

Unit 5 FILM PROCESSING

Name:	Т.А.:
Course:	Section:

Unit Description:

In this unit students will learn the necessary steps required to process their own roll of 35mm film.

Unit Expectations:

- To load exposed film on a developing reel and load into a developing tank.

- To know the photographic chemicals necessary for developing a black and white film.

- To measure and mix chemicals in the correct proportions for each step of the film development process.

- To understand the reaction created by each chemical used on the film during the development process.

- To store chemicals correctly. All chemical containers should be carefully labelled with chemical type, name and preparation date.

- To select the correct temperature for the development procedure.

- To select the correct time for each step in the developing process.

- To develop a roll of exposed film.

 To store negatives properly to prevent damage.



Unit Activities:

Attend film processing seminar Process Roll of Film Questions Journal N/A Level Assessment 20 Marks 10 Marks Now that you have shot your first roll of film, you are now going to learn how to develop this film so that you can eventually print all of your own images. You will be required to attend a film processing seminar to learn about the very detailed, step-by-step process. Please be sure to sign up for one of the many seminars offered. If you miss a seminar, please see your teacher immediately to be sure to learn the process.

Activity One:

Attend the film processing seminar. Be sure to bring your exposed roll of film with you.

Activity Two:

Answer the following questions.

Once you have attended the film processing seminar answer the following questions:

1) Outline the step by step process you go through to prepare your film to be processed. From the time you sign out the film processing kit to how you get the film into the developing tank. (6 marks)

2) When you are ready to process your film what should you do before you start the chemical process? (2 marks)

3) List and define (explain their job) each chemical that is required to process your film. (6 marks)

4) What is the main purpose for agitating the tank during the film processing session? (2 marks)

5) Why is it important to wash your film? (2 marks)

6) Why is it important ot thoroughly wash and dry the film processing kit? (2 marks)

Activity Three:

Journal

Write a one page journal discussing your experiences of film processing. Be sure to discuss your triumphs and errors. You must also include in this journal a critique of your film exposures. Read the attached article to understand what makes a good or bad negative, then choose your best and worst exposure and explain why. Be sure to also use "film Speak" in your writing, view the attached article for further explanation.

Talking About Negatives: Film Speak 101

Density:

The amount of silver deposited as the result of exposure and development of the light sensitive emulsion of the film.

Dense:

(Too Dense) A negative or an area of the negative is which a large amount of silver has been deposited. A dense negative transmits

relatively little light. Excessive density (too dense) results from overexposure of the negative. The opposite: Thin.

Normal:

Describes a negative with a wide density range resulting from correct exposure and proper development. There will be detail in the shadows and some density in the highlight areas.

Thin:

(Too Thin) A negative or an area of a negative where relatively little silver has been deposited. A thin negative transmits a large amount of light. A (too) thin negative results from underexposure. The opposite: Dense.

Fog:

An overall density (a gray cast) in the image caused by either unintentional exposure to light (i.e. removing the lid from developing tank at the wrong time, light leaks, etc.) or unwanted chemical activity.

Highlights:

Areas representing the bright parts of a scene. There is a large amount of silver deposited, creating dense areas on the negative. Also referred to as high density or "whites".

Shadows:

Areas representing the least illuminated parts of a scene. There is a small amount of silver deposited, creating thin, transparent areas on the negative.

Contrast:

The difference in density or apparent brightness between tonal areas of a negative.

Contrasty:

(High Contrast) Describes a negative with extreme differences in density. A high contrast negative has dense highlights and thin shadows and not enough middle tones.

Flat:

(Low Contrast) Describes a negative with minimal differences in density. A low contrast negative has primarily middle tones with no clearly defined highlights and shadows.

ISO (ASA):

A numerical rating system that describes the sensitivity of a film to light. Also referred to as film speed. ISO/ ASA is denoted by a number. (ISO: International Standards Organization, ASA: American Standards Association).



Film Processing / Darkroom Notes

During the seminar you will be given lots of information - all of which you will need to remember for future darkroom adventures.

Film Journal	

Exposure and Development: Under, Normal, Over

A correctly exposed and properly developed negative will make your next step —printing—much easier. You are likely to produce a printable negative if you simply follow the manufacturer's standard recommendations for exposure (film speed) and development (time and temperature). But, after you have a grasp of the basic techniques, you may want to adjust your exposure or development. If you are just beginning in photography, you can come back to this material after you have had some experience printing.

To evaluate a negative, you need to look at its density and contrast. Density is the amount of silver built up in the negative overall or in a particular part of the negative. Thin negatives have low density overall. The thinnest parts of any negative correspond to the darkest areas in the original scene; the film received little light from those parts of the scene and developed little silver density there. Dense negatives have a heavy buildup of silver overall. The densest parts of any negative correspond to the lightest areas in the original scene; the film received a large amount of light from those areas and developed a heavy silver density there.

Contrast is the difference in density between the thinner parts of the negative (such as shadow areas) and the denser ones (bright highlights). A contrasty or high-contrast negative has a great deal of difference between these areas: the highlights are very dense and the shadows very thin. If you want a normal-looking print from a high-contrast negative, you have to print it on a lowcontrast (#1 or lower) paper. A flat or low-contrast negative, on the other hand, has highlights that are not very much denser than the shadows. To make a normal print from a lowcontrast negative, you must print it on a high-contrast (#3 or higher) paper. (The

relation between negative contrast and printing paper contrast is shown on page 175.)

The amount of exposure and development affects the negative, but in different ways, as expressed in the old photographic rule of thumb: Expose for the shadows, develop for the highlights. Changing the development time has little effect on shadow areas, but it has a strong effect on highlight areas. The longer the development at a given temperature, the denser the highlights become; the contrast also increases due to the greater difference between the density of the highlights and that of the shadows. The reverse happens if you decrease development time: the less the difference between highlights and shadows, and the flatter the negative.

Changing the exposure affects both highlight and shadow areas: the greater the exposure, the denser they both will be. But exposure is particularly important to shadow areas because increasing the development time does not significantly increase the density of shadow areas. They must receive adequate exposure if you don't want them to be so dark that they are without detail in the print.

The practical application of these relationships lets you alter exposure or development if you have persistent difficulty printing your negatives. The illustrations opposite show a negative with good density and contrast (center) plus negatives that are thin, dense, flat, and contrasty—and what to do if many of your negatives look that way. You may have to adjust a manufacturer's standard recommendations to suit your own combination of film, camera, darkroom equipment, and so on.

You can also adjust exposure and development for individual scenes. A high-contrast scene (for example, a sunlit street scene in which you want to see people in both lit and shaded areas) can easily have a nine-stop or greater range between shadows and highlights -too much for details to show in both light and dark areas. In such a situation, you can give enough exposure to maintain details in the shadows, then decrease the development to about threefourths to two-thirds the normal time to keep highlights from being overly dense. A low-contrast scene (such as one outdoors on a heavily overcast day) may have only a three-stop or less range. If you want more contrast than this, you can decrease the exposure about a stop and increase the development to one and one-half to two times normal. (Kodak T-Max films respond more rapidly to changes in development time than other films do, so smaller time adjustments are needed to produce comparable changes.) If you want to maintain the existing high or low contrast in a scene (for example, if you want to keep the flat gray look of a landscape on a foggy day), use normal exposure and development.

Changing the development for individual scenes is easiest with a view camera, which accepts single sheets of film. With roll film you have to develop the entire roll in the same way. Also, increasing development time with small-format roll film may increase the grain more than you want, which is not a problem with larger-format sheet film.

You can adjust contrast during printing by using a higher or lower contrast grade of paper, but also adjusting the contrast of the original negative gives you even more control over the final results. See Chapter 13, Zone System, for more about controlling density and contrast by adjusting exposure and development.



Thin. Little detail in shadow areas, somewhat low contrast overall, printing times very short. If negatives are often thin, increase exposure by setting camera to a lower film speed. Divide film speed by two to increase exposure one stop.



Normal density and contrast. Good separation of tones in highlight, midtones, and shadows (with a scene of normal contrast). Prints on normalcontrast paper. Normal grain for film.



Flat. Not enough separation between highlights and shadows, needs high-contrast paper for normal print. If negatives are often flat, increase film development: tru developing for one and one-half



Contrasty. Too much difference between highlights and shadows, needs low-contrast paper for normal print, grain increased. If negatives are often contrasty, decrease film development; try



Dense. Highlights too dense, more than adequate density in shadows, printing times very long, grain increased. If negatives are often dense, decrease exposure by setting camera to a higher film speed. Multiply film speed by two to decrease exposure one stop.

Agitation	Agitate continuously for the full 30 seconds. Dump water when finished into the sink.	Agitate for the first 30 seconds then agitate for 5 seconds every 30 seconds. Continue until the time has ended. Tap tank after every agitation. Pour chemical back into the container.	Agitate continuously for the full 30 seconds. Pour chemical back into the container.	Agitate for the first minute, then agitate for 10 seconds every minute untl the time has ended. Tap tank after every agitation. Pour chemical back into the container.	Wash film for 15 to 20 minutes under continously flowing water. Hang to dry in film dryer when washing is complete.
Time	30 Seconds	Time varies dependant on film type and chemical type	30 Seconds	6 Minutes	15 to 20 Minutes
Step	Water	Developer	Stop	Fix	Wash

Film Processing