	CONSUMER ELECTRONICS - 601				
Code	**Course Title**	**Paper code**	**Topics**	**SUB Topics**	**Links**
601	**CONSUMER ELECTRONICS**	**6213 UNIT 1**	**Audio Technology**	Principle & working of microphone	https://www.youtube.com/watch?v=QdZOe8e3gh4
				Types of microphone and their application	https://www.youtube.com/watch?v=MACpIFBlGpg&list=PLLwtOZNd9SgN9BMWQR9uavNnVV_5uij4J
				Principle & working of speakers	http://www.rgcetpdy.ac.in/Notes/ECE/III%20YEAR/EC%20E52-%20CE/Unit%201.pdf
				types of speakers: PMMC	http://www.rgcetpdy.ac.in/Notes/ECE/III%20YEAR/EC%20E52-%20CE/Unit%201.pdf
				Frequency response of speaker	http://www.rgcetpdy.ac.in/Notes/ECE/III%20YEAR/EC%20E52-%20CE/Unit%201.pdf
				Audio amplifier	https://www.youtube.com/watch?v=uOy2Zr_kKIM&list=PL4CoDGOIqyYlMRXkybBBC8PcMb_w3XFC0&index=686
				application of audio amplifiers: PA system	https://www.youtube.com/watch?v=td2OReqNOds
			Broad Casting Receiver		
				AM Receiver: Explain- - TRF	https://www.youtube.com/watch?v=ysbBUpMaDEM https://www.youtube.com/watch?v=XqjWq7kuBHI
				super heterodyne	https://www.youtube.com/watch?v=qAteihkXnPA
				Double heterodyne	https://www.electronics-notes.com/articles/radio/superheterodyne-receiver/double-triple-dual-multiple-conversion.php
				FM Receiver: Ratio Detector	https://www.youtube.com/watch?v=dGH4coyKaLk
				Foster seeley phase discriminator	https://www.youtube.com/watch?v=fPZ2hdxdIwU
				FM Channels	https://www.youtube.com/watch?v=A-JbmMDpZVs
				Qualities of receivers	https://www.youtube.com/watch?v=ysbBUpMaDEM

				TV Technology		
					Principles of Television:	https://www.britannica.com/technology/television-technology/Principles-of-television-systems, https://www.youtube.com/watch?v=9ZNO1aTIzrw
					TV standards	https://computerhindinotes.com/broadcast-video-standards/
					Scanning	https://www.youtube.com/watch?v=BJVmv2yQezw
					Video Bandwidth	https://www.youtube.com/watch?v=9CqQFhmyYhc
					Modulation techniques	https://www.youtube.com/watch?v=WmPRMFqT8Uw
					Channel allocation	https://www.youtube.com/watch?v=DTILFZhNnqk
					Composite Video signal	https://www.youtube.com/watch?v=M3Ii9xkfnF4
					TV Camera – Principle & working of Vidicon TV Camera.	https://www.youtube.com/watch?v=rWHr_1UscYY https://www.youtube.com/watch?v=aFWwiP9phz8
					TV Receiver – - block diagram and working of B&W receiver and PAL Receiver	https://www.youtube.com/watch?v=RtFyKdYtamI https://www.youtube.com/watch?v=VPN9I9afZsI https://www.youtube.com/watch?v=GVJxbYktvjk
					Display Technologies: - CRT Monitor	https://www.youtube.com/watch?v=P2_fPhAjcNE https://www.youtube.com/watch?v=S3yPVUxUMgI
					LCD Monitor	https://www.youtube.com/watch?v=qE-4vmchq9c
					PLASMA monitor	https://www.youtube.com/watch?v=18Fd5f8oJbY
				Media Players		
					Block Diagram of Players: - Audio CD Players	https://oseven.in/files/58c2c9d809c67.pdf https://www.youtube.com/watch?v=a6xs7D5Zcuc
					Video CD Players	https://oseven.in/files/58c2c9d809c67.pdf https://www.youtube.com/watch?v=a73b4jO0CPU
					DVD Players	https://oseven.in/files/58c2c9d809c67.pdf
					Introduction to Blue	https://oseven.in/files/58c2c9d809c67.pdf

					Ray disc player, HD DVD	https://www.youtube.com/watch?v=NcJt1GNTqvM
				Multimedia		
					Introduction to multimedia,	https://www.youtube.com/watch?v=GxY7uIDUwXQ https://www.youtube.com/watch?v=BrUpUt0G--A
					Different audio and video formats related to multimedia	https://www.youtube.com/watch?v=GxY7uIDUwXQ https://www.youtube.com/watch?v=L5kIgoNK25o https://www.youtube.com/watch?v=NPQW-UwR6vQ
					MPEG1, MPEG2, MPEG3, MPEG4,	https://www.youtube.com/watch?v=F0ZinF-gTrY
					Multimedia editing tools- Movie Maker, Nero wave Editor.	https://www.youtube.com/watch?v=bpLDiTixjKE http://ftp6.nero.com/user_guides/nero6/waveeditor/NeroWaveEditor_Eng.pdf
					Application of multimedia in education, entertainment, advertisement, research.	https://www.youtube.com/watch?v=TYMwB5wkzkI
					PRJECTORS : - DLP Projector	https://hindime.net/projector-kya-hai-hindi/
					LCD Projector	https://hindime.net/projector-kya-hai-hindi/
					LED Projector	https://hindime.net/projector-kya-hai-hindi/
				Security & Safety System:		
					Burglar's alarm	https://ipvm.com/reports/burglar-alarm-systems
					Video door phone	https://en.wikipedia.org/wiki/Video_door-phone
					CCTV	https://www.youtube.com/watch?v=8OBGwexauzQ
					Electronic combination locks	https://www.vssut.ac.in/lecture_notes/lecture1423183198.pdf

ADVANCED COMMUNICATION - 602					
Code	Course Title	Paper code	Topics	SUB Topics	Links
602	ADVANCED COMMUNICATION	6214	Optical fiber communication		
				Light propagation through optical fiber:	https://www.youtube.com/watch?v=diRAX4wLV4g https://www.youtube.com/watch?v=G-UyeFDsXlI
				Attenuation in optical fiber	https://www.youtube.com/watch?v=diRAX4wLV4g
				Dispersion:	https://www.youtube.com/watch?v=diRAX4wLV4g
				Types of fibers:	https://www.youtube.com/watch?v=diRAX4wLV4g
				Structure of Fiber optics cables	https://www.youtube.com/watch?v=diRAX4wLV4g
				Optical Communication system: block diagram	https://www.youtube.com/watch?v=diRAX4wLV4g https://www.youtube.com/watch?v=q6_q2IBm93o
				Light source: LED and Laser Diode	https://www.youtube.com/watch?v=eWu6yWhMYeE
				Detectors: PIN photodiode and Avalanche photodiode	https://www.youtube.com/watch?v=Ig1AKT8hp3E
				Specification criteria in selection of transmitter & receiver	https://www.youtube.com/watch?v=diRAX4wLV4g https://www.youtube.com/watch?v=FE98-ObyeIA
				Tool for Installation and maintenance: Application of: Optical power meter, OTDR, Fusion Splicing Machine	https://www.youtube.com/watch?v=RUHMotQTRz8 https://www.youtube.com/watch?v=sskhg3y3rr0
			Cellular		

				Communication	The Cellular Concept	https://www.youtube.com/watch?v=wqj2op3pFag
					Frequency bands and cellular coverage	https://www.youtube.com/watch?v=45ih0wHytxs https://www.youtube.com/watch?v=45rY5tNZ_Gc
					Geometry of a cell: Cell size and Number of possible users	https://www.youtube.com/watch?v=tt1-Ohe9QQU
					Frequency reuse and hand-off	https://www.youtube.com/watch?v=CJSztdNjZ_M
					Cellular system implementation	https://www.youtube.com/watch?v=KGOdiSSIVd0
					Access technology-FDMA, TDMA & CDMA, comparison	https://www.youtube.com/watch?v=UAKok0wg1p8
					GSM Services- speech, group call and related services, general packet radio service (GPRS), short message services (SMS)	https://www.youtube.com/watch?v=cunY_Izkg2c https://www.youtube.com/watch?v=21I3PK0Ps4U https://www.youtube.com/watch?v=4GE7AFzKz2g
					CDMA based digital cellular system, spread spectrum modulation, frequency hopping	https://www.youtube.com/watch?v=omEJygDEizU
					Features of Third generation cellular service	https://www.youtube.com/watch?v=WMeC_JfiHfM

				Satellite Communication		
					advantages and disadvantages of Satellite system	https://www.youtube.com/watch?v=DEvpLCQ3i3Q
					Frequency bands, Uplink and Downlink frequencies	https://www.youtube.com/watch?v=RpcrrnoHJvk
					Satellite basics- Orbits, Altitude, footprint	https://www.youtube.com/watch?v=GpHMdjiX0c0
					Low orbit regional satellites, Geostationary satellite	https://www.youtube.com/watch?v=dW0I39uL4LU
					Satellite system link model- uplink, transponder, downlink, cross link	https://www.youtube.com/watch?v=xqiTZkoaJ5w
					Block diagram of Satellite Earth station	https://www.youtube.com/watch?v=DEvpLCQ3i3Q
					Block diagram of Satellite and communication transponder	https://www.youtube.com/watch?v=DEvpLCQ3i3Q https://www.tutorialspoint.com/satellite_communication/satellite_communication_transponders.htm
					Satellite multiple access- FDMA, TDMA & CDMA	https://www.youtube.com/watch?v=4F_613NKUo4
					TV channel reception via Satellite	https://www.youtube.com/watch?v=a-UI24Dp-No https://www.youtube.com/watch?v=yPFAho3tai8
					Global Positioning System (GPS) and GPS Navigation	https://www.youtube.com/watch?v=7PrOjvTsIOM

					basics	
					Direct to home (DTH) basics	https://www.circuitstoday.com/direct-to-home-dth-technology-%E2%80%93-working http://www.intelsat.com/wp-content/uploads/2016/03/Intelsat-DTH-5457-wp.pdf
				RADAR		
					Basic RADAR system and applications	https://www.youtube.com/watch?v=bXcY5Kjz8Hw https://www.youtube.com/watch?v=baAyZ8Nbxv4
					Frequencies and Powers used in RADAR	https://www.youtube.com/watch?v=-QSvS99jD3g https://www.youtube.com/watch?v=V1Z6vwRpJRg
					Definition of Range, pulse width, PRF, duty cycle	https://www.youtube.com/watch?v=bjOPaE3hmSE https://www.youtube.com/watch?v=-QSvS99jD3g
					RADAR Range equation and factors that affect Range	https://www.youtube.com/watch?v=PQIoIQH6TNU https://www.youtube.com/watch?v=bjOPaE3hmSE https://www.youtube.com/watch?v=yods7qyHU0s
					Scanning methods, Search and Track RADAR system	https://www.youtube.com/watch?v=8otb-KH9iLw https://www.youtube.com/watch?v=tAiBIV9MC3Q
					Display method: PPI	https://www.youtube.com/watch?v=pXkjVXWw50Q
					Basic pulsed RADAR system	https://www.youtube.com/watch?v=0rRnxTO3L9s
					MTI and CW Doppler RADAR	https://www.youtube.com/watch?v=Xwo1qdzwAgk
				Emerging Trends in Technology	Bluetooth Technology: - Introduction	https://www.youtube.com/watch?v=JAxCbTRsKsQ
					Bluetooth Technology	https://www.youtube.com/watch?v=Ow6N44G_pdY

				Standards - Services - applications	
				Introduction to IP TV	https://www.youtube.com/watch?v=u0X36XpZ-G8 https://www.youtube.com/watch?v=8r-gULVqYIE
				iPhone	
				Introduction to WAP, EDGE, HSPDA, OTA, VOIP	https://www.youtube.com/watch?v=ZEtram_B920 https://www.youtube.com/watch?v=DPcqnhtvYm8 https://www.youtube.com/watch?v=KqhaK2W7-aQ

PROGRAMMABLE LOGIC CONROLLERS - 612

Code	Course Title	Paper code	Topics	SUB Topics	Links
612	PROGRAMMABLE LOGIC CONROLLERS		Introduction to PLC-		
				What is PLC ,Technical Definition of a PLC	https://www.youtube.com/watch?v=g7ONCWmRy0w
				Advantage of PLC	https://www.youtube.com/watch?v=4QuNU2qf2NI
				Chronological Evolution of a PLC	https://www.youtube.com/watch?v=7NmomRthOYg
				Type of PLC	https://www.youtube.com/watch?v=7NmomRthOYg
				Block diagram PLC	https://www.youtube.com/watch?v=7NmomRthOYg
				PLC Hardware, Timers &Counters-	https://www.youtube.com/watch?v=oKEVdJLfvT0 https://www.youtube.com/watch?v=NwIhOsc7ei8
				Relays	https://www.youtube.com/watch?v=8IhSvv4RHNQ
				Ladder logic diagram	https://www.youtube.com/watch?v=kRH_k6QOhLU https://www.youtube.com/watch?v=pJDthQ80iDg
				PLC Connection	https://www.youtube.com/watch?v=g7ONCWmRy0w
				Electrical Wiring diagram	https://www.youtube.com/watch?v=mgs_FtT0vA4
				JIC Wiring	https://www.youtube.com/watch?v=rQBrkcCmcQQ

					Symbols	
					Latches,Timer	https://www.youtube.com/watch?v=GOzIlfV1iLE
					Classification of Timer	https://www.youtube.com/watch?v=Ksyj1RV-Afo
					PLC Counters	https://www.youtube.com/watch?v=oKEVdJLfvT0 https://www.youtube.com/watch?v=7fZvwykKqgQ
					Operation of PLC Counter	https://www.youtube.com/watch?v=oKEVdJLfvT0
					Counter Parameters	https://www.youtube.com/watch?v=vsy2qLTlgG4
				Advance Instruction & Programming Techniques		
					Introduction	https://www.youtube.com/watch?v=EYZ_A-Q3_pw
					Comparison Instruction	https://www.youtube.com/watch?v=81AdqdHKsSc
					Discussions on Comparison Instruction "EQUAL" ii. "NOTEQUAL" iii. "LESS THEN" iv. "LESS THEN OR EQUAL" "GRATER THEN" vi. "MASKED COMPARISION FOR EQUAL" vii. "LIMIT TEST"	https://www.youtube.com/watch?v=81AdqdHKsSc
					Mathematical Instruction	https://www.youtube.com/watch?v=81AdqdHKsSc https://www.youtube.com/watch?v=PwpjcUNRG0o
					Logical Instruction Data handling Instruction	https://www.youtube.com/watch?v=iLgQZUsL3Vw
				PLC Input-Output (I/O) Modules Power Supply		
					Introduction	https://www.youtube.com/watch?v=oAn__-vcvC4
					Classification of Input Output	https://www.youtube.com/watch?v=oAn__-vcvC4

					Modules	
					Input-Output System	https://www.youtube.com/watch?v=oAn__-vcvC4
					Sinking Sourcing	https://www.youtube.com/watch?v=oAn__-vcvC4
					Special Input Modules	https://www.youtube.com/watch?v=oAn__-vcvC4 https://www.youtube.com/watch?v=BB1L649XmE8
					RTD Input Module	https://www.youtube.com/watch?v=fmr6JQrwySM
					Stepper Motor Control Module	https://www.youtube.com/watch?v=tApZNJCf1JA
					Thermocouple Input Module	https://www.youtube.com/watch?v=lwtcj9KC-po
					Power Supply Configuring	https://www.youtube.com/watch?v=oAn__-vcvC4
					Power Line conditioner	https://www.youtube.com/watch?v=oAn__-vcvC4
					Reliability, Safety and Redundancy Filter	https://www.youtube.com/watch?v=9M5WWBSs0ac
				PLC Applications-		
					Distributed control system, (DCS	https://www.youtube.com/watch?v=2fXJ54N14BQ
					Industrial control systems, (ICS)	https://www.youtube.com/watch?v=Yp3lsZBkfkw
					Programmable automation controller, (PAC).	https://www.youtube.com/watch?v=zd8LKysZ-0c
					Industrial safety systems	https://www.youtube.com/watch?v=2fXJ54N14BQ
					SCADA	https://www.youtube.com/watch?v=Sas4nWR-N94
				Industrial Automation & Selection of Programmable Logic		
					Introduction	https://learneee.com/plc-programmable-logic-control-in-hindi-plc-working-and-connection-in-hindi-full-details-about-plc-in-hindi/
					Utility of automation	https://www.youtube.com/watch?v=Yp3lsZBkfkw

				Controllers	Example of some simple Automated Systems	https://www.youtube.com/watch?v=Yp3lsZBkfkw
					Selection of PLC	https://www.youtube.com/watch?v=hndHhboJnFg