Recent revolution in stem cell technology has opened a new door to personalized medicine. For the first time in human history, we are now able to take any type of cells from human body and reprogram them to many different cell types of interests. This unprecedented stem cell technology is dramatically changing the landscape of all disciplines of biomedicine, such as regenerative medicine, tissue engineering, reconstructive surgery, reproductive biology and more. This class will overview the recent development and current understanding of stem cell technology and its hope and hype.