



Spring 2019
18 Class Sessions – 3 hours each

January 30, 2019 Ends: June 5, 2019

Wednesday Nights 6 - 9 pm

OR

January 31, 2019 Ends: June 6, 2019

Thursday Mornings 9 – 12 Noon

Fundamentals of Patternmaking:
Women's Draping on Body Doubles

West City Campus
3249 Fordham Street
San Diego, CA 92110
Room 209

Instructor: Joan McKenna
mckenna@gothere.com
619-588-2244
Blog: www.sewalongwithjoanie.com

ALL My Syllabi are ALWAYS subject to change.

Class Notes: Due to the fact that the class is only 3 hours in length and once a week, this is going to be a course with much homework. The course will tie together Croqui Making, Design, Draping, and First-Pattern Patternmaking. There will be a capstone event at the end of this course so you can show off the skills you have learned.

Download, and Print, this syllabus, Class Etiquette Notes, & Patternmaking Glossary. There is a Fandango Field Trip on Saturday, February 2, 2019 to buy some supplies.

Hospitality and Consumer Sciences

SLOs, Visions, Missions, Entrepreneurial Fashion Patternmaking (EFP)

Program Purpose/Vision: The purpose is to provide San Diego Community College Continuing Education with non-credit courses consistent with the current Hospitality and Consumer Sciences Program Plan for Community Colleges.

Mission Statement: Students completing courses or programs in San Diego Continuing Education's Hospitality and Consumer Sciences department will gain knowledge and skills in any of the possible subject matter offerings (foods/nutrition; culinary arts/hospitality/fashion productions/fashion merchandising/textiles/interior design/life management/consumer issues and personal development) in order to prepare for vocational careers in the above and to positively affect one's quality of life.

SDCE Institutional Student Learning Outcomes:

1. Social Responsibility

SDCE students demonstrate interpersonal skills by learning and working cooperatively in a diverse environment.

2. Effective Communication

SDCE students demonstrate effective communication skills.

3. Critical Thinking

SDCE students critically process information, make decisions, and solve problems independently or cooperatively.

4. Personal and Professional Development

SDCE students pursue short term and life-long learning goals, mastering necessary skills and using resource management and self-advocacy skills to cope with changing situations in their lives.

5. Diversity

SDCE students incorporate and use principles of civility and compassion as they develop knowledge and skills: recognizing, respecting and valuing the place and role of all individuals in their community.

Fashion Discipline Student Learning Outcome (SLO):

Students completing a fashion or fashion production course or program will be able to understand and apply concepts, technologies, related skills and techniques by successfully completing class projects in order to prepare for fashion careers.

Course: Draping on Body Doubles

Students will establish their knowledge and competencies by draping, patterning and building a final dress that fits their dress form, and fit model or themselves.

Course Objectives:

Upon successful completion of the course the student will be able to:

1. Pad out a commercial dress form that conforms to the fit model.
2. Define draping phraseology and basic patternmaking tools.
3. Demonstrate how draping techniques are used in pattern production.

4. Use croqui silhouettes to draw a draped garment that flatters the body proportions of the fit model.
5. Use the principles of draping to drape an original design that fits the fit model, from our text book.
6. Apply the philosophy of fit and ease to a draped design.
7. Review their draping skill by completion of assigned project(s).
8. Select appropriate fashion fabric and findings for their original draped design.
9. Add draping skills to their patternmaking knowledge which is transferable to the entrepreneurial venture career market along with soft skills.
9. Student **must** attend 80% of the classes in the course. Missing more than 20% of the course hours will affect learning, and grade. What you don't finish in class will be assigned for homework. Keep up with the assignments.

(Total: Draping on Body Doubles Class hours: 54 x 80% = 43 Hours)

Method of Instruction:

Methods of Instruction may include, but are not limited to: classroom lectures, laboratory classroom discussions and instruction, digital and hardcopy handouts, collaborative learning, peer guidance, demonstrations, patternmaking and related software programs, internet research, spreadsheet software, text books, recommended readings, field trips, guest speakers, completion of portfolios, student presentations, sewn projects, personalized attention, student final projects and course end evaluations. To get Individualized Help: Write your name on the white board in descending order under the word "Help."

Draping on Body Doubles Student Syllabus and Needs List

Class 1: – First Day of Class. Introductions. Computer/Cell Phone Registration. Use your CSIDs number. Student Learning Outcome Sheets. Tools and Equipment supplied by the School. Syllabus. Patternmaking Terms. Patternmaker Measuring Handout. If you use a fit model, they will need to come to class several times for fittings. Classroom Etiquette. Handouts and Resources and a **USB**. Keep up with assignments. **Homework is a must !!! DRESS FORMS CAN NOT BE STORED AT THE SCHOOL. The School HAS NO SECURE PLACE FOR THEM.** BUT.....** Sewing Level required for the course: Intermediate or talk to the instructor. Need to know how to fit and sew. Cutting in room 209. Lap Top Computers. Access to a sewing machine or TLC for the school's machines. Signing out Sewing Machines to use/EROs. Required Text(s). Receiving help and learning from each other. Always list your topic on the "Help" board. Buying your project needs and patternmaking supplies. **The 48-inch separating zipper. Keyston Stuffing.** You will need your lifetime sewing kit. Email your absences to the instructor. **Cleaning up at end of EACH class: 15 minutes before class ends. Students need to Sweep and make sure the tables are cleaned before they go home.** Today's Lesson: Buying a dress form. Checking Wawak.com, Ebay.com and Overstock.com. Measuring for your dress form slipcover. Supply list and what to wear for measuring and picture taking – week 2. What is a croqui? Designing on Croqui – Power Point Presentation. (USB with Patternmaking Handouts.)

Future Events

Sew Pro's Field Trip to the LA garment District and M & L Fabrics. \$50 - 60. Call Clairemont Sew Pro's for details: 1-858-279-2500. **Date: April ??, 2019**

There will be a Capstone Event on June 6, 2019. When I know more, I will let you know. You will be ready for this event with a wonderful shirt and Pant outfit.

Fandango (optional field trip)

A field trip to buy sewing supplies at Yardage Town and Central Sewing with Joan McKenna. Bring your syllabus and some form of payment (about \$100). There are 2 draping courses and my Sewing Fundamentals – Apparel Construction - class will join.

First Saturday after first class (date): February 2, 2019

9:30 AM: Yardage Town. 1043 Broadway, El Cajon 92021. Phone: 619-444-3208.

- Buy solid color, woven, light denim or pants weight fabric for your dress form slipcover. (Nothing stretchy.)
- *Start with 8 yards of inexpensive **Woven Solid LIGHT COLOR** fabric. MUSLIN okay, but expensive. Buy Broadcloth from Yardage Town. It is sold 45 and 60 inches wide.

11 AM: Central Sewing East. 1125 North Second Street, El Cajon 2021. Phone: 619-447-3244.

- Mechanical chalk pencil, Bernina & Pfaff bobbins, Schmetz needles
- Needlepoint tracing wheel.
- * Fairgate ruler # 01-128P Fashion 3 in 1 Rule (Dritz Fashion Ruler is okay to use)
- *1 or 2 1 ½ inch (the large size) pattern hooks.

Optional lunch:

- Crafted Greens. 745 Jamacha Road; El Cajon, CA 92019 Note that 2nd Avenue, turns into Jamacha Road at the corner of Main and 2nd. Go straight past Sprouts and stay in the left lane to turn into the small shopping center where Crafted Greens is. It is about a mile down the road. 1-619-328-4044. <http://www.craftedgreens.com/menu/>

Homework: Pre-shrink your fabric.

Class 2: – Measuring for your slipcover. **Taking pictures** for your personal croqui. Need to wear a dark tight t-shirt and leggings. **Check the needs list for what you need for today's Class !!!!!**

Homework: You will need the Function Key Strip, Your cell phone pictures, your measurements, and your USB for the next class. Measuring will occur in groups of 3: The victim, the scribe, and the measurement taker. You are required to stay till your entire group gets measured and your cell phone pictures are taken.

Student Needs List for Measuring Day: Wednesday – June 14th, 2017.

DARK Body Suit, or Leotard, or bathing suit, and tights, or leggings. You can wear a tight fitting t-shirt and tight shorts.

Socks (Measurements are taken without shoes on.)

GOOD BRA – to be permanently put on the dressform. Needs to be one you like. NOT a Water Bra.

Post-it notes

Correction Tape

Fairly New or New Tape Measure

Armpit Tape Measure only IF you have one.

Ultra and fine Sharpie Markers
1 or 2 sharp Pencils with erasers
Long Straight Pins with 'bulb' heads
6-inch Sewing Gauge
6 or 7 Large Safety Pins
Enough 1-inch elastic to cover your bust, waist, hips, and abdomen, + 6 inches.
"Anything" Scissor
2 or 2 ½ yards of weighted cord with ends sealed. Noose one end.
Highlighter

Homework: Remember to bring your syllabus to Saturday's Fandango !!!!!

Class 3: _____ - We will be making our croqui pictures and our dressform cover pattern. Print your name on each piece. The instructor will be doing all the printing. Save your dressform cover on your **USB**. Remember to bring a fairly new tape measure to class. We will be using Patternmaker Software to produce a dressform cover in your fit model's size. We will be using your photo editor and Power Point to make our croqui pictures. The school owns a plotter for printing our dress form covers. This may take 2 class periods.

Croqui Silhouette Instructions

Make sure you have the required 4 pictures: front view, 2 side views (left & right) and back view. Each picture should be complete from toe through hair. (Cell phone pictures work well.) Bring the connection between your phone and the computer.

In Paint: Crop all your photos long and narrow. **DO NOT LOSE THE PORTIONS OF THE BODY.** The newly cropped photos need to be saved under a different name. They should all be about 8 inches tall. Do not lose any feet or hair. Place the 4 pictures on **ONE** Power Point Slide. **SAVE** frequently. Print. Trace around the 4 pictures using the sun as your back light. Use this as your original. Put your name and the date in a corner. Put in clear sheet protector. Photocopy the original and design on your personal croqui copies. (The instructor will make your copies.)

Homework: Design 3 dresses or skirt outfits. (We will not be draping pants.) Use the designs from our text book. Discuss with instructor the ease of draping your designs. Chose the **one** you like the best to drape and sew up for your final project.

Class 4: _____ – **!!!!!!!!!!!!VERY IMPORTANT:** Cut out your Patternmaker computer generated pattern with one-inch seam allowances. Remember the long sleeve to use for the right arm. There is **NO TIME** to pin the pattern together and try it on. Cut and sew your **NON STRETCH DENIM** dress form cover and right arm on grain with **machine basting stitches**. The arm must be separate. Bring the cover and right arm to have a fitting with the instructor. Leave back zipper place totally open. Have a **fit model** fitting with the instructor. Remember to always wear your **DRESSFORM BRA** when having dressform fittings.

Class 5: _____ – Continue to Fit and sew with big basting stitches. Remember to always wear your **DRESSFORM BRA** when having dressform fittings. **Machine baste** zipper in center back. Zipper heading should be 1 inch down from neck edge. The extra length of zipper, needs to hang freely at the bottom of the slip cover. Zipper needs to be inserted right side out. Have another fitting.

Remember to always wear your DRESSFORM BRA when having dressform fittings. Once the dress form is fitting you correctly, we will separate the two breasts, and make armhole darts. Resew with small 10 to 12 stitches per inch. In the final fitting, we will mark your side seams, CF, CB, Bust, Waist, Hips, and Cross Mark Apex in pencil. Complete the “casing bottom” of the form cover so that it pulls tight with the cording inserted.

Class 6: _____ – By week 6, you need your dressform. Measure and make the dress form 1 inch SMALLER than your measurements. (Bust, Waist, Hips) Pad out with upholstery batting 2 inches extra for the bust, 1 inch extra for the waist and 2 inches for the high and low hips . Put the bra on the dressform. Hide the dress form keys in the bra. You will need the cleaner's plastic bag to be able to easily fit your dress form cover on the dress form. Fit your dress form cover on the dress form over the dry cleaner's plastic. Zip up the cover. Measure your basic measurements on the form. FOR EASE: Make the tolerance 2 inches bigger than your bust measurement. For your waist, make the tolerance 1 inch bigger. For your high and low hips, use 2 inches of tolerance.

Homework: Cover the armhole and neck openings with extra pieces of fabric. Hand stitch in place.

Class 7: _____ – Catch up day. ~~Sew on Soutache braid by hand~~ Use 3/32 inch draping tape to mark: side seams, CF, CB, Bust, Waist, Hips, and Cross Mark Apex. Work on completing your right arm. Baste together the dress form “arm.” The arm should be made for the right side of the dress form. Fit the fabric arm to your arm. It should be a tight fit. Resew with default stitching. Completely sew up the “arm” openings putting maxi piping in wrist and cap. Stuff according to the directions in your text. To prevent overstuffing: compare measurements of stuffed bicep with your bicep measurements. Correct stuffing as needed. Dress form arm should have a tolerance of 1/2" all over. What you didn't finish in class, is assigned for **Homework**.

Class 8 _____ – Today, I will grade your completed Dress Form. Pictures will be taken for grading purposes. You will need the * asterisk items from the needs list. We will **drape** the bodice front and back this class. You will “Drape Along with Joanie” in class. Trust me. It is easy with your text – Connie Amaden-Crawford does a great job.

Class 9: _____ – Learn to drape the Basic Skirt –. You will “Drape Along with Joanie” in class. We will create patterns from the bodice and skirt drapes next class.

Class 10: _____ – You will make patterns for your bodice and skirt drapes. Pictures will be taken for grading.

Class 11: _____ – We will drape the Basic Torso Pattern – We will create patterns from the drapes. You will “Drape Along with Joanie” in class. Pictures will be taken. **Homework:** Take some pattern paper home and trace off your Torso Patterns.

Class 12: _____ – Design at least 3 original dresses on 3 separate croqui. Use designs from your text book. Each dress must show: front, both sides and back view. The Instructor *knows, that you may be uncomfortable using this new skill. Stick to things you can drape from our text book.* KEEP ALL DESIGNS SIMPLE. One of these designs will be made up into your final draped garment. Give the instructor your chosen croqui fashion designs. Together we will decide which one you will drape. I will photocopy the chosen design. I will also take pictures of your Torso Patterns that you did for homework. Number your designs 1 for first choice, 2 for second choice and 3 for third choice. Discuss your choices with the instructor.

Class 13: _____ – Work on your final drapes from your textbook.

Class 14: _____ – Make a pattern from your final drapes. Ask the instructor to demo facings, and hems.

Class 15: _____ – Cut and sew up your final draped garment(s). It must be either a dress or a skirt and top out of woven fabric.

Class 16: _____ – Continue working on your original dress.

Class 17: _____ – Continue working on your original dress.

Class 18: _____ – Last Day of Class ☹️. Time given for project completions. Pictures for grading will be taken of you, your final projects and your dressforms. **Capstone event.**

Student Needs List: (*Asterisk items not needed until AFTER form is made.)

To Pad Out the Dress Form:

Full Size” Dress Form – Slightly smaller than your (BUST-WAIST-HIP) measurements.

(A Salvation Army FIND will work) www.wawak.com for the best prices on new forms.

NON STRETCH solid color Light DENIM or Pants Weight fabric. (Pre-shrink before cutting.)

4 ½ yds. 45 inch wide for sizes for smaller sizes*.

3 ½ yds. 60 inch wide for sizes for smaller sizes*.

*Buy a yard more for larger sizes.

48 inch separating zipper - **Instructor will supply the first 20 zippers.**

The kind that we need, is used in Jackets, Rainwear, & Sportswear.

www.inzipper.com is a great place that you can order from if you want a nylon zipper.

1 package of Maxi Piping for arm.

Upholstery Batting. (Go to **Keyston Brothers**) Split this with 2 other fellow students. 1 \$80 bag*** services 3 dressforms. Each bag/roll will contain 20 – 25 pounds of upholstery stuffing. ***To get the discounted price of \$80 bring your student ID and say you are in this course. Item number: CTN5050S – 50% Linters & 50% Staple.

Keyston Brothers (Mondays & Tuesdays: 8 - 4. Wednesdays – Fridays: 7:30 AM – 4 PM.)

9669 Aero Drive

San Diego, CA 92123-1805

(858) 277-7770 or (858) 598-1190

BRING YOUR CSIDs card for the discount. *****

Good Fitting Bra for the form. One you are happy with now. Used in Dressform construction.

1 to 2 Plastic bags/covers/wraps from dry cleaners.

1 to 1 ½ yards Heavy Cord. (Extra Long Shoe Lace is fine.)

Polyester Thread. (Close to denim color but not an exact match)

Fabric Scissors

Paper Scissors

Quilting Straight Pins. (The ones with big yellow heads are fine)

Tape Measure – Fairly new. (They really do stretch out.)

4 gig **USB**

Lifetime Sewing Kit

¼ inch double folded bias tape. (Ribbon just isn't strong enough to hang the arm.)

2 yards of weighted cord with ends tied off and one end made into a noose.

***3/32 inch dress form tape. Draping Tape (Get more than one color)

https://www.amazon.com/s/ref=nb_sb_noss?url=search-alias%3Daps&field-keywords=Professional-Draping-Tape-for-fashion-draping-design Inexpensive if you buy 5 colors at a time.

<https://www.pgmdressform.com/Professional-Draping-Tape-for-fashion-draping-design> Great pricing on individual colors.

~~(Optional) 10–15 yards Soutache Braid. (Optional)~~

http://www.etsy.com/search/supplies?search_submit=&q=soutache+braid&view_type=gallery&ship_to=US&page=2 We just do not have the time.....

To Learn to Drape:

*Needlepoint tracing wheel. **Check with Central Sewing in El Cajon**

* Fairgate ruler # 01-128P Fashion 3 in 1 Rule (Dritz Fashion Ruler is okay to use)

*1 or 2 1 ½ inch (the large size) pattern hooks.

*Start with 8 yards of inexpensive **Woven Solid LIGHT COLOR** fabric. MUSLIN okay, but expensive. Buy Broadcloth from Yardage Town. It is sold 45 and 60 inches wide.

NOTE: Final garment may be draped in a print or plaid broadcloth.

*Eraser, B pencil (#2 pencils with easers okay.)

*Colored pencils

*4 Ultra Fine Sharpie Markers felt-tip pens – red, blue, green and black

*1 - 2 yards fusible nylon tricot (**May need more**)

*18" x 2" Clear C-Thru Grid Plastic Ruler

*3/4 inch Scotch Magic tape (Green Scotch Tape)

*1 roll of adding machine tape. (From Staples)

Required Textbook for Industry Draping:

Amaden-Crawford, C. (2018). *The Art of Fashion Draping*. (5th. Ed.) New York, NY: Fairchild Publications. The instructor will be using the 5th edition. **Any OLDER edition is fine to use !!!**

Recommended Text for Fitting:

Liechty, E., Rasband, J., Pottberg-Steineckert, D. (Older Editions are just fine). *Fitting and Pattern Alteration: A Multi-Method Approach to the Art of Style Selection, Fitting and Alteration*. New York, NY: Fairchild Publications. ISBN: 978-1-56367-783-0.

Check www.Amazon.com or other places listed on my blog's link page.

Course Assessment

A student's competency will be based on multiple measures of performance. Assessment will measure the development of independent critical thinking and demonstrable skill. Quality is measured using industry patternmaking standards. Final course evaluation of the student's ability will be based on, but not limited to, the following criteria:

1. Pad out a commercial dress form that conforms to the fit model's body.
2. Use of draping vocabulary, basic patternmaking tools and draping techniques.
3. Using croqui silhouettes to draw a draped garment that flatters the body proportions of the fit model.
4. Confirm competence through their graded completed project(s) and other course requirements.

5. Draping a garment(s) and converting the drape into an industry standard pattern.
6. Completion of a final draped garment(s) project using appropriate broadcloth fabric and findings that represents the croqui image desired and showcases draping skill.
7. Listing soft skill applications in a workplace environment.
8. Recognizing skills that are transferable to entry level positions in the fashion job market including: research, communication, soft skills, and patternmaking services. Identifying employment, career and venture possibilities.
9. Student **must** attend 80% of all class hours per course. Missing more than 20% of the class hours will affect their grade.

(Total: Draping on Body Doubles Class hours: 54 x 80% = 43 Hours)

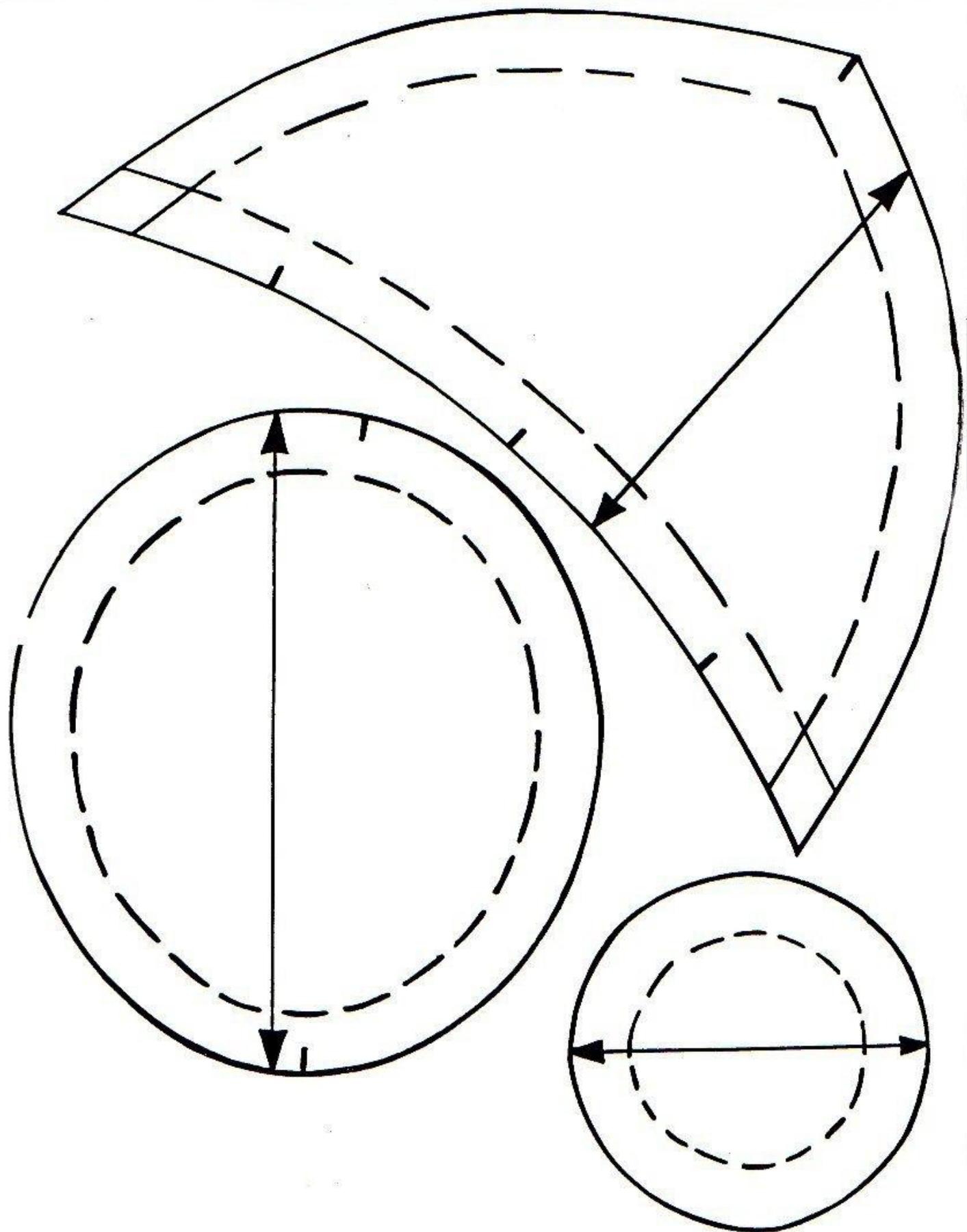
Future Classes and Events: Sew Pro's and Capstone Event 2019

Sew Pro's Field Trip to the LA garment District and M & L Fabrics. \$50 - 60. Call Clairemont Sew Pro's for details: 1-858-279-2500. **Date: April ??, 2019**

There will be a Capstone Event on June 6, 2019. When I know more, I will let you know. You will be ready for this event with a wonderful shirt and Pant outfit.

NOTE: THE FOLLOWING SLEEVE PATTERNS ARE THE CORRECT SHAPES.....YOU MAY WANT/NEED TO ENLARGE THE PATTERNS ON A PHOTOCOPIER.....

For one right arm you need: 2 triangle pieces, 1 oval piece, and one small circular piece.



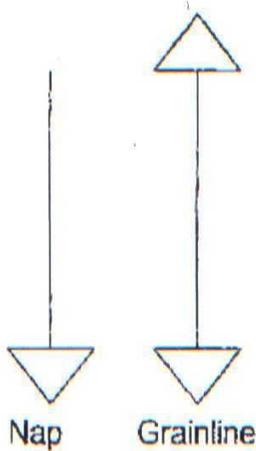
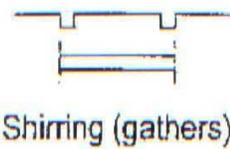
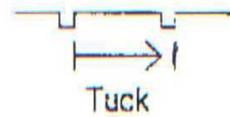
KATHLEEN FASANELLA'S Common Pattern Markings

Pattern piece ID

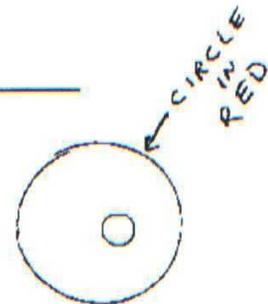
(Style Number)	
(Piece Name)	
(Qty)	(Size)

Asymmetrical Piece ID Example:

L (left side)
(Style Number)
LEFT & (piece name)
Cut ONE (Size)
R.S.U. (Right Side Up)



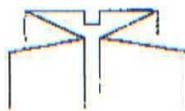
Match Stripe (cross grain)



Punch, drilled



Box pleat



Box pleat



Dart (sewn 1/2" beyond hole)



DISTANCE BETWEEN

$X \sim Y$

INTERPRETING THE CIRCLE/CASCADE RADIUS CHART

The chart indicates the radius needed to develop a circle or part of a circle. It is easy to use and eliminates the need for complex mathematical formulas for developing patterns for circular-type skirts, cascades and flounces. One need know only the distance to be covered by the inside edge of the circle.

Column 1 represents the distance to be covered in whole numbers (inches). For measurements in between whole numbers, use Column 1 as follows:

- 25½ inches or less, use 25 inches.
- Over 25½ inches, use 26 inches.

These measurements are close enough for test fitting.

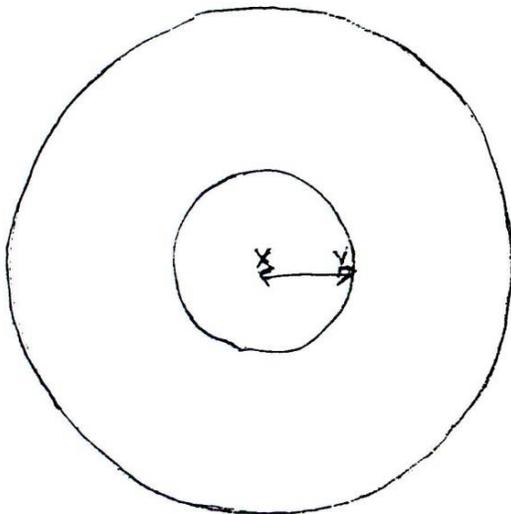
Columns 2, 3, 4, and 5 represent the radius for circles or part of a circle covering the distance given in Column 1.

The symbols - and + represent ⅛ inch added to or subtracted from the number to which it is associated.

To include seam allowance for the inside circle subtract ¼, or ½ inch (depends on required seam) from the radius measurement. (The draft will mention this.)

CIRCLE/CASCADE RADIUS CHART

Column 1 Distance covered	Column 2 1/4 circle	Column 3 1/2 circle	Column 4 3/4 circle	Column 5 Full circle
1	0 5/8	0 1/4+	0 1/4-	0 1/8+
2	1 1/4+	0 5/8	0 1/2-	0 3/8-
3	1 7/8+	0 7/8+	0 5/8	0 1/2-
4	2 1/2+	1 1/4+	0 7/8-	0 5/8
5	3 1/8+	1 5/8-	1 1/8-	0 3/4+
6	3 3/4+	1 7/8+	1 1/4+	0 7/8+
7	4 1/2-	2 1/4-	1 1/2	1 1/8
8	5 1/8-	2 1/2+	1 5/8+	1 1/4+
9	5 3/4-	2 7/8	1 7/8+	1 3/8+
10	6 3/8	3 1/8+	2 1/8	1 5/8-
11	7	3 1/2	2 3/8-	1 3/4
12	7 5/8	3 3/4+	2 1/2+	1 7/8+
13	8 1/4+	4 1/8	2 3/4	2 1/8-
14	8 7/8+	4 1/2-	2 7/8+	2 1/4-
15	9 1/2+	4 3/4+	3 1/8+	2 3/8
16	10 1/8+	5 1/8-	3 3/8+	2 1/2+
17	10 3/4+	5 3/8+	3 5/8-	2 3/4-
18	11 1/2-	5 3/4+	3 3/4+	2 7/8
19	12 1/8-	6 1/8	4 1/8-	3
20	12 3/4-	6 3/8	4 1/4	3 1/8+
21	13 3/8	6 5/8+	4 1/2-	3 3/8-
22	14	7	4 5/8+	3 1/2
23	14 5/8+	7 1/4+	4 7/8	3 5/8+
24	15 1/4+	7 5/8	5 1/8-	3 3/4+
25	15 7/8+	7 7/8+	5 1/4+	3 7/8+
26	16 1/2+	8 1/4+	5 1/2+	4 1/8
27	17 1/8+	8 5/8-	5 3/4-	4 3/8-
28	17 3/4+	8 7/8+	5 7/8+	4 1/2-
29	18 1/2-	9 1/4-	6 1/8+	4 5/8
30	19 1/8-	9 1/2+	6 3/8	4 3/4+
31	19 3/4	9 7/8	6 5/8-	4 7/8+
32	20 3/8	10 7/8+	6 3/4+	5 1/8-
33	21	10 1/2	7	5 1/4
34	21 5/8+	10 3/4+	7 1/4-	5 3/8+
35	22 1/4+	11 1/8	7 1/2-	5 1/2+
36	22 7/8+	11 1/2-	7 5/8	5 3/4-
37	23 1/2+	11 3/4+	7 7/8-	5 7/8
38	24 1/8+	12 1/8-	8 1/8-	6 1/8-
39	24 7/8-	12 3/8+	8 1/4+	6 1/4-
40	25 1/2-	12 3/4-	8 1/2	6 3/8
41	26 1/8-	13 1/8-	8 5/8+	6 1/2+
42	26 3/4	13 3/8	8 7/8+	6 5/8+
43	27 3/8	13 5/8+	9 1/8	6 7/8-
44	28	14	9 3/8+	7
45	28 5/8+	14 1/4+	9 1/2+	7 1/8+
46	29 1/4+	14 5/8+	9 3/4	7 3/8-
47	29 7/8+	14 7/8+	9 7/8+	7 1/2-
48	30 1/2+	15 1/4+	10 1/8+	7 5/8
49	31 1/8+	15 5/8-	10 3/8+	7 3/4+
50	31 7/8-	15 7/8+	10 5/8	7 7/8+



Fractions to Decimals

You need to know this, for your computer generated pattern.

$$1/8 \text{ inch} = .125$$

$$1/4 \text{ inch} = .25$$

$$3/8 \text{ inch} = .375$$

$$1/2 \text{ inch} = .5$$

$$5/8 \text{ inch} = .625$$

$$3/4 \text{ inch} = .75$$

$$7/8 \text{ inch} = .875$$

$$1 \text{ inch} = 1.0$$

Good to Know: $1/16 \text{ inch} = .0625$

$1/32 \text{ inch} = .03125$

$1/64 \text{ inch} = .015625$

Patternmaker Control + F Key	Snap Off F1	Snap to Grid F2	Snap to End Point F3	Snap to Nearest F4	Snap to Ortho F5	Snap to Mid Point F6	Snap to Intersect F7	Snap to Offset F8	Snap to Meas. Dist. F9	Drag & Drop F10	Open Layers Box F11	Yardage Grid On/Off F12
Pg Up Zoom Out Pg Down Zoom In Home Z to Mouse End Zoom all ← ↓ ↑ → Pan	Zoom Out F1	Zoom In F2	Zoom to Cursor F3	Grid Points On/Off F4	Vertice Points On/Off F5	Select Snap F6	Grading Arrows - 3 Modes F7	Digitizer Mouse On/Off F8	Pan to Mouse F9	F10	F11	F12