Phonetics vs. Phonology:

Phonology begins with the construction of a representation more abstract than phonetic transcription; for phonology, we leave out the predictable properties.

Phonemic Analysis. There are two aspects to what we'll be doing:
1) actually doing phonemic analyses on real data.
2) looking at different theories of Phonemics.

Ferdinand de Saussure  *Course in General Linguistics (lectures 1906-1911)*
For Saussure, language was a sign system, in which each sign consisted of a *signifiant* (“sound-image”) and a *signifié* (“concept”). The *signifiant* functions to distinguish signs from other signs in the system, so the difference between sounds is their important characteristic, not their individual manifestation.

Characterizes sign in negative terms, as not equal to other units in a system, leaving open:
1) the nature of the relationship between the role of the sign in the system of *langue* and phonetic reality of how the sound is realized in *parole*.
2) the question of how to represent this unit
3) what kind of entity a phoneme is

There have been various approaches to answering these questions:

<table>
<thead>
<tr>
<th>Prague School</th>
<th>American Structuralists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trubetskoï</td>
<td>Jakobson</td>
</tr>
<tr>
<td></td>
<td>Pike</td>
</tr>
<tr>
<td></td>
<td>Sapir</td>
</tr>
<tr>
<td></td>
<td>Bloomfield</td>
</tr>
<tr>
<td></td>
<td>Taxonomic phonemicists</td>
</tr>
</tbody>
</table>

(Optional Reading: Anderson's chapter 11 becomes relevant here)

For now, a Phoneme is the marker of differences between morphemes/words: changing one phoneme to another phoneme gives you a different word, or no word at all.

We start with the analytical approach: a phoneme is a unit in a phonological analysis of a language. From an analytical point of view, not all the actual phonetic sounds have the same value in the language or the same linguistic reality to a speaker.

<table>
<thead>
<tr>
<th>Phones</th>
<th>actual phonetic sounds used in a language (concrete, phonetic)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phonemes</td>
<td>distinct units of the sound system (abstract, phonological)</td>
</tr>
<tr>
<td>Allophones</td>
<td>various realizations of the phonemes, not used to convey distinctions among words. (concrete, abstract)</td>
</tr>
</tbody>
</table>

Phonemic analysis is the way of determining the phonemes of a language from phonetic data, and you probably learned how to do it following Pike 1947, an American Structuralist).
Steps to find phonemes:
1) To find distinctive units, look for **minimal pairs** like tie/die, kill/till in English. Sounds are classified as separate phonemes if they are responsible for a difference in meaning in a minimal pair. Also known as:
   **CONTRAST IN IDENTICAL ENVIRONMENTS**

2) If you can't find exactly the same environment for showing a contrast between two words, you have to settle for a less rigorous test. If two sounds occur in phonetically similar contexts, and the context probably isn't causing the difference between those two sounds, then you've got phonemes that:
   **CONTRAST IN ANALOGOUS ENVIRONMENTS**

Steps to find allophones (members of a single phoneme):
1) For each **suspicious pair** (=pairs/groups of sounds that bear a significant phonetic resemblance to each other), examine the contexts in which each sound occurs. If the two sounds never appear in the same contexts, we have two sounds in:
   **COMPLEMENTARY DISTRIBUTION**

2) If similar sounds appear in the same environment but do not make any difference in meaning, the sounds are in: **FREE VARIATION**

So, to summarize these analytical procedures:
1) look for contrast (in identical or analogous environments)
2) if there is no contrast, look for complementary distribution or free variation
3) group phones into sets of allophones belonging to phonemes

**Alternations**: the realization of an abstract sound (phoneme, lexical entry) is different in different contexts (phonetic/phonological/morpho-phonological).

**Writing Rules for alternations**
Phonological rules are usually written in the following form: \[ A \rightarrow B /C \_\_ D \]
where: \( A, B, C, D \) are sets of segments (later, distinctive features) except that:
- A or B (but not both) may be the null set \( \emptyset \)
- C or D (or both) may be absent or C or D (or both) may contain or consist of boundary symbols, such as \# or +
- A consists of a single set of features (i.e., A is a single segment)

Some terminology: A is the **affected segment**, B is the **change**, and C and D constitute the **context or environment**. CAD is the **structural description**, and CBD is the **structural change**.

Some symbols:
- \# = word boundary
- + = morpheme boundary
- \( \emptyset = \) the null set, so \( \emptyset \rightarrow B /C \_\_ D \) means insert B between C and D
- \( A \rightarrow \emptyset/ C \_\_ D \) means delete A between C and D