Modern fluoroscopy imag ing equipment is de signed to simultaneously monitor x-ray beam attenuation, detector exposure rate, contrast-to-noise ratio, x-ray gener ator parameters, and x-ray tube loading. Knowledge of sy stem des ign is essential to understandingequipm entope ration; a ndunders tanding equipmentope rationca nfacilitate optimization of per formance. Under pre-programmed control, fluoroscopy systems automatically make a djustments to the parameters c ontrolling x-ray production, bea m filtration, detector sign al output, digital im age processing, and image presentation. The resultisthatreductionofpa tientd osedoesnotnece ssarily requirealoss of imagequa lity.

Optimizing performance be gins with the determination of which system parameters a redynamically controlled, and the identification of the trigger points for changes in these parameters. Secondly, an understanding of how system parameters affect each other, affectimag equality, and a ffect patient dose can lead to be tterchoices inhow the system should be setup for specific applications. This presentation will systematically describe the functions of them ajor system components including automatic exposure attended to the role of the function, and other factors that affect the ability of the imaging system to deliver optimum diagnostic images atm oderate patient dose.

EducationalObject ives:

- 1. Provideanunder standingof modern fluoroscopicimagingsystemcomponent designandfunct ionality
- 2. Describespecificwaysinwhiche quipmentsettings canenhanceorde tractf rom optimumperformanc e.