

## An approach to design solution and virtual representation of garments by using three major pattern making principles.

### Md Moniruzzaman

Assistant Professor Fashion Design & Technology, BGMEA University of Fashion & Technology, Dhaka, Bangladesh, moniruzzamanrasel@buft.edu.bd

### Afroza Akter Rita,

Assistant Professor Fashion Design & Technology, BGMEA University of Fashion & Technology, Dhaka, Bangladesh, afrozaakterrita@buft.edu.bd

### Saudia Haque Oishe,

Fashion Design & Technology, BGMEA University of Fashion & Technology, Dhaka Bangladesh, saudiahaque@buft.edu.bd

### **Abstract:**

Pattern making is an accomplished technique requiring technical ability, flexibility for interpretation of design and a realistic understanding of the construction of garments. It is a feature of bridge function between design and development. This is an effective and conservative approach which can be manipulated by a technique known as flat pattern designing to construct the pattern for various types. The making of patterns is the beginning of the cycle of designing garments. Designs are substantially constructed without understanding that the design is based on certain concepts. Pattern making principles are essential to know for making flat patterns and alterations according to individual design. When we perceive the basic principles of pattern making and modification we produce any kind of design without affecting the original pattern size and shape. By knowing the three basic principles, any pattern can be generated and changed. Analyze the designs and determine which principles to apply to the developing pattern in order to ensure that the exact replica of the design will emerge from the finished pattern shapes. Working pattern, consist mainly of basic bodice front and back pattern derived from them. These working patterns should remain seamless. These patterns can be manipulated and changed into the shapes through the slash-spread technique. The slash-spread technique is easy to understand as it clearly illustrates the changes taking place. This paper was designed to understand the three major pattern making principles of a particular design of flat pattern making systems through three dimensional pattern making process.

### **Keywords :**

CLO 3D; Virtual, working pattern; Dart Manipulation; Added fullness; Contouring; Design analysis

### **References :**

- [1] Dennis Brandl, *Design Patterns for Flexible Manufacturing*. 2006.
- [2] T. Potgieter and C. Lavelle, "Problem placement in fashion design practice : Reflections and recommendations for fashion design education in an era of complexity," pp. 450–458, 2021.
- [3] S. Efrat, "Development of a method for generating patterns for garments that conform to the shape of the human body," 1982.
- [4] T. J. Kang and S. M. Kim, "Development of three-dimensional apparel CAD system Part 1: Flat garment pattern drafting system," *Int. J. Cloth. Sci. Technol.*, vol. 12, no. 1, pp. 26–38, 2000, doi: 10.1108/EUM0000000005318.
- [5] Z. Stjepanović, "Computer-aided processes in garment production Features of CAD/CAM hardware," *Int. J. Cloth. Sci. Technol.*, vol. 7, no. 2–3, pp. 81–88, 1995, doi: 10.1108/09556229510087236.
- [6] E. C. McKinney, E. Bye, and K. Labat, "Building patternmaking theory: A case study of published patternmaking practices for pants," *Int. J. Fash. Des. Technol. Educ.*, vol. 5, no. 3, pp. 153–167, 2012, doi: 10.1080/17543266.2012.666269.
- [7] T. Rissanen, "Types of Fashion Design and Patternmaking Practice," *Nord. 2007 - Des. Inq.*, p. 5, 2007, [Online]. Available: <http://www.nordes.org/opj/index.php/n13/article/view/185/168>
- [8] H. Joseph-armstrong, *for Fashion Design Fifth Edition*. 2010.
- [9] E. Saeidi and V. S. Wimberley, "Precious cut: exploring creative pattern cutting and draping for zero-waste design," *Int. J. Fash. Des. Technol. Educ.*, vol. 11, no. 2, pp. 243–253, 2018, doi: 10.1080/17543266.2017.1389997.
- [10] S. Gill, "A review of research and innovation in garment sizing, prototyping and fitting," *Text. Prog.*, vol. 47, no. 1, pp. 1–85, 2015, doi: 10.1080/00405167.2015.1023512.
- [11] A. Burns, "Rethinking Fabric : The Application of Fabric Manipulation Techniques in Fashion Design Education," no. 2021, doi: 10.1111/jade.12375.
- [12] O. S. M. Mansour, "Integrating the Concept of Modular Design and Dart Manipulation Technique for the Abstract : Keywords :," *Int. Des. J.*, vol. 7, no. 4, pp. 87–97, 2009.

- [13] B. F. Practice and D. Sgro, "70 . Fashionable Early Conference ," pp. 61–70, 2012.
- [14] M. Seock, Yoo-Kyoung; Norton, "Improving garment fit and function through ease quantificatio," *J. Fash. Mark. Manag.*, vol. 11, no. 4, pp. 571–586, 2007.
- [15] S. Gill and N. Chadwick, "Determination of ease allowances included in pattern construction methods," *Int. J. Fash. Des. Technol. Educ.*, vol. 2, no. 1, pp. 23–31, 2009, doi: 10.1080/17543260903018990.
- [16] N. Jariyapunya and B. Musilová, "Analysis of Stress and Strain to Determine the Pressure Changes in Tight-Fitting Garment," *Autex Res. J.*, vol. 20, no. 1, pp. 49–55, 2020, doi: 10.2478/aut-2019-0006.
- [17] Z. G. Luo and M. M. F. Yuen, "Reactive 2D/3D garment pattern design modification," *CAD Comput. Aided Des.*, vol. 37, no. 6, pp. 623–630, 2005, doi: 10.1016/j.cad.2004.09.005.
- [18] M. Fontana, C. Rizzi, and U. Cugini, "3D virtual apparel design for industrial applications," *CAD Comput. Aided Des.*, vol. 37, no. 6, pp. 609–622, 2005, doi: 10.1016/j.cad.2004.09.004.
- [19] A. A. Rita, "Understanding the Basic Dress Foundation of Pattern Making : A Complete Study of Darting and Fitting of the garment Understanding the Basic Dress Foundation of Pattern Making : A Complete Study of Darting and Fitting of the garment," no. December 2021, 2022.

### **Paper History:**

Paper received 27<sup>th</sup> April 2021, Accepted 27<sup>th</sup> August 2022, Published 1<sup>st</sup> of September 2022