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ICT-TEX

KNOWLEDGE ALLIANCE

ICT IN TEXTILE AND CLOTHING HIGHER EDUCATION AND BUSINESS

Syllabus:DESIGN AND TECHNOLOGIES FOR WEFT AND WARP KNITWEAR PRODUCTION

Total: 20 hours

Introduction to knitting process. Structure of knitting fabric. Stitch types (4 hours)

The course starts with an introduction in the two basic principles of knitting - weft and warp knitting, illustrated with examples. The knitting pattern structure and the different knitting fabric elements are described. Stitch formation and various stitch types in warp and weft knitting are also presented. The workflow for production of knitwear is presented and analyzed and each stage is considered in detail.

Knitted fabric design (6 hours)

In the topic various knitted designs of the elementary knits and their derivatives are presented. The knits are explained and demonstrated with graphical representation using softwares Warp Knitting Pattern Editor and M1+ (Stoll, Germany). Design of knitted patterns for different fabric effects are also considered.

Flat knitting machines (4 hours)

The topic covers the classification of all type knitting machines. The construction and mechanisms in flat knitting machines like: knitting systems, yarn carriers, fabric tension, yarn tension, are described. Interaction and control over and between the mechanisms are considered. Advantages and disadvantages of different types of mechanisms are also presented.

Circular knitting machines (2 hours)

The topic covers the construction and mechanisms in circular knitting machines with large diameter: knitting systems, yarn carriers, control and tension of yarns, control system. The technologies for fabric knitting and 3D knitting products by circular knitting machines are also presented.

Sock knitting machines (2 hours)

In the topic the construction and mechanisms in sock knitting machines: knitting systems, yarn carriers, control and tension of yarns, control system, are presented. The technologiesfor 3D knitting products are considered. The peculiarities in the sock constructions are explained.

Raschel and tricot knitting machines (2 hours)

The topic covers the construction and mechanisms in raschel and tricot knitting machines: guide bars, fabric tension, control and tension of yarns, control system. The technologies for fabric and 3D knitting products are presented.