Consciousness - awareness of internal and external stimuli
Sleep - is a state make by relatively low levels of physical activity and reduced sensory awareness
Wakefulness - high levels of sensory awareness, thought, and behavior

Circadian Rhythm
- A circadian rhythm is a biological rhythm that takes place over a period of about 24 hours
- Melatonin - a hormone secreted by the endocrine gland that serves as an important regulator of the sleep wake cycle

Morningness - Eveningness
- Individuals with shorter circadian rhythms hit peak body temperature and alertness earlier in the day and get sleepy earlier than individuals with longer rhythms
- Individuals with shorter rhythms tend to be morning people, and individuals with longer rhythms tend to be evening people.

- Sleep Debt - result of insufficient sleep on a chronic basis

Why do people sleep? Adaptive Function (evolutionary hypotheses)
- Sleep is essential to restore resources that are expended during the day
- Sleep is an adaptive response to predatory risks, which increase in darkness
- Cognitive function - focuses on sleep's importance for cognitive function and memory formation
- Sleep deprivation results in disruptions in cognition and memory deficits (become more severe as the amount of sleep deprivation increase)

Brainwaves during sleep
- Beta - high in frequency but low in intensity (awake)
- Alpha - relatively low frequency, relatively high amplitude, synchronized (stage 1, NREM)
- Theta - low frequency, low amplitude (stage 2, sleep spindles; K -complexes)
- Delta - low frequency, high amplitude, synchronized (stage 3, NREM)
- (Rapid eye movement)

Stage one
- Transitional phase occurring between wakefulness and sleep
- Rates of respiration and heartbeat slow down
- Overall muscle tension and core body temperature decrease
- Alpha waves

Stage two
- The body goes into deep relaxation
- Theta waves
- Characterized by the appearance of both sleep spindles and K-complexes

Sleep spindles - rapid burst of high frequency brainwaves
K-complexes-very high amplitude pattern of brain activity

Stage 3 & 4
- Known as slow-wave sleep
- Delta waves
- Respiration and heart rate slow down further
- Greater muscle relaxation

Rapid eye movement (REM)
- Paralysis of voluntary muscles
- Dreams
- Brain waves are similar to those seen during wakefulness

Substance use disorders - it is a compulsive pattern of drug use despite negative consequences
- Involves physical and psychological dependence

Physiological dependence - involves changes in normal bodily functions and withdrawal upon cessation of use
Psychological dependence - emotional need for the drug

Drug categories
- Agonist - facilitates the activity of a neurotransmitter system
- Antagonists - impede neurotransmitter activity

Depressants - drugs that suppress the central nervous system activity
- GABA agonists which have a quieting effect on the brain
- Depressants include: alcohol, barbiturates (anticonvulsant medication), benzodiazepines (anti-anxiety medication)
- Alcohol: increases reaction time and visual acuity, lowers levels of alertness, reduces behavioral control, can result in complete loss of consciousness

Opioids - serve as analgesics (decrease pain) through their effects on the endogenous opioid neurotransmitter system
- High addictive
- Opioids include: Heroine, Morphine, Methadone, Codeine

Stimulants - increase overall levels of neural activity
- Usually, dopamine agonists work by preventing the reuptake of dopamine
- Dopamine activity is associated with reward and craving, therefore these drugs can be highly addictive
- Stimulants include: caffeine, nicotine, cocaine, methamphetamine

Hallucinogens
- Can involve vivid hallucinations
- Variable with regards to the specific neurotransmitter systems they affect

- Hallucinogens include: Mescaline and LSD (serotonin agonists)
- PCP and Ketamine (NMDA glutamate receptor antagonists)
- Marijuana

Other state of consciousness
- Hypnosis is an extreme focus on the self that involves suggested changes of behavior and experience
- Clinicians may use relaxation and suggestion in an attempt to alter the thoughts and perceptions of a patient
- Unlike portrayals in the media, individuals undergoing hypnosis are in control of their own behaviors
- People vary in their ability to be hypnotized
- Uses include pain management, treatment of depression and anxiety, quitting smoking and weight loss
- Meditation is the act of focusing on a single target focusing on a single target such as breath or a repeated sound to increase awareness of the moment
- Meditation involves relaxed, yet focused, awareness
- Shows promise in stress management, sleep quality, pain management, and treatment of mood and anxiety disorder