Material to be covered for Synchronous Machines - EE 341

There will be material from Chapters 4, 5 & 6 which will be covered for this topic. I will tend to cover material for both generator and motor action together rather than separately; the author has one chapter on generators (5) and one on motors (6); Chapter 4 is an introductory chapter that covers both AC and DC machines.

There are 7 major topics related to synchronous machines; they are listed below with the various sections in the chapters that pertain to each.

1. Physical construction: Chap. 4: 2, 3, 6 ; Chap. 5: 1

2. Magnetic flux distribution: Chap. 4: 1, 2, 3

3. Induced voltage: Chap. 4: 1, 4 ; Chap. 5: 2, 3

4. Induced torque: Chap. 4: 1, 5 ; Chap. 5: 6 ; Chap. 6: 2

5. Equivalent circuit: Chap. 5: 4, 11 (briefly) ; Chap. 6: 1, 5

6. Analysis: Chap. 4: 7, 8 ; Chap. 5: 5, 7, 8 ; Chap. 6: 2, 4 (Fig. 6-20 IMPORTANT!!)

7. "Starting:" Chap. 5: 9 (briefly) ; Chap. 6: 3

Sections not covered: Chap. 5: 10