



Technical college\Mosul	30 Weeks	No. of week hours		
Department: Medical Instrumentation Engineering		Th.	App.	Unit
		2	2	6
Fourth Year	Subject: Medical Laser systems.			

أهداف المادة: - دراسة توليد أنواع الليزر و أسلوب نقلها و استقبالها و كيفية استخدامها في الأجهزة الطبية .

Week	Syllabus
1 st , 2 nd	Laser generation .
3 rd . 4 th	Types of laser .
5 th , 6 th , 7 th	Light and light propagation in glass fiber .
8 th , 9 th , 10 th	Optical fiber waveguide, bandwidth distance product, dispersion and pulse spreading, maximum allowable data rate, fiber power losses .
11 th , 12 th	Transmitter devices and circuits (communication LEDs).
13 th , 14 th	Injection lasers, modulators .
15 th , 16 th	Receiver devices and circuits photo diode light detector .
17 th	PIN photo diodes , photo multiplier .
18 th , 19 th	Avalanche photo diode (APD) , receiver circuits .
20 th , 21 st	Transmission technology , fiber technology , connectors .
22 nd , 23 rd	Splices , couplers .
24 th , 25 th , 26 th , 27 th	Types of medical applications of laser .
28 th , 29 th , 30 th	Laser hazards , the standard level for a safe working environment , lab–safety .