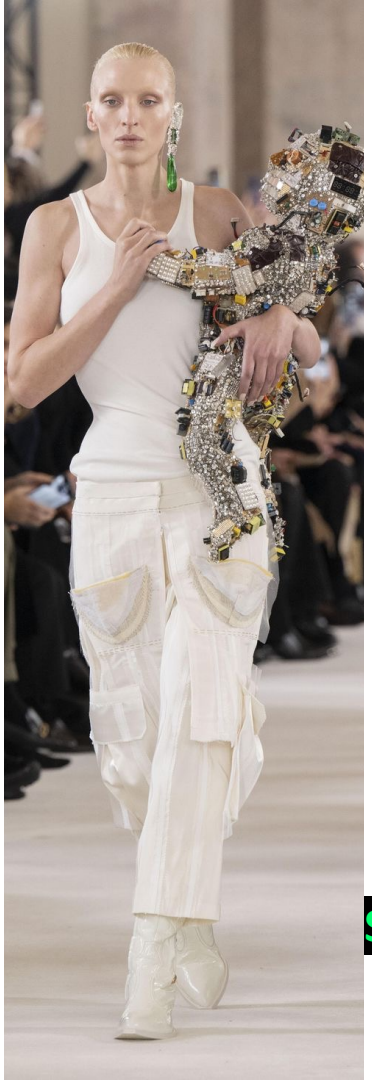
Kennedy, A., Stoehrer, E. B., & Calderin, J. (2013). Fashion design, referenced: A visual guide to the history, language, and practice of fashion. Rockport Pub.

SPRING 2024 COUTURE
CHANEL

02
TYPES OF FASHION

HAUTE COUTURE

- **The highest level of this skill or trade**
- **Signifies sewing or stitching**
- **Extreme attention to detail and finish**
- **Custom-fitted clothing**
- **Couture fabric** (Waddell, 2004)



SPRING 2024 COUTURE
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Waddell, G. (2004). How fashion works : Couture, ready-to-wear and mass production. John Wiley & Sons, Incorporated.

02
TYPES OF FASHION

READY-TO-WEAR

- **Made in standard sizes**
- **Is being marketed completely.**
- **Clothing is crafted in smaller production runs that ensure originality and quality** (Kearney, 1998).

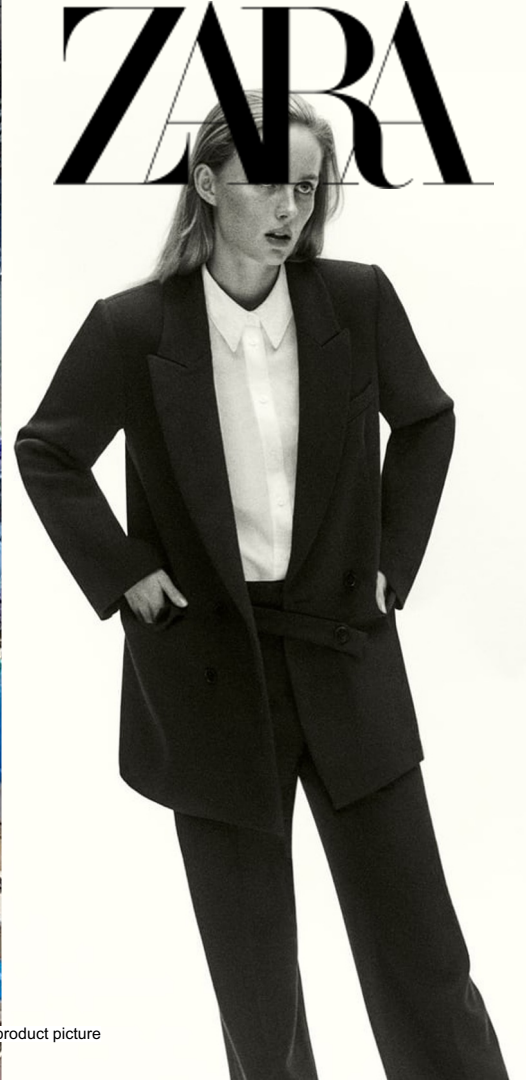
Kearney, M. H. (1998). Ready-to-wear: Discovering grounded formal theory. Research in Nursing & Health., 21(2), 179–186.

02
TYPES OF FASHION

MASS MARKET

- Provide fashion items at affordable prices
- Less expensive textiles and faster
- Manufactured in large quantities
- Mass manufacturing procedures to save time and money
- Only available in standard sizes
- Follow the trend of fashion brand
- (Waddell, 2004)

Mass Market Brands and store picture



Zara product picture

Waddell, G. (2004). How fashion works : Couture, ready-to-wear and mass production. John Wiley & Sons, Incorporated.

03 FASHION DESIGN EXAMPLE

The most recognizable collections - **Comme des Garçons'** Spring 1997 collection.

"Body meets dress, dress meets body", widely known as **reflecting "lumps and bumps"**.

Rei Kawakubo challenged
- Traditional garment forms
- Created distorted outfits that redefine human contours in this instance
- Instead of accentuating the waist and highlighting the fullness

This is the act of **self-expression to society and culture** is something we constantly need in fashion (Shreya, 2020).

Comme des Garçons' spring 1997 collection

Shreya, S. (2020). Comme des Garçons' spring 1997 collection. Ayerhs. https://ayerhsmagazine.wordpress.com/2020/08/17/comme-des-garcons-ss97-by-rei-kawakubo/

SMART TEXTILES

01 WHAT IS SMART TEXTILES?

Passive Intelligence

Textiles with **the ability to detect and react to environmental changes** are referred to as smart textiles (Koncar, 2016).

Passive Smart Textiles: can alter their characteristics in response to ambient stimuli

E.g.

1) **Hydrophobic**
2) **Hydrophilic**
3) **Shape memory materials**

Windproof, water-repellent fabric's jacket

Coperni spring summer 2023 Bella Hadid collection

Koncar, V. (2016). Introduction to smart textiles and their applications.
In Smart textiles and their applications (pp. 1-8). Woodhead Publishing.

01 WHAT IS SMART TEXTILES?

Active Intelligence

Sensors and actuators are included into active smart textiles in order to link internal characteristics to the signal being broadcast (Koncar, 2016).

They are **able to detect various signals** from the environment,
such as

1) **Temperature**
2) **Light intensity**
3) **Pollution**

Heated coat

Courru00e8ges fall '16 runway.

Sensory dress

Smart textiles and sensory dress

Koncar, V. (2016). Introduction to smart textiles and their applications. In Smart textiles and their applications (pp. 1-8). Woodhead Publishing.

02 THE APPLICATION OF SMART TEXTILES

Smart Fabrics

Smart fabrics can sense different environmental conditions and intelligent textiles.

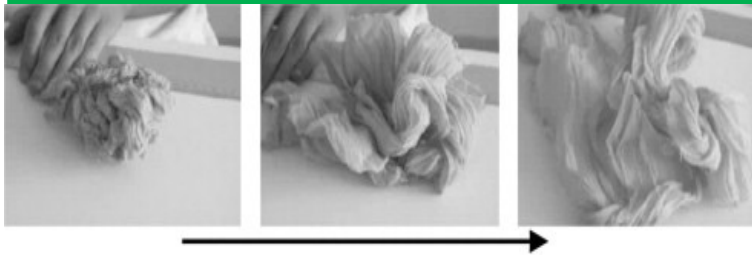
- Can automatically respond to their surroundings or stimuli, such as thermal, chemical, or mechanical changes.

Shape Memory Textiles

A type of material having shape memory functionality woven or finished into textile.

Textiles having exceptional qualities such as shape memory, high deformation recovery, good shock resistance, and flexibility under external circumstances such as temperature, mechanical force, light, pH value, etc. (Dang & Zhao, 2021).

Shape memory textile (Grado zero innovation, 2021)



Koncar, V. (2016). Introduction to smart textiles and their applications. In Smart textiles and their applications (pp. 1-8). Woodhead Publishing.
Dang, T., & Zhao, M. (2021). The application of smart fibers and smart textiles. *Journal of Physics: Conference Series, 1790*, 012084. doi:10.1088/1742-6596/1790/1/012084

03 SMART TEXTILES EXAMPLE

Hug Shirt- telecommunication wearable

The Hug Shirt

The Hug Shirt™ provided people **to send hugs over distances** is a haptic telecommunication wearable.

Sensors that record the intensity, length, and position of touches as well as actuators that replicate the feeling of contact and the emotion of a hug are included in the Hug ShirtTM. With the connection with Bluetooth to transmit the hug movements.