Garment analysis and specification development

- Garment analysis is to meet particular business needs:
  - Consider cost and quality.
  - Strategic plan for product lines.
- Garment analysis guide:
  1. Style description
  2. Positioning strategy
  3. Sizing and fit
  4. Materials selection
  5. Components assembly
  6. Final assembly and finishing
  7. Style presentation

Style Description (Part 1)

- The purpose:
  - Identification and development of a complete description of a style.
- Style specifications are being developed:
  - Line adoption has taken place.
  - Assigned a style number, the key identifier of the garment.
  - Determine body types and size ranges for the style.
  - To communicate identity of the style using specifications include brand, style number, merchandise group, selling period, body types and size ranges, etc.
  - See Example 5-1 pp. 134–135

Positioning Strategy (Part 2)

- The purpose:
  - Foundation for garment analysis.
- Factors:
  - Example: Functional/Aesthetic priorities
  - Factors are useful in describing product's purpose and styling.
  - To position a product to make it desirable for a particular target market.
- What is the primary requirement?
  - See each factor description p.136–138.

Sizing and Fit (Part 3)

- Size is labeled in a manner that allows customers to find the right size.
- Sizing standards
  - To offer consistency in fit among styles, product lines, and seasonal offerings.
- Sizing systems and size ranges
  - Sizing systems = Sizing standards
  - For apparel sizing, body types are classified by body proportions as related to age and gender.
  - Examples: See Figure 5-3, p. 139.
- Indicators of size:
  - General body size (S, M, L, XL)
  - Numbers (Size 6, 12, 18)
    - Misses 8, 10, 12; Junior 7, 9, 11.
    - Numbers do not indicate the actual garment dimensions.

Industry sizing standards
- Inconsistent sizing systems (see Table 5-2, p. 144).
Materials selection (Part 4)

- Materials = Fabrics and Findings:
  - Findings: all the rest of materials required to complete garments
    - Support/shaping materials, trims, labels, threads, etc.
- Criteria for analysis of materials
  - Material name, content, yarn type and size, fabrication, count, weight, drapability, structural design, color application, finishes, care, method of application.
  - See Example 5-4, p. 148.

Garment Analysis

- Part 1 style description
- Part 2 positioning strategy
- Part 3 sizing and fit
- Measure garments from ADM 4307 Blue packet

Influences on the Design Process

- Fashion Focus on the product line
  - Collections: the leading edge of fashion.
  - Knockoffs: adoptions or modification
- Size and organization of the firm
  - Small firms or Large firms
  - Freelance designers: sell original designs
  - Outside design studios: offer specialized service market research or international sourcing.
- Use of licensing
  - Private label for retail stores (exclusive license)
    - Example: Jaclyn Smith for Kmart
  - Merchandising calendar (see p. 165).
    - Timing of product development processes.
    - About 30 weeks 47 activities.

Creative design process

- Developing the line concept
  - Inspiration board and concept board
  - Creating designs for merchandise groups
  - Creating original designs
    - Croquis, flats, drapes.
    - Modification of styles from previous season’s line.
  - Copying styles (knockoffs).
- Selecting fabrics and garment finishes
  - Exclusivity of fabric design (confine).
  - Fabric cost
  - Fabric characteristic affecting utilization
    - Differences in the face and back
  - Lengthwise symmetry, crosswise symmetry, need to match the design, width of fabric (60 inch or 45 inch)
  - Garment finishing
    - Chemical treatments for wrinkle resistance / Garment dying
- Establishing garment fit
  - Basic blocks: a set of pattern pieces.
    - Reflect the firm’s sizing standards and fit.
  - Style blocks: a variation of the basic block to include comfort and styling ease.
  - Patterns: guides for cutting fabric to form a garment.
    - Flat pattern or draping
  - Creative design prototype
    - Sample makers work with designers.
Creative design process

- Costing designs and developing design specifications
  - Pre-costing based on a sketch.
  - Design specifications (p.182)
- Line adoption
  - A design becomes a style when it is accepted into the line.
  - Identifier: through technical design: style number.
- Technical design
  - “A group of processes required to perfect a design into a style and make the style producible with the fit and quality level desired by the target customer.”
  - Perfection of style and fit
  - Production patterns and grading
  - Style specifications: example Figure 6-11, p. 190
  - This includes detailed costing that is based on style samples and specifications.
- Product quality and consistency (important !!!)

Apparel design technology

- Computer Aided Design (CAD)
  - Pattern making, grading, marker making

MTM software

V-Stitcher software (3D to 2D)

Mass customization of MTM

Preproduction operations

- Initiation of preproduction operations
  - Technical designers and production pattern makers develop the patterns for styles accepted into the line.
  - Pattern verification checking list:
    - Correct size and style number marking
    - Correctness of grade increments
    - Compatibility of grading with style specifications
    - Length and alignment of adjoining seam allowances.
    - Notch placement and alignment with adjoining pattern pieces.
    - Placement of internal markings
    - Placement of grain markings.
Initiation of preproduction operations

Cut order planning:
- Customer orders into cutting orders.
- Remember! "Cut to Order" vs. "Cut to Stock" production.
- Cut plan:
  - Based on "Defect maps" that identify locations of breaks and flaws, width and length variations of pieces on a role.
  - Estimate the number of piles based on defect maps (=Chart spreading).
- Marker planning:
  - Determine the most efficient combination of sizes and shades for each order (Optimal use of materials and cutting systems).
  - One cutting order may require several markers.
- Example: Remnant marker for the short pieces and ends of roles.
- Lay planning:
  - A lay is a stack of fabric plies prepared for cutting.
  - Managing cutting room labor and table space.
- Spreading and cutting schedule are affected by:
  - Table length, type of equipment, spread length, spreading time, and cutting time.

Dimension of marker making

- Blocked (or Sectioned) markers:
  - Contain all the pattern pieces for 1 style in 1 or 2 sizes.
  - Advantage: Used to adjust the volume requirements (Example: for a remnant marker).
  - End to end shade variations of the fabric. See Figure 13-2, p. 398
  - Stepped spread.
- Continuous markers:
  - Contain all the pattern pieces for all sizes in a single cutting.
  - Advantage: Better utilization.
  - Planned with Sliced Markers:
    - To avoid excessive fabric waste and incomplete pieces. See Figure 13-3, p. 398

Marker making

- A marker making:
  - Is the process of determining the most efficient layout of pattern pieces for a specified style, fabric, and distribution of sizes.
- Marker making methods:
  - Manually produced markers:
    - Errors (poor line definitions, placement and alignment of pieces), time consuming, space.
  - Computerized marker making:
    - Marker efficiency, reuse of previously made markers, shortest response time. (save up to 50 piece marker).
- Plotting:
  - Printing pattern pieces or markers
- Dimensions of markers:
  - Fit the "cuttable" widths of fabric (e.g. 59/60"
  - NOTE: Selvages are not usable!

Marker efficiency

- Marker efficiency:
  - Determined by fabric utilization (Example: U=91.26 %)
  - % of the total fabric that is actually used in garment parts.
  - How tightly the pattern pieces fit.
- Factors that affect marker efficiency:
  - Fabric characteristics (fabric design)
  - Shapes of pattern pieces (irregular shape)
  - Grain requirements

Marker types and mode

- Types of markers:
  - Open markers (for unfold fabric)
  - Closed markers (fold a half)
- Marker symmetric and direction:
  - Symmetric/Asymmetric fabrics
  - Directional/Non-directional fabrics
- Marker mode:
  - Nap-one-way (N/O/W)
  - Nap-up-and-down (N/U/D) - e.g. size 7 down/ size 9 up
  - * Nap: indicate fabric direction

[Spreading]

- Spreading:
  - The process of superimposing lengths of fabric on a spreading table. (1~300 plies)
  - Spreading modes (See Figure 13-4, p. 403)
  - Directions of fabric face:
    - Facing-one-way (F/O/W)
    - Face-to-face (F/F)
  - Direction of fabric nap. (N/O/W or N/U/D)
  - K/F with NUID: the fastest method, least costly, and the lowest quality.
  - F/O/W with NUID: more time-consuming, expensive.
- Spreading quality:
  - Fabric defects
  - Stack tension
  - Flatness of a spread (selvages or skewed)
  - Ply alignment
  - Static electricity
Cutting and Off loading

- Portable cutting knives:
  - Vertical straight knives
  - Rotary (round) knives (See pp.414~415)
- Stationary cutters:
  - Band knives
  - Die cutting
- Computerized knife cutters:
  - Gerber Technology, Inc.
  - Lectra Systems (laser cutting)
- Off loading:
  - Off loading is the process of removing cut parts from the cutting table, counting, ticketing, and grouping them.
  - Done through bundle tickets with cutting orders:
    - To monitor the progress of each garment
    - To ensure that all the correct parts are assembled
    - To compensate operators for their work on each garment

Next class

- Read Ch.7, and 9.
- Submit Assignment #2 (Garment Analysis)
- Assignment #1 presentation.