Electronic Systems Technician/Fire-Life Safety Curriculum

San Diego Community College District in conjunction with San Diego Associated Builders and Contractors

CURRICULM ITEM		**SDCCD COURSE ID**	**COURSE TITLE**	**LEC/LAB HOURS**
Basic Safety				90 hrs per sem.
	Accidents: Causes and Results	CONS 70A	Introduction to Low Voltage Building Systems I	*
	What Causes	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Housekeeping	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Company Safety Policies	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Rules of Behavior	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Reporting injuries, accidents and near misses	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Evacuation procedures	CONS 70A	Introduction to Low Voltage Building Systems I	*
Construction Job Site Hazards		CONS 70A	Introduction to Low Voltage Building Systems I	*
	Welding	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Trenching and excavation	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Proximity work	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Pressurized and high temperature systems	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Confined spaces	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Motorized vehicles	CONS 70A	Introduction to Low Voltage Building Systems I	*
Working Safely with Job Hazards		CONS 70A	Introduction to Low Voltage Building Systems I	*
	Lockout and tagout	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Barriers and barricades	CONS 70A	Introduction to Low Voltage Building Systems I	*
Personal Protection Equipment		CONS 70A	Introduction to Low Voltage Building Systems I	*
	Personal protective equipment needs	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Personal protective equipment use and care	CONS 70A	Introduction to Low Voltage Building Systems I	*
Lifting		CONS 70A	Introduction to Low Voltage Building Systems I	*
Aerial Work		CONS 70A	Introduction to Low Voltage Building Systems I	*
	Ladders and Scaffolds	CONS 70A	Introduction to Low Voltage Building Systems I	*
Hazard Communications Standard (HAZ COM)		CONS 70A	Introduction to Low Voltage Building Systems I	*
	Material Safety Data Sheets (MSDS)	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Your responsibilities under HazCom	CONS 70A	Introduction to Low Voltage Building Systems I	*
Fire Safety		CONS 70A	Introduction to Low Voltage Building Systems I	*
	Fire prevention guidelines	CONS 70A	Introduction to Low Voltage Building Systems I	*
	How fires start	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Fire prevention	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Fire fighting	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Classes of fires	CONS 70A	Introduction to Low Voltage Building Systems I	*

* All classes total 90 hours per semester. Weekly hours include 2 hours lecture, 3 hours lab.

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CURRICULM ITEM		SDCCD COURSE ID	COURSE TITLE	LEC/LAB HOURS
Electrical Safety		CONS 70A	Introduction to Low Voltage Building Systems I	*
	Basic electrical safety guidelines	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Working near energized electrical equipment	CONS 70A	Introduction to Low Voltage Building Systems I	*
	If someone is shocked	CONS 70A	Introduction to Low Voltage Building Systems I	*
Introduction to Whole Numbers		CONS 70A	Introduction to Low Voltage Building Systems I	*
	Parts of a whole number	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Addition, subtraction, multiplication and division of whole numbers	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Using a calculator	CONS 70A	Introduction to Low Voltage Building Systems I	*
Introduction to Fractions and Measurement		CONS 70A	Introduction to Low Voltage Building Systems I	*
	Using the standard ruler	CONS 70A	Introduction to Low Voltage Building Systems I	*
	What are fractions	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Reducing improper fractions	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Changing the form of fractions	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Determing least common denominator	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Addition of fractions	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Addition of whole numbers, mixed numbers, and common fractions	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Subtraction of fractions	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Multiplication of fractions	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Division of fractions	CONS 70A	Introduction to Low Voltage Building Systems I	*
Working with Decimals and Percents		CONS 70A	Introduction to Low Voltage Building Systems I	*
	Decimal fractions	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Reading decimals	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Adding decimals	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Rounding-off decimals	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Subtracting decimals	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Multiplying decimals	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Dividing decimals	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Percent/decimal conversions	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Reducing common fractions to decimals	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Determining decimal/fractional equivalents	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Percentages and averages	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Square and square roots of whole numbers	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Basic equation operations	CONS 70A	Introduction to Low Voltage Building Systems I	*

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CURRICULM ITEM		SDCCD COURSE ID	COURSE TITLE	LEC/LAB HOURS
	Calculator operations	CONS 70A	Introduction to Low Voltage Building Systems I	*
The Metric System		CONS 70A	Introduction to Low Voltage Building Systems I	*
	Introduction to the metric system	CONS 70A	Introduction to Low Voltage Building Systems I	*
Introduction to hand tools		CONS 70A	Introduction to Low Voltage Building Systems I	*
	Description and selection of hammers	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Screwdrivers	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Sledgehammers	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Ripping bar and nail puller	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Wrenches	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Pliers and wire cutters	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Levels	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Squares	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Rulers and measuring tapes	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Bench vises and c-clamps	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Saws and files	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Chisels and punches	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Plumb bob	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Sockets, ratchets and torque wrenches	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Wedges	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Chalk lines and utility knives	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Chain falls and come alongs	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Wire brushes	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Maintenance	CONS 70A	Introduction to Low Voltage Building Systems I	*
Power tools		CONS 70A	Introduction to Low Voltage Building Systems I	*
	Introduction	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Electric, Pneumatic, Hydraulic, and Powder tools	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Safety	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Drills	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Saws	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Sanders and grinders	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Porto-power	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Powder actuated	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Maintenance	CONS 70A	Introduction to Low Voltage Building Systems I	*

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Electronic Systems Technician/Fire-Life Safety Curriculum

San Diego Community College District in conjunction with San Diego Associated Builders and Contractors

CURRICULM ITEM		SDCCD COURSE ID	COURSE TITLE	LEC/LAB HOURS
Blueprints		CONS 70A	Introduction to Low Voltage Building Systems I	*
	Overview	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Components and types of blueprint	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Measuring tools	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Line types and symbols	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Abbreviations	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Grid lines	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Dimensions	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Care of blueprints	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Standards vs. company procedures	CONS 70A	Introduction to Low Voltage Building Systems I	*
	What is Computer Aided Design (CAD)?	CONS 70A	Introduction to Low Voltage Building Systems I	*
Rigging		CONS 70A	Introduction to Low Voltage Building Systems I	*
	Introduction	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Rigging safety and equipment	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Rigging equipment	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Inspecting rigging equipment	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Crane hand signals	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Estimating, size, weight and gravity	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Tying knots	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Types of derricks and cranes	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Rigging and moving materials and equipment	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Fasteners and anchors	CONS 70A	Introduction to Low Voltage Building Systems I	*
Building Materials		CONS 70A	Introduction to Low Voltage Building Systems I	*
	Lumber	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Plywood	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Building Boards	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Engineered Lumber	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Gypsum Board	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Masonry Materials	CONS 70A	Introduction to Low Voltage Building Systems I	*
Residential Frame Construction		CONS 70A	Introduction to Low Voltage Building Systems I	*
	Floor Construction	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Wall Construction	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Ceiling Construction	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Roof Construction	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Plank-And-Beam Framing	CONS 70A	Introduction to Low Voltage Building Systems I	*

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CURRICULM ITEM		SDCCD COURSE ID	COURSE TITLE	LEC/LAB HOURS
	Wall Framing in Masonry	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Walls Separating Occupancies	CONS 70A	Introduction to Low Voltage Building Systems I	*
Commercial Construction Methods		CONS 70A	Introduction to Low Voltage Building Systems I	*
	Floors	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Exterior Walls	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Interior Walls and Partitions	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Ceilings	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Firestopping	CONS 70A	Introduction to Low Voltage Building Systems I	*
Tools Used for Running Cable		CONS 70A	Introduction to Low Voltage Building Systems I	*
	Guidelines for Using All Power Tools	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Drilling Tools	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Cutting Tools	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Powder-Actuated Fastening Tools	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Stud Finders	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Fish Tapes	CONS 70A	Introduction to Low Voltage Building Systems I	*
Project Schedules		CONS 70A	Introduction to Low Voltage Building Systems I	*
Raceways		CONS 70A	Introduction to Low Voltage Building Systems I	*
Conduit		CONS 70A	Introduction to Low Voltage Building Systems I	*
	Types and uses	CONS 70A	Introduction to Low Voltage Building Systems I	*
Metal Conduit Fittings		CONS 70A	Introduction to Low Voltage Building Systems I	*
	Couplings	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Conduit bodies	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Hubs	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Bushings	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Offset nipples	CONS 70A	Introduction to Low Voltage Building Systems I	*
Boxes		CONS 70A	Introduction to Low Voltage Building Systems I	*
	Metal boxes	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Nonmetallic boxes	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Low-Voltage boxes	CONS 70A	Introduction to Low Voltage Building Systems I	*
Bushings and Locknuts		CONS 70A	Introduction to Low Voltage Building Systems I	*
Sealing Fittings		CONS 70A	Introduction to Low Voltage Building Systems I	*
Cable and Raceway Supports		CONS 70A	Introduction to Low Voltage Building Systems I	*
	Straps	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Standoff Supports	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Electrical framing channels	CONS 70A	Introduction to Low Voltage Building Systems I	*

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CURRICULM ITEM		SDCCD COURSE ID	COURSE TITLE	LEC/LAB HOURS
	Beam clamps	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Cable supports	CONS 70A	Introduction to Low Voltage Building Systems I	*
Wireways		CONS 70A	Introduction to Low Voltage Building Systems I	*
	Types of wireways	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Wireway fittings	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Wireway supports	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Other types of raceways	CONS 70A	Introduction to Low Voltage Building Systems I	*
Cable Trays		CONS 70A	Introduction to Low Voltage Building Systems I	*
	Fittings	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Supports	CONS 70A	Introduction to Low Voltage Building Systems I	*
Storing Raceways		CONS 70A	Introduction to Low Voltage Building Systems I	*
Handling Raceways		CONS 70A	Introduction to Low Voltage Building Systems I	*
Ducting		CONS 70A	Introduction to Low Voltage Building Systems I	*
	Duct materials	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Plastic conduit	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Monolithic concrete duct	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Controlled envorionment vaults	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Pedestals and cabinets	CONS 70A	Introduction to Low Voltage Building Systems I	*
Making a Conduit-to-Box Connection		CONS 70A	Introduction to Low Voltage Building Systems I	*
Overview of Cable Distribution		CONS 70A	Introduction to Low Voltage Building Systems I	*
	Pathways	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Spaces	CONS 70A	Introduction to Low Voltage Building Systems I	*
Hand Bending Equipment		CONS 70A	Introduction to Low Voltage Building Systems I	*
	Geometry required to make a bend	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Making a 90 degree bend	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Gain	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Back-to-back bends	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Making an offset	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Parallel offsets	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Saddle bends	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Four-bend saddles	CONS 70A	Introduction to Low Voltage Building Systems I	*
Cutting, Reaming and Threading Conduit		CONS 70A	Introduction to Low Voltage Building Systems I	*
	Hacksaw method	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Pipe cutter method	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Reaming	CONS 70A	Introduction to Low Voltage Building Systems I	*

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CURRICULM ITEM		SDCCD COURSE ID	COURSE TITLE	LEC/LAB HOURS
	Threading	CONS 70A	Introduction to Low Voltage Building Systems I	*
	Cutting and joining PVC	CONS 70A	Introduction to Low Voltage Building Systems I	*
Introduction to Math Used in the Electrical Trade		CONS 70B	Introduction to Low Voltage Building Systems II	*
The Metric System		CONS 70B	Introduction to Low Voltage Building Systems II	*
	Fundamental units	CONS 70B	Introduction to Low Voltage Building Systems II	*
	Length, area and volume	CONS 70B	Introduction to Low Voltage Building Systems II	*
	Mass versus weight	CONS 70B	Introduction to Low Voltage Building Systems II	*
	Pressure and acceleration	CONS 70B	Introduction to Low Voltage Building Systems II	*
	Temperature	CONS 70B	Introduction to Low Voltage Building Systems II	*
Scientific Notation		CONS 70B	Introduction to Low Voltage Building Systems II	*
	Using powers of ten	CONS 70B	Introduction to Low Voltage Building Systems II	*
	Scientific notation with a calculator	CONS 70B	Introduction to Low Voltage Building Systems II	*
Powers and Roots		CONS 70B	Introduction to Low Voltage Building Systems II	*
	Square and square roots	CONS 70B	Introduction to Low Voltage Building Systems II	*
	Other powers and roots	CONS 70B	Introduction to Low Voltage Building Systems II	*
Introduction to Algebra		CONS 70B	Introduction to Low Voltage Building Systems II	*
	Definition of terms	CONS 70B	Introduction to Low Voltage Building Systems II	*
	Sequences of operations	CONS 70B	Introduction to Low Voltage Building Systems II	*
	Solving algebraic equations	CONS 70B	Introduction to Low Voltage Building Systems II	*
Introduction to Geometry		CONS 70B	Introduction to Low Voltage Building Systems II	*
	Points and lines	CONS 70B	Introduction to Low Voltage Building Systems II	*
	Circles	CONS 70B	Introduction to Low Voltage Building Systems II	*
	Angles	CONS 70B	Introduction to Low Voltage Building Systems II	*
	Polygons	CONS 70B	Introduction to Low Voltage Building Systems II	*
	Triangles	CONS 70B	Introduction to Low Voltage Building Systems II	*
Working with Right Triangles		CONS 70B	Introduction to Low Voltage Building Systems II	*
	Using the Pythagorean Theorem	CONS 70B	Introduction to Low Voltage Building Systems II	*
	Using Trigonometry	CONS 70B	Introduction to Low Voltage Building Systems II	*
Converting Measurements		CONS 70B	Introduction to Low Voltage Building Systems II	*
	Decimal feet to feet and inches	CONS 70B	Introduction to Low Voltage Building Systems II	*
	Feet and inches to decimal feet	CONS 70B	Introduction to Low Voltage Building Systems II	*
Electronic Systems		CONS 70B	Introduction to Low Voltage Building Systems II	*
	Description of industry	CONS 70B	Introduction to Low Voltage Building Systems II	*
	Integrated Building Management Systems	CONS 70B	Introduction to Low Voltage Building Systems II	*

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CURRICULM ITEM		SDCCD COURSE ID	COURSE TITLE	LEC/LAB HOURS
Certification and Licensing		CONS 70B	Introduction to Low Voltage Building Systems II	*
	Licensing requirements	CONS 70B	Introduction to Low Voltage Building Systems II	*
	Rules, Regulations and Standards	CONS 70B	Introduction to Low Voltage Building Systems II	*
Responsibilities of electricians		CONS 70B	Introduction to Low Voltage Building Systems II	*
	Health and Safety	CONS 70B	Introduction to Low Voltage Building Systems II	*
	Professional standards	CONS 70B	Introduction to Low Voltage Building Systems II	*
	Company standards	CONS 70B	Introduction to Low Voltage Building Systems II	*
	Obligations to customers	CONS 70B	Introduction to Low Voltage Building Systems II	*
	Courtesy and respect	CONS 70B	Introduction to Low Voltage Building Systems II	*
	Communicating as a professional	CONS 70B	Introduction to Low Voltage Building Systems II	*
	Teamwork	CONS 70B	Introduction to Low Voltage Building Systems II	*
	Conflict resolution	CONS 70B	Introduction to Low Voltage Building Systems II	*
		CONS 70B	Introduction to Low Voltage Building Systems II	*
Industry Standards and Building Codes		CONS 70B	Introduction to Low Voltage Building Systems II	*
	National Electrical Code	CONS 70B	Introduction to Low Voltage Building Systems II	*
	Canadian Electrical Code, part 1	CONS 70B	Introduction to Low Voltage Building Systems II	*
	National Fire Protection Association	CONS 70B	Introduction to Low Voltage Building Systems II	*
	National Building Codes	CONS 70B	Introduction to Low Voltage Building Systems II	*
	International Standards	CONS 70B	Introduction to Low Voltage Building Systems II	*
	Need for Standards	CONS 70B	Introduction to Low Voltage Building Systems II	*
	Documentation and Paperwork	CONS 70B	Introduction to Low Voltage Building Systems II	*
Types of Training Programs		CONS 70B	Introduction to Low Voltage Building Systems II	*
	Standardized training by NCCER	CONS 70B	Introduction to Low Voltage Building Systems II	*
Overview of Cable Distribution		CONS 70B	Introduction to Low Voltage Building Systems II	*
	Pathways	CONS 70B	Introduction to Low Voltage Building Systems II	*
	Spaces	CONS 70B	Introduction to Low Voltage Building Systems II	*
Hand Bending Equipment		CONS 70B	Introduction to Low Voltage Building Systems II	*
	Geometry required to make a bend	CONS 70B	Introduction to Low Voltage Building Systems II	*
	Making a 90 degree bend	CONS 70B	Introduction to Low Voltage Building Systems II	*
	Gain	CONS 70B	Introduction to Low Voltage Building Systems II	*
	Back-to-back bends	CONS 70B	Introduction to Low Voltage Building Systems II	*
	Making an offset	CONS 70B	Introduction to Low Voltage Building Systems II	*
	Parallel offsets	CONS 70B	Introduction to Low Voltage Building Systems II	*
	Saddle bends	CONS 70B	Introduction to Low Voltage Building Systems II	*
	Four-bend saddles	CONS 70B	Introduction to Low Voltage Building Systems II	*

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CURRICULM ITEM	SDCCD COURSE ID	COURSE TITLE	LEC/LAB HOURS
Cutting, Reaming and Threading Conduit	CONS 70B	Introduction to Low Voltage Building Systems II	*
Hacksaw method	CONS 70B	Introduction to Low Voltage Building Systems II	*
Pipe cutter method	CONS 70B	Introduction to Low Voltage Building Systems II	*
Reaming	CONS 70B	Introduction to Low Voltage Building Systems II	*
Threading	CONS 70B	Introduction to Low Voltage Building Systems II	*
Cutting and joining PVC	CONS 70B	Introduction to Low Voltage Building Systems II	*
Conductors and Insulators	CONS 70B	Introduction to Low Voltage Building Systems II	*
The Atom	CONS 70B	Introduction to Low Voltage Building Systems II	*
Conductors and Insulators	CONS 70B	Introduction to Low Voltage Building Systems II	*
Electric Charge and Current	CONS 70B	Introduction to Low Voltage Building Systems II	*
Current Flow	CONS 70B	Introduction to Low Voltage Building Systems II	*
Voltage	CONS 70B	Introduction to Low Voltage Building Systems II	*
Resistance	CONS 70B	Introduction to Low Voltage Building Systems II	*
Characteristics of Resistance	CONS 70B	Introduction to Low Voltage Building Systems II	*
Ohm's Law	CONS 70B	Introduction to Low Voltage Building Systems II	*
Schematic Representation of Circuit Elements	CONS 70B	Introduction to Low Voltage Building Systems II	*
Resistors	CONS 70B	Introduction to Low Voltage Building Systems II	*
Resistor Color Codes	CONS 70B	Introduction to Low Voltage Building Systems II	*
Measuring Voltage, Current, and Resistance	CONS 70B	Introduction to Low Voltage Building Systems II	*
Basic Meter Operation	CONS 70B	Introduction to Low Voltage Building Systems II	*
Voltmeter	CONS 70B	Introduction to Low Voltage Building Systems II	*
Ammeter	CONS 70B	Introduction to Low Voltage Building Systems II	*
hmmeter	CONS 70B	Introduction to Low Voltage Building Systems II	*
Electical Power	CONS 70B	Introduction to Low Voltage Building Systems II	*
Power Equation	CONS 70B	Introduction to Low Voltage Building Systems II	*
Power Rating of Resistors	CONS 70B	Introduction to Low Voltage Building Systems II	*
Low-Voltage Cable Conductors and Insulation	CONS 70B	Introduction to Low Voltage Building Systems II	*
Wire size	CONS 70B	Introduction to Low Voltage Building Systems II	*
Material	CONS 70B	Introduction to Low Voltage Building Systems II	*
Insulation	CONS 70B	Introduction to Low Voltage Building Systems II	*
Conductor voltage drop	CONS 70B	Introduction to Low Voltage Building Systems II	*
Optical Fiber Cable Signal Conductor and Sheathing	CONS 70B	Introduction to Low Voltage Building Systems II	*
Low-Voltage and Optical Fiber Cables	CONS 70B	Introduction to Low Voltage Building Systems II	*
NEC Classifications	CONS 70B	Introduction to Low Voltage Building Systems II	*
PTLC, Fire Alarm, and Class 2/3 Cable	CONS 70B	Introduction to Low Voltage Building Systems II	*

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Electronic Systems Technician/Fire-Life Safety Curriculum

San Diego Community College District in conjunction with San Diego Associated Builders and Contractors

CURRICULM ITEM		SDCCD COURSE ID	COURSE TITLE	LEC/LAB HOURS
	Communication Cable	CONS 70B	Introduction to Low Voltage Building Systems II	*
Commercial Low-Voltage Cable Installation		CONS 70B	Introduction to Low Voltage Building Systems II	*
	Planning the installation	CONS 70B	Introduction to Low Voltage Building Systems II	*
	Setting up for cable pulling	CONS 70B	Introduction to Low Voltage Building Systems II	*
	Cable pulling equipment	CONS 70B	Introduction to Low Voltage Building Systems II	*
	Vertical and horizontal pathway cable pulls	CONS 70B	Introduction to Low Voltage Building Systems II	*
Residential Low-Voltage Cable Installation		CONS 70B	Introduction to Low Voltage Building Systems II	*
	Residential communication/data cabling	CONS 70B	Introduction to Low Voltage Building Systems II	*
	Understanding the job	CONS 70B	Introduction to Low Voltage Building Systems II	*
	Residential requirements/considerations	CONS 70B	Introduction to Low Voltage Building Systems II	*
	Drilling and fishing cable in existing construction	CONS 70B	Introduction to Low Voltage Building Systems II	*
Interior Low-Voltage Cabling Installation		CONS 70B	Introduction to Low Voltage Building Systems II	*
	Class 1 circuits	CONS 70B	Introduction to Low Voltage Building Systems II	*
	Class 2 and 3 circuits	CONS 70B	Introduction to Low Voltage Building Systems II	*
	Instrumentation Tray circuits	CONS 70B	Introduction to Low Voltage Building Systems II	*
	Nonpower-limited fire alarm circuits	CONS 70B	Introduction to Low Voltage Building Systems II	*
	Power-limited fire alarm circuits	CONS 70B	Introduction to Low Voltage Building Systems II	*
	Optical fiber cable	CONS 70B	Introduction to Low Voltage Building Systems II	*
	Hybrid cable	CONS 70B	Introduction to Low Voltage Building Systems II	*
	Communication circuits within buildings	CONS 70B	Introduction to Low Voltage Building Systems II	*
	Coaxial CATV cable installation	CONS 70B	Introduction to Low Voltage Building Systems II	*
	Network-powered broadband communication system installation	CONS 70B	Introduction to Low Voltage Building Systems II	*
Electromagnetic Interference Considerations		CONS 70B	Introduction to Low Voltage Building Systems II	*
	EMI guidelines	CONS 70B	Introduction to Low Voltage Building Systems II	*
Resistive Circuits		CONS 70B	Introduction to Low Voltage Building Systems II	*
	Resistances in series	CONS 70B	Introduction to Low Voltage Building Systems II	*
	Resistances in parallel	CONS 70B	Introduction to Low Voltage Building Systems II	*
	Series-parallel circuits	CONS 70B	Introduction to Low Voltage Building Systems II	*
	Applying Ohm's Law	CONS 70B	Introduction to Low Voltage Building Systems II	*
Kirchoff's Laws		CONS 70B	Introduction to Low Voltage Building Systems II	*
	Current law	CONS 70B	Introduction to Low Voltage Building Systems II	*
	Voltage law	CONS 70B	Introduction to Low Voltage Building Systems II	*
	Loop equations	CONS 70B	Introduction to Low Voltage Building Systems II	*

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CURRICULM ITEM	SDCCD COURSE ID	COURSE TITLE	LEC/LAB HOURS
Introduction to Alternating Current	CONS 70B	Introduction to Low Voltage Building Systems II	*
Sine wave generation	CONS 70B	Introduction to Low Voltage Building Systems II	*
Sine wave terminology	CONS 70B	Introduction to Low Voltage Building Systems II	*
AC Phase Relationships	CONS 70B	Introduction to Low Voltage Building Systems II	*
Resistance in AC Circuits	CONS 70B	Introduction to Low Voltage Building Systems II	*
Inductance in AC Circuits	CONS 70B	Introduction to Low Voltage Building Systems II	*
Capacitance	CONS 70B	Introduction to Low Voltage Building Systems II	*
Calculating equivalent capacitance	CONS 70B	Introduction to Low Voltage Building Systems II	*
Capacitor specifications	CONS 70B	Introduction to Low Voltage Building Systems II	*
Capacitive reactance	CONS 70B	Introduction to Low Voltage Building Systems II	*
Power in AC Circuits	CONS 70B	Introduction to Low Voltage Building Systems II	*
Transformers	CONS 70B	Introduction to Low Voltage Building Systems II	*
Transformer construction	CONS 70B	Introduction to Low Voltage Building Systems II	*
Operating characteristics	CONS 70B	Introduction to Low Voltage Building Systems II	*
Turns and voltage ratios	CONS 70B	Introduction to Low Voltage Building Systems II	*
Types of transformers	CONS 70B	Introduction to Low Voltage Building Systems II	*
Electricity Under Magnification	CONS 70B	Introduction to Low Voltage Building Systems II	*
Semiconductor Fundamentals	CONS 70B	Introduction to Low Voltage Building Systems II	*
Conductors	CONS 70B	Introduction to Low Voltage Building Systems II	*
Insulators	CONS 70B	Introduction to Low Voltage Building Systems II	*
Semiconductors	CONS 70B	Introduction to Low Voltage Building Systems II	*
Diodes	CONS 70B	Introduction to Low Voltage Building Systems II	*
Rectifiers	CONS 70B	Introduction to Low Voltage Building Systems II	*
Identification	CONS 70B	Introduction to Low Voltage Building Systems II	*
Light-Emitting Diodes	CONS 70B	Introduction to Low Voltage Building Systems II	*
Transistors	CONS 70B	Introduction to Low Voltage Building Systems II	*
NPN transistors	CONS 70B	Introduction to Low Voltage Building Systems II	*
PNP transistors	CONS 70B	Introduction to Low Voltage Building Systems II	*
Identifying transistor leads	CONS 70B	Introduction to Low Voltage Building Systems II	*
Field-effect transistors	CONS 70B	Introduction to Low Voltage Building Systems II	*
Silicon-Controlled Rectifiers	CONS 70B	Introduction to Low Voltage Building Systems II	*
Diacs	CONS 70B	Introduction to Low Voltage Building Systems II	*
Triacs	CONS 70B	Introduction to Low Voltage Building Systems II	*
Operational Amplifiers	CONS 70B	Introduction to Low Voltage Building Systems II	*

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CURRICULM ITEM		SDCCD COURSE ID	COURSE TITLE	LEC/LAB HOURS
Introduction to Blueprint Reading		CONS 70B	Introduction to Low Voltage Building Systems II	*
	Site plan	CONS 70B	Introduction to Low Voltage Building Systems II	*
	Floor plans	CONS 70B	Introduction to Low Voltage Building Systems II	*
	Elevations	CONS 70B	Introduction to Low Voltage Building Systems II	*
	Electrical drawings	CONS 70B	Introduction to Low Voltage Building Systems II	*
Blueprint Layout		CONS 70B	Introduction to Low Voltage Building Systems II	*
	Title block	CONS 70B	Introduction to Low Voltage Building Systems II	*
	Approval block	CONS 70B	Introduction to Low Voltage Building Systems II	*
	Revision block	CONS 70B	Introduction to Low Voltage Building Systems II	*
Drafting Lines		CONS 70B	Introduction to Low Voltage Building Systems II	*
	Electrical drafting lines	CONS 70B	Introduction to Low Voltage Building Systems II	*
Electrical Symbols		CONS 70B	Introduction to Low Voltage Building Systems II	*
Scale Drawings		CONS 70B	Introduction to Low Voltage Building Systems II	*
	Architect's scale	CONS 70B	Introduction to Low Voltage Building Systems II	*
	Engineer's scale	CONS 70B	Introduction to Low Voltage Building Systems II	*
	Metric scale	CONS 70B	Introduction to Low Voltage Building Systems II	*
Analyzing Electrical Drawings		CONS 70B	Introduction to Low Voltage Building Systems II	*
	Development of site plans	CONS 70B	Introduction to Low Voltage Building Systems II	*
Power Plans		CONS 70B	Introduction to Low Voltage Building Systems II	*
	Key plan	CONS 70B	Introduction to Low Voltage Building Systems II	*
	Symbol list	CONS 70B	Introduction to Low Voltage Building Systems II	*
	Floor plan	CONS 70B	Introduction to Low Voltage Building Systems II	*
Lighting Floor Plan		CONS 70B	Introduction to Low Voltage Building Systems II	*
	Drawing schedules	CONS 70B	Introduction to Low Voltage Building Systems II	*
Electrical Details and Diagrams		CONS 70B	Introduction to Low Voltage Building Systems II	*
	Power-riser diagrams	CONS 70B	Introduction to Low Voltage Building Systems II	*
	Schematic diagrams	CONS 70B	Introduction to Low Voltage Building Systems II	*
	Drawing details	CONS 70B	Introduction to Low Voltage Building Systems II	*
Written Specifications		CONS 70B	Introduction to Low Voltage Building Systems II	*
	Format	CONS 70B	Introduction to Low Voltage Building Systems II	*
	CSI format	CONS 70B	Introduction to Low Voltage Building Systems II	*

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CURRICULM ITEM	SDCCD COURSE ID	COURSE TITLE	LEC/LAB HOURS
Meters	CONS 71A	Intermediate Low Voltage Building Systems I	*
Ammeter	CONS 71A	Intermediate Low Voltage Building Systems I	*
Voltmeter	CONS 71A	Intermediate Low Voltage Building Systems I	*
Ohmmeter	CONS 71A	Intermediate Low Voltage Building Systems I	*
Analog Multimeters	CONS 71A	Intermediate Low Voltage Building Systems I	*
Specifications	CONS 71A	Intermediate Low Voltage Building Systems I	*
Overload protection	CONS 71A	Intermediate Low Voltage Building Systems I	*
Making measurements	CONS 71A	Intermediate Low Voltage Building Systems I	*
Direct Current measurements	CONS 71A	Intermediate Low Voltage Building Systems I	*
Maintenance	CONS 71A	Intermediate Low Voltage Building Systems I	*
Digital Meters	CONS 71A	Intermediate Low Voltage Building Systems I	*
Digital multimeters	CONS 71A	Intermediate Low Voltage Building Systems I	*
Operation	CONS 71A	Intermediate Low Voltage Building Systems I	*
Maintenance	CONS 71A	Intermediate Low Voltage Building Systems I	*
Clamp-On Ammeters	CONS 71A	Intermediate Low Voltage Building Systems I	*
Oscilloscopes	CONS 71A	Intermediate Low Voltage Building Systems I	*
Analog operating principles	CONS 71A	Intermediate Low Voltage Building Systems I	*
Operation of the Analog Oscilloscope	CONS 71A	Intermediate Low Voltage Building Systems I	*
Use of probes	CONS 71A	Intermediate Low Voltage Building Systems I	*
Waveform characteristics and terminology	CONS 71A	Intermediate Low Voltage Building Systems I	*
Measurement techniques	CONS 71A	Intermediate Low Voltage Building Systems I	*
Wattmeter	CONS 71A	Intermediate Low Voltage Building Systems I	*
Megohmmeter	CONS 71A	Intermediate Low Voltage Building Systems I	*
Safety	CONS 71A	Intermediate Low Voltage Building Systems I	*
Frequency Meters/Counters	CONS 71A	Intermediate Low Voltage Building Systems I	*
Time Domain Reflectometer	CONS 71A	Intermediate Low Voltage Building Systems I	*
Continuity Testers	CONS 71A	Intermediate Low Voltage Building Systems I	*
Recording Instruments	CONS 71A	Intermediate Low Voltage Building Systems I	*
Radio Frequency Analyzer Meters	CONS 71A	Intermediate Low Voltage Building Systems I	*
Safety	CONS 71A	Intermediate Low Voltage Building Systems I	*
Typical Electrical Generation and Distribution Systems	CONS 71A	Intermediate Low Voltage Building Systems I	*
Utility power generation, transmission, and distribution	CONS 71A	Intermediate Low Voltage Building Systems I	*
Premises wiring	CONS 71A	Intermediate Low Voltage Building Systems I	*
AC power characteristics	CONS 71A	Intermediate Low Voltage Building Systems I	*

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CURRICULM ITEM	SDCCD COURSE ID	COURSE TITLE	LEC/LAB HOURS
Premises Electrical System Grounding	CONS 71A	Intermediate Low Voltage Building Systems I	*
Terminology	CONS 71A	Intermediate Low Voltage Building Systems I	*
NEC grounding requirements	CONS 71A	Intermediate Low Voltage Building Systems I	*
System and equipment grounding	CONS 71A	Intermediate Low Voltage Building Systems I	*
Building Lighting Protection	CONS 71A	Intermediate Low Voltage Building Systems I	*
Causes of Poor AC Power Quality	CONS 71A	Intermediate Low Voltage Building Systems I	*
Voltage transients/surge	CONS 71A	Intermediate Low Voltage Building Systems I	*
Voltage swell/sag	CONS 71A	Intermediate Low Voltage Building Systems I	*
Overvoltage/undervoltage	CONS 71A	Intermediate Low Voltage Building Systems I	*
Voltage interruptions	CONS 71A	Intermediate Low Voltage Building Systems I	*
Frequency variations	CONS 71A	Intermediate Low Voltage Building Systems I	*
Harmonics	CONS 71A	Intermediate Low Voltage Building Systems I	*
Noise/electromagnetic interference	CONS 71A	Intermediate Low Voltage Building Systems I	*
Power System Protection and Conditioning	CONS 71A	Intermediate Low Voltage Building Systems I	*
Filters and regulators	CONS 71A	Intermediate Low Voltage Building Systems I	*
Motor and engine generator sets	CONS 71A	Intermediate Low Voltage Building Systems I	*
Static UPS	CONS 71A	Intermediate Low Voltage Building Systems I	*
Direct Current Power	CONS 71A	Intermediate Low Voltage Building Systems I	*
DC power supplies	CONS 71A	Intermediate Low Voltage Building Systems I	*
Storage batteries	CONS 71A	Intermediate Low Voltage Building Systems I	*
Charger operation	CONS 71A	Intermediate Low Voltage Building Systems I	*
Cable Shielding and Grounding to Minimize EMI	CONS 71A	Intermediate Low Voltage Building Systems I	*
Cable shields	CONS 71A	Intermediate Low Voltage Building Systems I	*
Preventing ground loops	CONS 71A	Intermediate Low Voltage Building Systems I	*
Static Electricity Problems and Prevention	CONS 71A	Intermediate Low Voltage Building Systems I	*
Testing for Proper Low-Voltage Ground	CONS 71A	Intermediate Low Voltage Building Systems I	*
Measuring using three-point method	CONS 71A	Intermediate Low Voltage Building Systems I	*
Measuring in multiple electrode grounding systems	CONS 71A	Intermediate Low Voltage Building Systems I	*
Two-point simplified measurement	CONS 71A	Intermediate Low Voltage Building Systems I	*
Location of Ground Faults	CONS 71A	Intermediate Low Voltage Building Systems I	*
Basic Telephone Operation	CONS 71A	Intermediate Low Voltage Building Systems I	*
Multiplexing	CONS 71A	Intermediate Low Voltage Building Systems I	*
Key systems and PBXs	CONS 71A	Intermediate Low Voltage Building Systems I	*
Network Topologies	CONS 71A	Intermediate Low Voltage Building Systems I	*
IEEE 802.3 or CSMA/CD	CONS 71A	Intermediate Low Voltage Building Systems I	*

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CURRICULM ITEM	SDCCD COURSE ID	COURSE TITLE	LEC/LAB HOURS
Cable for Voice Systems	CONS 71A	Intermediate Low Voltage Building Systems I	*
Types of cables	CONS 71A	Intermediate Low Voltage Building Systems I	*
Identification and color coding	CONS 71A	Intermediate Low Voltage Building Systems I	*
Cable for Data Systems	CONS 71A	Intermediate Low Voltage Building Systems I	*
Coaxial cable	CONS 71A	Intermediate Low Voltage Building Systems I	*
Shielded Twisted Pair	CONS 71A	Intermediate Low Voltage Building Systems I	*
Unshielded Twisted Pair	CONS 71A	Intermediate Low Voltage Building Systems I	*
Fiber Optic cable	CONS 71A	Intermediate Low Voltage Building Systems I	*
Identification and color coding	CONS 71A	Intermediate Low Voltage Building Systems I	*
Installation Standards	CONS 71A	Intermediate Low Voltage Building Systems I	*
Outside plant	CONS 71A	Intermediate Low Voltage Building Systems I	*
Premises wiring	CONS 71A	Intermediate Low Voltage Building Systems I	*
Testing and Troubleshooting	CONS 71A	Intermediate Low Voltage Building Systems I	*
Test equipment	CONS 71A	Intermediate Low Voltage Building Systems I	*
Test parameters	CONS 71A	Intermediate Low Voltage Building Systems I	*
Troubleshooting	CONS 71A	Intermediate Low Voltage Building Systems I	*
Switches	CONS 71A	Intermediate Low Voltage Building Systems I	*
Switch classifications	CONS 71A	Intermediate Low Voltage Building Systems I	*
Switch descriptions	CONS 71A	Intermediate Low Voltage Building Systems I	*
Relays	CONS 71A	Intermediate Low Voltage Building Systems I	*
Electromechanical relays	CONS 71A	Intermediate Low Voltage Building Systems I	*
Solid-state relays	CONS 71A	Intermediate Low Voltage Building Systems I	*
Timers and Time Clocks	CONS 71A	Intermediate Low Voltage Building Systems I	*
Dashpot timer relays	CONS 71A	Intermediate Low Voltage Building Systems I	*
Pneumatic timers	CONS 71A	Intermediate Low Voltage Building Systems I	*
Time clocks	CONS 71A	Intermediate Low Voltage Building Systems I	*
Solid-state timers	CONS 71A	Intermediate Low Voltage Building Systems I	*
Photoelectric Devices	CONS 71A	Intermediate Low Voltage Building Systems I	*
Photocell switches	CONS 71A	Intermediate Low Voltage Building Systems I	*
Solar cells	CONS 71A	Intermediate Low Voltage Building Systems I	*
Proximity Switches	CONS 71A	Intermediate Low Voltage Building Systems I	*
Types of Conductor Terminations	CONS 71A	Intermediate Low Voltage Building Systems I	*
Crimp connectors for screw terminals	CONS 71A	Intermediate Low Voltage Building Systems I	*
Coaxial cable, video and audio connectors	CONS 71A	Intermediate Low Voltage Building Systems I	*
Communications connectors and terminations	CONS 71A	Intermediate Low Voltage Building Systems I	*

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CURRICULM ITEM	SDCCD COURSE ID	COURSE TITLE	LEC/LAB HOURS
Low-Voltage Cable/Conductor Termination	CONS 71A	Intermediate Low Voltage Building Systems I	*
Termination to solderless connectors	CONS 71A	Intermediate Low Voltage Building Systems I	*
Termination of coaxial or shielded cable	CONS 71A	Intermediate Low Voltage Building Systems I	*
Communications/Data Conductor Termination	CONS 71A	Intermediate Low Voltage Building Systems I	*
Preliminary termination procedures	CONS 71A	Intermediate Low Voltage Building Systems I	*
Typical consolidation point or cross-connect block termination procedures	CONS 71A	Intermediate Low Voltage Building Systems I	*
Typical workstation coupler or modular jack termination	CONS 71A	Intermediate Low Voltage Building Systems I	*
Typical surface-mount box termination	CONS 71A	Intermediate Low Voltage Building Systems I	*
Modular plug/cord fabrication and termination	CONS 71A	Intermediate Low Voltage Building Systems I	*
Patch cord and 110 block plug termination	CONS 71A	Intermediate Low Voltage Building Systems I	*
Testing	CONS 71A	Intermediate Low Voltage Building Systems I	*
Purpose of Codes and Standards	CONS 71A	Intermediate Low Voltage Building Systems I	*
Codes	CONS 71A	Intermediate Low Voltage Building Systems I	*
Standards	CONS 71A	Intermediate Low Voltage Building Systems I	*
Determining Which Codes and Standards to Follow	CONS 71A	Intermediate Low Voltage Building Systems I	*
Words With Special Meanings Used in Codes and Standards	CONS 71A	Intermediate Low Voltage Building Systems I	*
Code Deviations and Conflicts	CONS 71A	Intermediate Low Voltage Building Systems I	*
National Electrical Code (NEC)	CONS 71A	Intermediate Low Voltage Building Systems I	*
Layout of the NEC	CONS 71A	Intermediate Low Voltage Building Systems I	*
Navigating the NEC	CONS 71A	Intermediate Low Voltage Building Systems I	*
Canadian Electrical Code, Part 1	CONS 71A	Intermediate Low Voltage Building Systems I	*
National Fire Alarm Code (NFPA 72)	CONS 71A	Intermediate Low Voltage Building Systems I	*
Life Safety Code (NFPA 101)	CONS 71A	Intermediate Low Voltage Building Systems I	*
Related NFPA Codes	CONS 71A	Intermediate Low Voltage Building Systems I	*
Installation of sprinkler systems (NFPA 13)	CONS 71A	Intermediate Low Voltage Building Systems I	*
Protection of electronic computer/data processing equipment (NFPA 75)	CONS 71A	Intermediate Low Voltage Building Systems I	*
Installation of lightning protection systems (NFPA 780)	CONS 71A	Intermediate Low Voltage Building Systems I	*
National Building Codes	CONS 71A	Intermediate Low Voltage Building Systems I	*
ANSI/TIA/EIA Telecommunications-Related Standards	CONS 71A	Intermediate Low Voltage Building Systems I	*
Commercial Building Telecommunications Cabling (ANSI/TIA/EIA-568-A)	CONS 71A	Intermediate Low Voltage Building Systems I	*
Telecommunication Pathways and Spaces (ANSI/TIA/EIA 569-A)	CONS 71A	Intermediate Low Voltage Building Systems I	*

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	Residential Telecommunications Cabling (ANSI/TIA/EIA 570-A)	CONS 71A	Intermediate Low Voltage Building Systems I	*
	Telecommunications Infrastructure of Commercial Buildings (ANSI/TIA/EIA-606)	CONS 71A	Intermediate Low Voltage Building Systems I	*
	Grounding and Bonding Requirements for Telecommunications (ANSI/TIA/EIA-607)	CONS 71A	Intermediate Low Voltage Building Systems I	*
Related Standards		CONS 71A	Intermediate Low Voltage Building Systems I	*
	CSMA/CD Access Method (IEEE 802.3)	CONS 71A	Intermediate Low Voltage Building Systems I	*
	Token Ring Access Method (IEEE 802.5)	CONS 71A	Intermediate Low Voltage Building Systems I	*
	High Performance Serial Bus (IEEE 1394)	CONS 71A	Intermediate Low Voltage Building Systems I	*
	Flexible RF Coaxial Drop Cable (SCTE IPS-SP-001)	CONS 71A	Intermediate Low Voltage Building Systems I	*
Testing Laboratories		CONS 71A	Intermediate Low Voltage Building Systems I	*
	Nationally-recognized testing laboratories	CONS 71A	Intermediate Low Voltage Building Systems I	*
	National Electrical Manufacturers' Assocation.	CONS 71A	Intermediate Low Voltage Building Systems I	*
Computer Terminology		CONS 71A	Intermediate Low Voltage Building Systems I	*
Microprocessors		CONS 71A	Intermediate Low Voltage Building Systems I	*
Mainframe Computers		CONS 71A	Intermediate Low Voltage Building Systems I	*
Personal Computers		CONS 71A	Intermediate Low Voltage Building Systems I	*
	Monitors	CONS 71A	Intermediate Low Voltage Building Systems I	*
	Connections	CONS 71A	Intermediate Low Voltage Building Systems I	*
	Storage media	CONS 71A	Intermediate Low Voltage Building Systems I	*
	Servers	CONS 71A	Intermediate Low Voltage Building Systems I	*
Laptop Computers		CONS 71A	Intermediate Low Voltage Building Systems I	*
Computer Programs		CONS 71A	Intermediate Low Voltage Building Systems I	*
	Operating systems	CONS 71A	Intermediate Low Voltage Building Systems I	*
	Application software	CONS 71A	Intermediate Low Voltage Building Systems I	*
Networks		CONS 71A	Intermediate Low Voltage Building Systems I	*
	Information exchange	CONS 71A	Intermediate Low Voltage Building Systems I	*
	Local Area Networks	CONS 71A	Intermediate Low Voltage Building Systems I	*
	Transfer medium	CONS 71A	Intermediate Low Voltage Building Systems I	*
	Physical connections	CONS 71A	Intermediate Low Voltage Building Systems I	*
	Transmission techniques	CONS 71A	Intermediate Low Voltage Building Systems I	*
	Synchronization	CONS 71A	Intermediate Low Voltage Building Systems I	*
	Multiplexing	CONS 71A	Intermediate Low Voltage Building Systems I	*

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CURRICULM ITEM	SDCCD COURSE ID	COURSE TITLE	LEC/LAB HOURS
Network Access	CONS 71A	Intermediate Low Voltage Building Systems I	*
Topologies	CONS 71A	Intermediate Low Voltage Building Systems I	*
Media access	CONS 71A	Intermediate Low Voltage Building Systems I	*
OSI Reference Model	CONS 71A	Intermediate Low Voltage Building Systems I	*
Protocols	CONS 71A	Intermediate Low Voltage Building Systems I	*
Ethernet	CONS 71A	Intermediate Low Voltage Building Systems I	*
Basic Computer Troubleshooting	CONS 71A	Intermediate Low Voltage Building Systems I	*
Low-Voltage Cable Conductors and Insulation	CONS 71B	Intermediate Low Voltage Building Systems II	*
Conductor wire size	CONS 71B	Intermediate Low Voltage Building Systems II	*
Conductor material	CONS 71B	Intermediate Low Voltage Building Systems II	*
Insulation	CONS 71B	Intermediate Low Voltage Building Systems II	*
Conductor voltage drop	CONS 71B	Intermediate Low Voltage Building Systems II	*
Coaxial cable voltage drop	CONS 71B	Intermediate Low Voltage Building Systems II	*
Speaker cable power drop	CONS 71B	Intermediate Low Voltage Building Systems II	*
Low-Voltage and Optical Fiber Cables	CONS 71B	Intermediate Low Voltage Building Systems II	*
NEC classifications and ratings	CONS 71B	Intermediate Low Voltage Building Systems II	*
PTLC, Fire Alarm, and Class 2/3 cable styles	CONS 71B	Intermediate Low Voltage Building Systems II	*
Communication cable styles	CONS 71B	Intermediate Low Voltage Building Systems II	*
Cable Signal Loss Considerations	CONS 71B	Intermediate Low Voltage Building Systems II	*
Common Cable Applications	CONS 71B	Intermediate Low Voltage Building Systems II	*
Rack Systems	CONS 71B	Intermediate Low Voltage Building Systems II	*
System identification and selection	CONS 71B	Intermediate Low Voltage Building Systems II	*
Rack System Grounding	CONS 71B	Intermediate Low Voltage Building Systems II	*
Safety concerns	CONS 71B	Intermediate Low Voltage Building Systems II	*
Signal interference	CONS 71B	Intermediate Low Voltage Building Systems II	*
Rack System Ventilation	CONS 71B	Intermediate Low Voltage Building Systems II	*
Overheating problems	CONS 71B	Intermediate Low Voltage Building Systems II	*
Power requirements	CONS 71B	Intermediate Low Voltage Building Systems II	*
Rack Layout and Installation	CONS 71B	Intermediate Low Voltage Building Systems II	*
The Data Highway	CONS 71B	Intermediate Low Voltage Building Systems II	*
Serial communication	CONS 71B	Intermediate Low Voltage Building Systems II	*
Parallel communication	CONS 71B	Intermediate Low Voltage Building Systems II	*
Data busses	CONS 71B	Intermediate Low Voltage Building Systems II	*
Transfer Medium	CONS 71B	Intermediate Low Voltage Building Systems II	*

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CURRICULM ITEM	SDCCD COURSE ID	COURSE TITLE	LEC/LAB HOURS
OSI Refernce model	CONS 71B	Intermediate Low Voltage Building Systems II	*
Connections to Transfer Medium	CONS 71B	Intermediate Low Voltage Building Systems II	*
Operating Principles of Network Topologies	CONS 71B	Intermediate Low Voltage Building Systems II	*
Star topology	CONS 71B	Intermediate Low Voltage Building Systems II	*
Ring topology	CONS 71B	Intermediate Low Voltage Building Systems II	*
Bus topology	CONS 71B	Intermediate Low Voltage Building Systems II	*
Hybrid topologies	CONS 71B	Intermediate Low Voltage Building Systems II	*
Access Control	CONS 71B	Intermediate Low Voltage Building Systems II	*
Random access	CONS 71B	Intermediate Low Voltage Building Systems II	*
Polling	CONS 71B	Intermediate Low Voltage Building Systems II	*
Dedicated channel	CONS 71B	Intermediate Low Voltage Building Systems II	*
Token passing	CONS 71B	Intermediate Low Voltage Building Systems II	*
Relating Network Protocols to the OSI Model	CONS 71B	Intermediate Low Voltage Building Systems II	*
Network-LLC service interface	CONS 71B	Intermediate Low Voltage Building Systems II	*
LLC-MAC service interface	CONS 71B	Intermediate Low Voltage Building Systems II	*
Physical medium functions	CONS 71B	Intermediate Low Voltage Building Systems II	*
Common Network Nomenclature	CONS 71B	Intermediate Low Voltage Building Systems II	*
Ethernet	CONS 71B	Intermediate Low Voltage Building Systems II	*
Real-time issues	CONS 71B	Intermediate Low Voltage Building Systems II	*
Manufacturing Automation Protocol (MAP)	CONS 71B	Intermediate Low Voltage Building Systems II	*
Features of the MAP/TOP	CONS 71B	Intermediate Low Voltage Building Systems II	*
The Internet	CONS 71B	Intermediate Low Voltage Building Systems II	*
Background	CONS 71B	Intermediate Low Voltage Building Systems II	*
Transmission Control Protocol/Internet Protocol	CONS 71B	Intermediate Low Voltage Building Systems II	*
(TCP/IP)	CONS 71B	Intermediate Low Voltage Building Systems II	*
Internet application protocols	CONS 71B	Intermediate Low Voltage Building Systems II	*
Local Area Networks (LANs)	CONS 71B	Intermediate Low Voltage Building Systems II	*
Basic Input/Output System (BIOS)	CONS 71B	Intermediate Low Voltage Building Systems II	*
Operating systems	CONS 71B	Intermediate Low Voltage Building Systems II	*
Networking software/operating systems	CONS 71B	Intermediate Low Voltage Building Systems II	*
Performance issues	CONS 71B	Intermediate Low Voltage Building Systems II	*
Proprietary Control Networks	CONS 71B	Intermediate Low Voltage Building Systems II	*
PLC communication systems	CONS 71B	Intermediate Low Voltage Building Systems II	*
DCS communication systems	CONS 71B	Intermediate Low Voltage Building Systems II	*
Bridges, Routers and Gateways	CONS 71B	Intermediate Low Voltage Building Systems II	*

* All classes total 90 hours per semester. Weekly hours include 2 hours lecture, 3 hours lab.

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CURRICULM ITEM	SDCCD COURSE ID	COURSE TITLE	LEC/LAB HOURS
Wide Area Networks (WANs)	CONS 71B	Intermediate Low Voltage Building Systems II	*
Proprietary links	CONS 71B	Intermediate Low Voltage Building Systems II	*
X.25	CONS 71B	Intermediate Low Voltage Building Systems II	*
Frame relay	CONS 71B	Intermediate Low Voltage Building Systems II	*
Switched multi-megabit data service	CONS 71B	Intermediate Low Voltage Building Systems II	*
ISDN	CONS 71B	Intermediate Low Voltage Building Systems II	*
Network security	CONS 71B	Intermediate Low Voltage Building Systems II	*
Fiber-Optics Fundamentals and Theory	CONS 71B	Intermediate Low Voltage Building Systems II	*
Light generation and coupling	CONS 71B	Intermediate Low Voltage Building Systems II	*
Light transmission	CONS 71B	Intermediate Low Voltage Building Systems II	*
Fiber-Optic Components	CONS 71B	Intermediate Low Voltage Building Systems II	*
Optical fiber	CONS 71B	Intermediate Low Voltage Building Systems II	*
Cabling	CONS 71B	Intermediate Low Voltage Building Systems II	*
Types of cables	CONS 71B	Intermediate Low Voltage Building Systems II	*
Transmitters	CONS 71B	Intermediate Low Voltage Building Systems II	*
Design	CONS 71B	Intermediate Low Voltage Building Systems II	*
Performance	CONS 71B	Intermediate Low Voltage Building Systems II	*
Recievers	CONS 71B	Intermediate Low Voltage Building Systems II	*
Basic reciever elements	CONS 71B	Intermediate Low Voltage Building Systems II	*
Performance considerations	CONS 71B	Intermediate Low Voltage Building Systems II	*
Detector types	CONS 71B	Intermediate Low Voltage Building Systems II	*
Connectors, Couplers and Splices	CONS 71B	Intermediate Low Voltage Building Systems II	*
Requirements	CONS 71B	Intermediate Low Voltage Building Systems II	*
Causes of connection losses	CONS 71B	Intermediate Low Voltage Building Systems II	*
Connector and splice examples	CONS 71B	Intermediate Low Voltage Building Systems II	*
Basic coupler theory	CONS 71B	Intermediate Low Voltage Building Systems II	*
Working with Fiber Optics	CONS 71B	Intermediate Low Voltage Building Systems II	*
Installation	CONS 71B	Intermediate Low Voltage Building Systems II	*
Fiber-Optic cable assembly	CONS 71B	Intermediate Low Voltage Building Systems II	*
Durability	CONS 71B	Intermediate Low Voltage Building Systems II	*
Connector structures	CONS 71B	Intermediate Low Voltage Building Systems II	*
Connector installation	CONS 71B	Intermediate Low Voltage Building Systems II	*
Connecting single and multi-fiber cables	CONS 71B	Intermediate Low Voltage Building Systems II	*
Connector types	CONS 71B	Intermediate Low Voltage Building Systems II	*
Splicing	CONS 71B	Intermediate Low Voltage Building Systems II	*

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CURRICULM ITEM	SDCCD COURSE ID	COURSE TITLE	LEC/LAB HOURS
Applications of fiber splices	CONS 71B	Intermediate Low Voltage Building Systems II	*
Types of splicing	CONS 71B	Intermediate Low Voltage Building Systems II	*
Splicing issues	CONS 71B	Intermediate Low Voltage Building Systems II	*
Fiber-Optic Testing	CONS 71B	Intermediate Low Voltage Building Systems II	*
Optical power	CONS 71B	Intermediate Low Voltage Building Systems II	*
Mode control	CONS 71B	Intermediate Low Voltage Building Systems II	*
Fiber loss measurements	CONS 71B	Intermediate Low Voltage Building Systems II	*
Insertion loss tests	CONS 71B	Intermediate Low Voltage Building Systems II	*
Time and frequency domains	CONS 71B	Intermediate Low Voltage Building Systems II	*
Optical time-domain reflectometry	CONS 71B	Intermediate Low Voltage Building Systems II	*
Components of a Cable Television System	CONS 71B	Intermediate Low Voltage Building Systems II	*
Head end	CONS 71B	Intermediate Low Voltage Building Systems II	*
Distribution system	CONS 71B	Intermediate Low Voltage Building Systems II	*
Satellite Television	CONS 71B	Intermediate Low Voltage Building Systems II	*
System elements	CONS 71B	Intermediate Low Voltage Building Systems II	*
Alignment procedures	CONS 71B	Intermediate Low Voltage Building Systems II	*
Television Broadcast Receiving	CONS 71B	Intermediate Low Voltage Building Systems II	*
Antenna mounting and placement	CONS 71B	Intermediate Low Voltage Building Systems II	*
Broadband VHF and UHF Preamplifiers	CONS 71B	Intermediate Low Voltage Building Systems II	*
Closed-Circuit Television (CCTV)	CONS 71B	Intermediate Low Voltage Building Systems II	*
Asset protection	CONS 71B	Intermediate Low Voltage Building Systems II	*
Components and equipment	CONS 71B	Intermediate Low Voltage Building Systems II	*
CCTV Applications	CONS 71B	Intermediate Low Voltage Building Systems II	*
MATV and SMATV Systems	CONS 71B	Intermediate Low Voltage Building Systems II	*
System Grounding for Interference Suppression	CONS 71B	Intermediate Low Voltage Building Systems II	*
Non-ground solutions	CONS 71B	Intermediate Low Voltage Building Systems II	*
Technical Star ground system	CONS 71B	Intermediate Low Voltage Building Systems II	*
Wireless Communication Principles	CONS 71B	Intermediate Low Voltage Building Systems II	*
Modulation	CONS 71B	Intermediate Low Voltage Building Systems II	*
Analog and Digital signals	CONS 71B	Intermediate Low Voltage Building Systems II	*
Multiplexing	CONS 71B	Intermediate Low Voltage Building Systems II	*
Radio Frequency (RF) Systems	CONS 71B	Intermediate Low Voltage Building Systems II	*
Transmitters	CONS 71B	Intermediate Low Voltage Building Systems II	*
Receivers	CONS 71B	Intermediate Low Voltage Building Systems II	*
Antennas	CONS 71B	Intermediate Low Voltage Building Systems II	*

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CURRICULM ITEM		SDCCD COURSE ID	COURSE TITLE	LEC/LAB HOURS
	Waveguide	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Voltage Standing Wave Ratio	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Transcievers	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Repeaters	CONS 71B	Intermediate Low Voltage Building Systems II	*
Wireless Personal Communications		CONS 71B	Intermediate Low Voltage Building Systems II	*
	Time Division Multiple Access	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Code Division Multiple Access	CONS 71B	Intermediate Low Voltage Building Systems II	*
Infrared Systems		CONS 71B	Intermediate Low Voltage Building Systems II	*
	Remote control circuits	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Remote control distribution systems	CONS 71B	Intermediate Low Voltage Building Systems II	*
	RS-232 data transmission interface systems	CONS 71B	Intermediate Low Voltage Building Systems II	*
	IR beam-break systems	CONS 71B	Intermediate Low Voltage Building Systems II	*
Power Line Carrier (PLC) Systems		CONS 71B	Intermediate Low Voltage Building Systems II	*
	X-10 systems	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Other PLC systems	CONS 71B	Intermediate Low Voltage Building Systems II	*
Wireless Computer Networks		CONS 71B	Intermediate Low Voltage Building Systems II	*
Satellite Communications		CONS 71B	Intermediate Low Voltage Building Systems II	*
	Areas of service	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Orbits	CONS 71B	Intermediate Low Voltage Building Systems II	*
Test Equipment		CONS 71B	Intermediate Low Voltage Building Systems II	*
	RF Field Strength Analyzer	CONS 71B	Intermediate Low Voltage Building Systems II	*
	RF Standing Wave meter	CONS 71B	Intermediate Low Voltage Building Systems II	*
	RF Power Meter	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Satellite Tester	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Oscilloscope	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Spectrum analyzer	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Frequency counter	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Power line carrier testers	CONS 71B	Intermediate Low Voltage Building Systems II	*
Telecommunications Antenna Installation		CONS 71B	Intermediate Low Voltage Building Systems II	*
Security Systems		CONS 71B	Intermediate Low Voltage Building Systems II	*
	Introduction	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Security System Services	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Burglar Alarms	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Holdup Alarm	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Access Control	CONS 71B	Intermediate Low Voltage Building Systems II	*

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Electronic Systems Technician/Fire-Life Safety Curriculum

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CURRICULM ITEM		SDCCD COURSE ID	COURSE TITLE	LEC/LAB HOURS
	Closed-Circuit Television	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Local Systems	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Monitored Systems	CONS 71B	Intermediate Low Voltage Building Systems II	*
Types of Security Systems		CONS 71B	Intermediate Low Voltage Building Systems II	*
	Conventional Hardwired Systems	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Multiplex Systems	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Addressable and Analog and Intelligent Systems	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Types of Security System Sensors	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Perimeter Sensors	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Magnetic Switch Sensors	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Glass-Break Systems	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Burglar Alarm Screens	CONS 71B	Intermediate Low Voltage Building Systems II	*
Shock Detectors (Vibration)		CONS 71B	Intermediate Low Voltage Building Systems II	*
	Structural-Attack Piezoelectric Sensors	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Electric Field Sensors (Capacitive)	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Coaxial Cable Systems	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Buried Line Intrusion Sensors (Seismic)	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Outdoor Microwave Sensors	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Active Infrared (Photoelectric Beam) Sensors	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Interior Sensors	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Microwave Detectors	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Passive Infrared sensors	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Photoelectric Detectors	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Pressure Mats	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Stress Sensors	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Audio Sensors	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Proximity Sensors (Capacitor)	CONS 71B	Intermediate Low Voltage Building Systems II	*
Annunciation Devices		CONS 71B	Intermediate Low Voltage Building Systems II	*
	Stobes	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Bells, Buzzers, Horns, Chimes, and Sirens	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Voice Messages	CONS 71B	Intermediate Low Voltage Building Systems II	*
Control Panels		CONS 71B	Intermediate Low Voltage Building Systems II	*
	Control Units and Combination systems	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Operating Panels (control Points)	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Keypads	CONS 71B	Intermediate Low Voltage Building Systems II	*

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CURRICULM ITEM		SDCCD COURSE ID	COURSE TITLE	LEC/LAB HOURS
	Key Switches	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Touch Screens	CONS 71B	Intermediate Low Voltage Building Systems II	*
Telephone Control		CONS 71B	Intermediate Low Voltage Building Systems II	*
	Wireless	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Computer Control	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Control Unit/Panel Circuit Labeling	CONS 71B	Intermediate Low Voltage Building Systems II	*
Types of Control Unit Outputs		CONS 71B	Intermediate Low Voltage Building Systems II	*
	Relay Contacts	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Built-in Siren Drivers	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Communications Options	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Monitoring Options	CONS 71B	Intermediate Low Voltage Building Systems II	*
Communications Methods		CONS 71B	Intermediate Low Voltage Building Systems II	*
	Internet Provider	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Multiplex Systems	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Fiber Optic Systems	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Long-Range Radio or Satellite Systems	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Digital Communicators	CONS 71B	Intermediate Low Voltage Building Systems II	*
Applications		CONS 71B	Intermediate Low Voltage Building Systems II	*
	System Design and the Roles of Motion (space) Detectors	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Selecting the Appropriate Sensor for the Application	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Combined Technology Sensors	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Concealing Sensors	CONS 71B	Intermediate Low Voltage Building Systems II	*
Methods for Connecting Security Systems		CONS 71B	Intermediate Low Voltage Building Systems II	*
	Hardwired Systems	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Line Carrier Systems	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Wireless Systems	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Zoning	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Condition Monitoring	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Circuit Options	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Alarm Verification	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Circuit Response time	CONS 71B	Intermediate Low Voltage Building Systems II	*
UL Requirements, Commercial, Residential Extents		CONS 71B	Intermediate Low Voltage Building Systems II	*
	False Alarm Prevention Control Teams (FACT), Programming Options, Control Panel	CONS 71B	Intermediate Low Voltage Building Systems II	*
	General Installation and Wiring Requirements	CONS 71B	Intermediate Low Voltage Building Systems II	*

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CURRICULM ITEM		SDCCD COURSE ID	COURSE TITLE	LEC/LAB HOURS
	Workmanship	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Access to Equipment	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Security System Circuit Identification	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Power-Limited Circuits in Raceways	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Mounting of Detector Assemblies	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Outdoor Wiring	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Fire Seals	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Wiring In Air-Handling, Hazardous, Wet, and Corrosive Locations	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Wiring Protection	CONS 71B	Intermediate Low Voltage Building Systems II	*
Cables Running Floor to Floor and Raceways		CONS 71B	Intermediate Low Voltage Building Systems II	*
	Raceways Used as Cable Supports	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Cable Spacing	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Elevator Shafts	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Wiring Methods	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Primary and Secondary Power Requirements	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Grounding	CONS 71B	Intermediate Low Voltage Building Systems II	*
System and Equipment Installation Guidelines		CONS 71B	Intermediate Low Voltage Building Systems II	*
	Minimum Secondary Power Installation Standards	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Control Unit Installations	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Perimeter Sensor Installations	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Remote Piezoelectric Sensor Installation	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Structural-Attack Piezoelectric Sensor Installation	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Magnetic Switch Sensor Installation	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Magnetic Reed Switch Installation	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Perimeter Fence Or Exterior Detection System Installation	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Outdoor Microwave Sensor Installation	CONS 71B	Intermediate Low Voltage Building Systems II	*
	PIR Sensor Installation	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Active Infrared Pulsed Single-or Multi-Beam Photoelectric Unit	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Microwave Transceiver Installation	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Proximity Or Capacitance Sensor Installation	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Combined Technology Sensor Installation	CONS 71B	Intermediate Low Voltage Building Systems II	*

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CURRICULM ITEM		SDCCD COURSE ID	COURSE TITLE	LEC/LAB HOURS
Programming Options		CONS 71B	Intermediate Low Voltage Building Systems II	*
	Controlled and 24-Hour Zones	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Entry and Exit Instant and Delayed Pick-up	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Perimeter and Interior Zones	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Home and Away	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Interior Follower Zones	CONS 71B	Intermediate Low Voltage Building Systems II	*
Inspection, Testing, Maintenance		CONS 71B	Intermediate Low Voltage Building Systems II	*
	Precautions for Occupied Buildings	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Testing Methodology	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Security System Troubleshooting	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Alarm System Troubleshooting	CONS 71B	Intermediate Low Voltage Building Systems II	*
Introduction to Intrusion Detection Systems		CONS 71B	Intermediate Low Voltage Building Systems II	*
Intrusion system overview		CONS 71B	Intermediate Low Voltage Building Systems II	*
	Local, monitored, types, conventional hardwired, multiplex and addressable	CONS 71B	Intermediate Low Voltage Building Systems II	*
Types of intrusion system sensors		CONS 71B	Intermediate Low Voltage Building Systems II	*
	Perimeter, magnetic switch, glass-break detectors, burglar alarm screens and shock (vibration) detectors	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Structural-attack piezoelectric, electric field, coaxial cable systems and buried line intrusion (seismic)	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Outdoor microwave, active infrared (photoelectric beam) and interior	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Microwave detectors, passive infrared (PIR), photoelectric detectors and pressure mats	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Stress, audio and capacitance proximity sensors	CONS 71B	Intermediate Low Voltage Building Systems II	*
Annunciation (notification) devices		CONS 71B	Intermediate Low Voltage Building Systems II	*
	Strobes, bells, buzzers, horns, chimes, sirens and voice messages	CONS 71B	Intermediate Low Voltage Building Systems II	*
Control panels		CONS 71B	Intermediate Low Voltage Building Systems II	*
	Control units, combination systems, operating panels, keypads and key switches	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Touch screens, telephone, wireless and computer controls	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Control unit panel circuit labeling and types of outputs	CONS 71B	Intermediate Low Voltage Building Systems II	*

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CURRICULM ITEM		SDCCD COURSE ID	COURSE TITLE	LEC/LAB HOURS
	Relay (dry) contacts, built-in siren drivers, voltage and open collector outputs	CONS 71B	Intermediate Low Voltage Building Systems II	*
Communications and monitoring		CONS 71B	Intermediate Low Voltage Building Systems II	*
	Communications and monitoring options, methods and systems, internet, multiplex, fiber optic and long-range radio or satellite	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Digital, cellular or digital wireless backup	CONS 71B	Intermediate Low Voltage Building Systems II	*
System design		CONS 71B	Intermediate Low Voltage Building Systems II	*
	Applications and motion (space) detectors and selecting appropriate sensors	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Combined technology sensors, concealment, walk test lights, methods of connection, hardwired, line carrier and wireless systems, zones	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Conditions, circuit options, alarm verification, ul requirements, commercial and residential extents	CONS 71B	Intermediate Low Voltage Building Systems II	*
	False alarm prevention and false alarm control teams (FACT)	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Programming options and control panel standards	CONS 71B	Intermediate Low Voltage Building Systems II	*
General installation guidelines		CONS 71B	Intermediate Low Voltage Building Systems II	*
	Wiring requirements, workmanship, access, circuit identification, power-limited circuits in raceways, mounting of detector assemblies	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Outdoor wiring, fire stopping, air-handling spaces, hazardous locations, wet or corrosive environments, underground, remote control signaling circuits	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Wiring protection, cables floor to floor	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Raceway cables and cable support	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Cable spacing, elevator shafts, wiring methods, primary and secondary power grounding	CONS 71B	Intermediate Low Voltage Building Systems II	*
System and equipment installation guidelines		CONS 71B	Intermediate Low Voltage Building Systems II	*
	Minimum secondary power, control units, perimeter sensors, remote piezoelectric, structural-attack piezoelectric, magnetic switch	CONS 71B	Intermediate Low Voltage Building Systems II	*

CURRICULM ITEM		SDCCD COURSE ID	COURSE TITLE	LEC/LAB HOURS
	Magnetic reed switch, perimeter fence, exterior detection systems, outdoor microwave sensors, outdoor active infrared pulsed multi-beam photoelectric units	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Pir sensors, indoor active pulsed single or multi-beam photoelectric units	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Microwave transceivers	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Capacitance proximity or combined technology sensors	CONS 71B	Intermediate Low Voltage Building Systems II	*
Programming options		CONS 71B	Intermediate Low Voltage Building Systems II	*
	Controlled and 24-hour zones, entry and exit delays	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Entry, exit, delayed, instant zones, perimeter and interior zones	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Home and away feature, interior follower, panic, duress, medical and fire zones	CONS 71B	Intermediate Low Voltage Building Systems II	*
Inspection, testing, and maintenance		CONS 71B	Intermediate Low Voltage Building Systems II	*
	Purpose of testing, before testing, precautions for occupied buildings	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Definitions, general requirements, testing methodology, after testing	CONS 71B	Intermediate Low Voltage Building Systems II	*
Intrusion system troubleshooting guidelines		CONS 71B	Intermediate Low Voltage Building Systems II	*
Introduction to Access Control Systems		CONS 71B	Intermediate Low Voltage Building Systems II	*
Entry and access control systems		CONS 71B	Intermediate Low Voltage Building Systems II	*
	Typical non-staffed entry control system and considerations	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Access control systems, coded credentials	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Magnetic stripe, wiegand wire and proximity cards and devices	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Smart cards	CONS 71B	Intermediate Low Voltage Building Systems II	*
Controllers and power supplies		CONS 71B	Intermediate Low Voltage Building Systems II	*
Entry/exit readers		CONS 71B	Intermediate Low Voltage Building Systems II	*
	Swipe, insert, proximity readers and biometric readers	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Hand/finger geometry reader	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Fingerprint readers, retinal, iris and facial scanners	CONS 71B	Intermediate Low Voltage Building Systems II	*

Electronic Systems Technician/Fire-Life Safety Curriculum

San Diego Community College District in conjunction with San Diego Associated Builders and Contractors

CURRICULM ITEM		SDCCD COURSE ID	COURSE TITLE	LEC/LAB HOURS
Locking devices and accessories		CONS 71B	Intermediate Low Voltage Building Systems II	*
	Electric strikes	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Electric bolt locks, electric locksets (latches), electromagnetic locks	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Delayed exit alert locks, exit switches, exit door accessories	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Cable supervision	CONS 71B	Intermediate Low Voltage Building Systems II	*
Entry control barriers		CONS 71B	Intermediate Low Voltage Building Systems II	*
	Gates, swing gates, sliding gates, anti-ram sliding gates	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Drop-bar gates, turnstiles and rotary security doors	CONS 71B	Intermediate Low Voltage Building Systems II	*
	Mantraps, doors	CONS 71B	Intermediate Low Voltage Building Systems II	*
Installation guidelines		CONS 71B	Intermediate Low Voltage Building Systems II	*
Fire Alarm Systems		CONS 72A	Advanced Low Voltage Building Systems I	*
	Introduction	CONS 72A	Advanced Low Voltage Building Systems I	*
	Life Safety	CONS 72A	Advanced Low Voltage Building Systems I	*
	Property Protection	CONS 72A	Advanced Low Voltage Building Systems I	*
	Mission Protection	CONS 72A	Advanced Low Voltage Building Systems I	*
	History	CONS 72A	Advanced Low Voltage Building Systems I	*
Codes and Standards		CONS 72A	Advanced Low Voltage Building Systems I	*
	The National Fire Protection Association	CONS 72A	Advanced Low Voltage Building Systems I	*
	NFPA Codes	CONS 72A	Advanced Low Voltage Building Systems I	*
	NFPA Standards	CONS 72A	Advanced Low Voltage Building Systems I	*
Fire Alarm Systems Overview		CONS 72A	Advanced Low Voltage Building Systems I	*
	Conventional Hardwired Systems	CONS 72A	Advanced Low Voltage Building Systems I	*
	Conventional Initiation Device Circuits	CONS 72A	Advanced Low Voltage Building Systems I	*
	Notification Appliance Circuits	CONS 72A	Advanced Low Voltage Building Systems I	*
	Multiplex Systems	CONS 72A	Advanced Low Voltage Building Systems I	*
	Addressable, and Analog Addressable Systems	CONS 72A	Advanced Low Voltage Building Systems I	*
	Signaling Line Circuits	CONS 72A	Advanced Low Voltage Building Systems I	*
Fire Alarm System Equipment		CONS 72A	Advanced Low Voltage Building Systems I	*
	Fire Alarm Initiating Devices	CONS 72A	Advanced Low Voltage Building Systems I	*
	Conventional/Addressable Commercial Detectors	CONS 72A	Advanced Low Voltage Building Systems I	*
	Automatic Detectors	CONS 72A	Advanced Low Voltage Building Systems I	*

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CURRICULM ITEM		SDCCD COURSE ID	COURSE TITLE	LEC/LAB HOURS
	Heat, Combination, and Fixed Temperature Heat Detectors	CONS 72A	Advanced Low Voltage Building Systems I	*
	Heat Detector Rating	CONS 72A	Advanced Low Voltage Building Systems I	*
	Smoke Detectors	CONS 72A	Advanced Low Voltage Building Systems I	*
	Ionization Detectors	CONS 72A	Advanced Low Voltage Building Systems I	*
	Photoelectric Smoke Detectors	CONS 72A	Advanced Low Voltage Building Systems I	*
Other types of Detectors		CONS 72A	Advanced Low Voltage Building Systems I	*
	Rate Compensation Detectors	CONS 72A	Advanced Low Voltage Building Systems I	*
	Semi-conductor Line Type Heat Detectors	CONS 72A	Advanced Low Voltage Building Systems I	*
	Fusible-Line Type Heat Detectors	CONS 72A	Advanced Low Voltage Building Systems I	*
	Ultraviolet Flame Detectors	CONS 72A	Advanced Low Voltage Building Systems I	*
	Infrared Flame Detectors	CONS 72A	Advanced Low Voltage Building Systems I	*
	Carbon Monoxide Detectors	CONS 72A	Advanced Low Voltage Building Systems I	*
	Pull Station Fire Detection Devices (manual)	CONS 72A	Advanced Low Voltage Building Systems I	*
Sprinkler Systems (wet and dry)		CONS 72A	Advanced Low Voltage Building Systems I	*
	Sprinkler System Flow Alarms	CONS 72A	Advanced Low Voltage Building Systems I	*
	Control Panels and Control Points	CONS 72A	Advanced Low Voltage Building Systems I	*
Connecting the System		CONS 72A	Advanced Low Voltage Building Systems I	*
	Keypads	CONS 72A	Advanced Low Voltage Building Systems I	*
	Key Switches	CONS 72A	Advanced Low Voltage Building Systems I	*
	Touch Screens	CONS 72A	Advanced Low Voltage Building Systems I	*
	Telephone Computer Controls	CONS 72A	Advanced Low Voltage Building Systems I	*
	Fire Alarm Control Panel (FACP) Initiating Circuits	CONS 72A	Advanced Low Voltage Building Systems I	*
	Initiating Circuit Zones	CONS 72A	Advanced Low Voltage Building Systems I	*
	Alarm Verification	CONS 72A	Advanced Low Voltage Building Systems I	*
Fire Alarm Control Panel (FACP) Labeling		CONS 72A	Advanced Low Voltage Building Systems I	*
	FACP Types/Listing	CONS 72A	Advanced Low Voltage Building Systems I	*
	Protected Premises Fire Alarm Systems	CONS 72A	Advanced Low Voltage Building Systems I	*
	Public Auxiliary Fire Alarm Systems	CONS 72A	Advanced Low Voltage Building Systems I	*
	Remote Supervising Station Fire Alarm Systems	CONS 72A	Advanced Low Voltage Building Systems I	*
	Proprietary Supervising Station Fire Alarm Systems	CONS 72A	Advanced Low Voltage Building Systems I	*
	Central Station Fire Alarm Systems	CONS 72A	Advanced Low Voltage Building Systems I	*
Types of FACP Service		CONS 72A	Advanced Low Voltage Building Systems I	*
	FACP Primary and Secondary Power	CONS 72A	Advanced Low Voltage Building Systems I	*
	Notification Appliances	CONS 72A	Advanced Low Voltage Building Systems I	*
	Visual Notification Devices	CONS 72A	Advanced Low Voltage Building Systems I	*

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CURRICULM ITEM		SDCCD COURSE ID	COURSE TITLE	LEC/LAB HOURS
	Audible Notification Devices	CONS 72A	Advanced Low Voltage Building Systems I	*
	Voice Evacuation systems	CONS 72A	Advanced Low Voltage Building Systems I	*
	Audibility Considerations	CONS 72A	Advanced Low Voltage Building Systems I	*
Communications Methods, Options and Monitoring		CONS 72A	Advanced Low Voltage Building Systems I	*
	Internet	CONS 72A	Advanced Low Voltage Building Systems I	*
	Multiplex Systems	CONS 72A	Advanced Low Voltage Building Systems I	*
	Fiber-Optic Systems	CONS 72A	Advanced Low Voltage Building Systems I	*
	Long-Range Radio /Satellite Systems	CONS 72A	Advanced Low Voltage Building Systems I	*
	Derived Channel	CONS 72A	Advanced Low Voltage Building Systems I	*
	Digital Communicators	CONS 72A	Advanced Low Voltage Building Systems I	*
	Cellular Backup	CONS 72A	Advanced Low Voltage Building Systems I	*
	Access to Equipment	CONS 72A	Advanced Low Voltage Building Systems I	*
	Fire Alarm Circuit Identification	CONS 72A	Advanced Low Voltage Building Systems I	*
	Power-Limited Circuits In Raceways	CONS 72A	Advanced Low Voltage Building Systems I	*
Detector Mounting		CONS 72A	Advanced Low Voltage Building Systems I	*
	Outdoor Wiring, Wet or Corrosive Environments	CONS 72A	Advanced Low Voltage Building Systems I	*
	Fire Seals	CONS 72A	Advanced Low Voltage Building Systems I	*
	Wiring in Hazardous and Air Handling Locations	CONS 72A	Advanced Low Voltage Building Systems I	*
	Underground Wiring	CONS 72A	Advanced Low Voltage Building Systems I	*
Fire Pumps		CONS 72A	Advanced Low Voltage Building Systems I	*
	Remote Control Signaling Circuits	CONS 72A	Advanced Low Voltage Building Systems I	*
	Wiring Protection	CONS 72A	Advanced Low Voltage Building Systems I	*
Floor to Floor and Raceway Cable installations		CONS 72A	Advanced Low Voltage Building Systems I	*
	Cable Spacing and Supports (Raceways)	CONS 72A	Advanced Low Voltage Building Systems I	*
	Elevator Shaft Installations	CONS 72A	Advanced Low Voltage Building Systems I	*
	Terminal Wiring	CONS 72A	Advanced Low Voltage Building Systems I	*
	Primary and Secondary Power Requirements	CONS 72A	Advanced Low Voltage Building Systems I	*
	Grounding	CONS 72A	Advanced Low Voltage Building Systems I	*
Total Premises Fire Alarm Installation Guidelines		CONS 72A	Advanced Low Voltage Building Systems I	*
	Pull Station, Manual Fire Alarm Box Installation	CONS 72A	Advanced Low Voltage Building Systems I	*
	Flame Detector Installation	CONS 72A	Advanced Low Voltage Building Systems I	*
	Smoke Chamber, Spread, Stratification Phenomena	CONS 72A	Advanced Low Voltage Building Systems I	*
	Spot Detector Installations, Conventional, Sidewall, and Flat/Irregular Ceilings	CONS 72A	Advanced Low Voltage Building Systems I	*
	.7 Rule and Method	CONS 72A	Advanced Low Voltage Building Systems I	*

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CURRICULM ITEM		SDCCD COURSE ID	COURSE TITLE	LEC/LAB HOURS
	Photoelectric Beam Smoke Detector Installations	CONS 72A	Advanced Low Voltage Building Systems I	*
	Straight-Line Beam Detector Installations	CONS 72A	Advanced Low Voltage Building Systems I	*
	Angled Beam/Mirror Installations	CONS 72A	Advanced Low Voltage Building Systems I	*
	Ceiling Detector Installations (Shed, Peaked, and Beamed)	CONS 72A	Advanced Low Voltage Building Systems I	*
Notification Appliance Installations		CONS 72A	Advanced Low Voltage Building Systems I	*
	Types of Signals	CONS 72A	Advanced Low Voltage Building Systems I	*
	Notification Devices	CONS 72A	Advanced Low Voltage Building Systems I	*
	Fire Alarm Control Panel Installation	CONS 72A	Advanced Low Voltage Building Systems I	*
	Trouble Signal Device Installation	CONS 72A	Advanced Low Voltage Building Systems I	*
	Duct and Smoke Detector Installations	CONS 72A	Advanced Low Voltage Building Systems I	*
Multiple AHU Service		CONS 72A	Advanced Low Voltage Building Systems I	*
	Door Hold-Open Release Service	CONS 72A	Advanced Low Voltage Building Systems I	*
	Elevator Recall	CONS 72A	Advanced Low Voltage Building Systems I	*
	Door Lock Arrangements (Special)	CONS 72A	Advanced Low Voltage Building Systems I	*
	Exit, Delayed Release	CONS 72A	Advanced Low Voltage Building Systems I	*
	Stair Enclosures	CONS 72A	Advanced Low Voltage Building Systems I	*
Suppression System Supervision		CONS 72A	Advanced Low Voltage Building Systems I	*
	Wet and Dry Chemical Extinguishing Systems	CONS 72A	Advanced Low Voltage Building Systems I	*
	Automatic Sprinkler Supervision	CONS 72A	Advanced Low Voltage Building Systems I	*
	Sprinkler Systems and Manual Pull Stations	CONS 72A	Advanced Low Voltage Building Systems I	*
	Screw/Yoke Controls, Valves and Tamper Switches	CONS 72A	Advanced Low Voltage Building Systems I	*
	Tamper vs Initiating Systems	CONS 72A	Advanced Low Voltage Building Systems I	*
	Supervisory vs Trouble Signals	CONS 72A	Advanced Low Voltage Building Systems I	*
	Suppression Systems (High Rise)	CONS 72A	Advanced Low Voltage Building Systems I	*
Household Fire Alarm and Heat Detector Installation Guidelin		CONS 72A	Advanced Low Voltage Building Systems I	*
	Smoke Detector Precautions, Recommendations, Locations	CONS 72A	Advanced Low Voltage Building Systems I	*
	Household Audible/Visual Considerations	CONS 72A	Advanced Low Voltage Building Systems I	*
	Primary Power	CONS 72A	Advanced Low Voltage Building Systems I	*
	Standby Power	CONS 72A	Advanced Low Voltage Building Systems I	*
	Combination Systems	CONS 72A	Advanced Low Voltage Building Systems I	*
	Monitoring/Supervisory Verification of Systems	CONS 72A	Advanced Low Voltage Building Systems I	*
	User Instruction Review	CONS 72A	Advanced Low Voltage Building Systems I	*

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CURRICULM ITEM		SDCCD COURSE ID	COURSE TITLE	LEC/LAB HOURS
Wiring Methods, Testing, Maintenance and Inspection		CONS 72A	Advanced Low Voltage Building Systems I	*
	Test Precautions for Occupied Buildings	CONS 72A	Advanced Low Voltage Building Systems I	*
	Central Stations (Certificated Systems)	CONS 72A	Advanced Low Voltage Building Systems I	*
	Testing Methodology	CONS 72A	Advanced Low Voltage Building Systems I	*
	Fire Alarm Systems Troubleshooting	CONS 72A	Advanced Low Voltage Building Systems I	*
Energy Management Systems (EMS)		CONS 72A	Advanced Low Voltage Building Systems I	*
	Description of commonly used systems	CONS 72A	Advanced Low Voltage Building Systems I	*
	Codes related to system installation	CONS 72A	Advanced Low Voltage Building Systems I	*
	Terminology related to EMS systems	CONS 72A	Advanced Low Voltage Building Systems I	*
Energy Managment System Applications		CONS 72A	Advanced Low Voltage Building Systems I	*
	Direct Digital Control concepts	CONS 72A	Advanced Low Voltage Building Systems I	*
Introduction to Audio Systems		CONS 72A	Advanced Low Voltage Building Systems I	*
	Overview of sound and human hearing, what is sound, volume, pressure and speed	CONS 72A	Advanced Low Voltage Building Systems I	*
	Frequency and waveforms, loudness contours, speech intelligibility	CONS 72A	Advanced Low Voltage Building Systems I	*
	Overview of audio system applications, public address and musical systems	CONS 72A	Advanced Low Voltage Building Systems I	*
Elements of a sound reinforcement system		CONS 72A	Advanced Low Voltage Building Systems I	*
	Microphone basics and classifications	CONS 72A	Advanced Low Voltage Building Systems I	*
	Mounting styles of microphones, pickup patterns and selecting for public address	CONS 72A	Advanced Low Voltage Building Systems I	*
	Speakers, speaker systems and understanding frequency response	CONS 72A	Advanced Low Voltage Building Systems I	*
	Classification of speaker types, woofers, subwoofers and mid-range drivers compression drivers (tweeters), horns processing equipment	CONS 72A	Advanced Low Voltage Building Systems I	*
	Microphone mixer, mixers, signal processing and equalizers	CONS 72A	Advanced Low Voltage Building Systems I	*
	Reverb and delay, compressors and limiters, expanders,	CONS 72A	Advanced Low Voltage Building Systems I	*
	Gates and downward expanders, amplifiers for sound reinforcement, what is an amplifier?	CONS 72A	Advanced Low Voltage Building Systems I	*
	Preamplifiers, headroom	CONS 72A	Advanced Low Voltage Building Systems I	*
	Constant-voltage audio distribution, audio transformers	CONS 72A	Advanced Low Voltage Building Systems I	*

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CURRICULM ITEM		SDCCD COURSE ID	COURSE TITLE	LEC/LAB HOURS
Applications of sound reinforcement systems		CONS 72A	Advanced Low Voltage Building Systems I	*
	Auditorium sound systems, requirements for an auditorium sound system	CONS 72A	Advanced Low Voltage Building Systems I	*
	Overview of sound reinforcement for an auditorium	CONS 72A	Advanced Low Voltage Building Systems I	*
	School, talkback intercom and paging systems	CONS 72A	Advanced Low Voltage Building Systems I	*
	Background music, noise masking and room combining systems	CONS 72A	Advanced Low Voltage Building Systems I	*
	Distributed residential audio systems	CONS 72A	Advanced Low Voltage Building Systems I	*
Audio cabling options		CONS 72A	Advanced Low Voltage Building Systems I	*
	Impedance versus resistance	CONS 72A	Advanced Low Voltage Building Systems I	*
	Balanced versus unbalanced, cabling and wire, microphone and speaker cable distributed speaker systems cable, connectors, xlr and phone plug connectors rca connectors, banana plugs and connectors, patch bays and patch panels	CONS 72A	Advanced Low Voltage Building Systems I	*
Instrumentation and test equipment		CONS 72A	Advanced Low Voltage Building Systems I	*
	Understanding console instruments	CONS 72A	Advanced Low Voltage Building Systems I	*
	Volume unit meter and the peak program meter	CONS 72A	Advanced Low Voltage Building Systems I	*
	The light-emitting diode meter and audio test instruments	CONS 72A	Advanced Low Voltage Building Systems I	*
	Pre-installation and installation testing for a sound reinforcement system	CONS 72A	Advanced Low Voltage Building Systems I	*
	Post-installation testing for a sound reinforcement system	CONS 72A	Advanced Low Voltage Building Systems I	*
	Real-time analyzers	CONS 72A	Advanced Low Voltage Building Systems I	*
	Voltmeters, ohmmeters, multimeters and impedance bridges	CONS 72A	Advanced Low Voltage Building Systems I	*
	Spectrum analyzers and sound pressure level meters	CONS 72A	Advanced Low Voltage Building Systems I	*
Installing audio systems		CONS 72A	Advanced Low Voltage Building Systems I	*
	Overview of installation, activities, design, planning, procurement and staging	CONS 72A	Advanced Low Voltage Building Systems I	*
	Installation and task performance	CONS 72A	Advanced Low Voltage Building Systems I	*
	Testing, commissioning, maintenance, speaker rigging and arrays	CONS 72A	Advanced Low Voltage Building Systems I	*

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CURRICULM ITEM		SDCCD COURSE ID	COURSE TITLE	LEC/LAB HOURS
	The basics of rigging speaker arrays and rigging configurations	CONS 72A	Advanced Low Voltage Building Systems I	*
	Troubleshooting an audio installation	CONS 72A	Advanced Low Voltage Building Systems I	*
System commissioning		CONS 72A	Advanced Low Voltage Building Systems I	*
	General commissioning activities, factory and site acceptance testing	CONS 72A	Advanced Low Voltage Building Systems I	*
	Documentation review, user training and customer sign off	CONS 72A	Advanced Low Voltage Building Systems I	*
	Commissioning a pa, intercom and audio system	CONS 72A	Advanced Low Voltage Building Systems I	*
Introduction to Nurse Call/Signaling Systems		CONS 72A	Advanced Low Voltage Building Systems I	*
Codes and standards		CONS 72A	Advanced Low Voltage Building Systems I	*
	National fire protection association (nfpa), underwriters laboratory (ul), joint commission on accreditation of healthcare organizations (jcaho), national electrical manufacturers association (nema)	CONS 72A	Advanced Low Voltage Building Systems I	*
Types of nurse call systems		CONS 72A	Advanced Low Voltage Building Systems I	*
	Visual, audiovisual, and micro-processor-based audiovisual systems	CONS 72A	Advanced Low Voltage Building Systems I	*
Call management		CONS 72A	Advanced Low Voltage Building Systems I	*
Skilled nursing and assisted living facilities		CONS 72A	Advanced Low Voltage Building Systems I	*
System interfaces		CONS 72A	Advanced Low Voltage Building Systems I	*
	Telephone and entertainment equipment	CONS 72A	Advanced Low Voltage Building Systems I	*
	Paging, fire alarm and security systems	CONS 72A	Advanced Low Voltage Building Systems I	*
	Auxiliary alarm devices, computers and printers	CONS 72A	Advanced Low Voltage Building Systems I	*
Installation practices		CONS 72A	Advanced Low Voltage Building Systems I	*
	Electrical power requirements, electrical systems	CONS 72A	Advanced Low Voltage Building Systems I	*
	Battery-powered emergency lighting, installation guidelines, electrical guidelines	CONS 72A	Advanced Low Voltage Building Systems I	*
	Location of equipment, electrical safety considerations, system wiring and cabling	CONS 72A	Advanced Low Voltage Building Systems I	*
	Programming	CONS 72A	Advanced Low Voltage Building Systems I	*
System checkout/commissioning		CONS 72A	Advanced Low Voltage Building Systems I	*

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CURRICULM ITEM		SDCCD COURSE ID	COURSE TITLE	LEC/LAB HOURS
Introduction to Closed Circuit Television (CCTV) Systems		CONS 72A	Advanced Low Voltage Building Systems I	*
CCTV system overview		CONS 72A	Advanced Low Voltage Building Systems I	*
	A typical cctv system, view more than one camera with a switcher, splitter or a multiplexer	CONS 72A	Advanced Low Voltage Building Systems I	*
	Use a video recorder to archive video	CONS 72A	Advanced Low Voltage Building Systems I	*
CCTV system components		CONS 72A	Advanced Low Voltage Building Systems I	*
	Cameras, camera lens, lens size and mount, focal length of a lens , field of view provided by a lens, iris of a camera lens	CONS 72A	Advanced Low Voltage Building Systems I	*
	Camera mounts, indoor and outdoor enclosures	CONS 72A	Advanced Low Voltage Building Systems I	*
	High security, specialty and dome enclosures	CONS 72A	Advanced Low Voltage Building Systems I	*
	Date and time generators, controllers, elements of control, communication between camera controller and receiver, alarm interface units	CONS 72A	Advanced Low Voltage Building Systems I	*
	Motion detectors, amplifiers for CCTV video signals and signal amplifiers	CONS 72A	Advanced Low Voltage Building Systems I	*
	Distribution amplifiers for CCTV, signal to noise ratio, CCTV keyboards	CONS 72A	Advanced Low Voltage Building Systems I	*
	VCR controllers, video recording in a cctv system	CONS 72A	Advanced Low Voltage Building Systems I	*
	Digital video recorders, multiplexers and video recording	CONS 72A	Advanced Low Voltage Building Systems I	*
	Using a video recorder (VCR) controller in a CCTV system, video and CRT monitors	CONS 72A	Advanced Low Voltage Building Systems I	*
	Liquid crystal displays	CONS 72A	Advanced Low Voltage Building Systems I	*
Introduction to Broadband Systems		CONS 72A	Advanced Low Voltage Building Systems I	*
Evolution of Cable Television (CATV) systems		CONS 72A	Advanced Low Voltage Building Systems I	*
Architecture of cable systems		CONS 72A	Advanced Low Voltage Building Systems I	*
	CATV architecture, head end	CONS 72A	Advanced Low Voltage Building Systems I	*
	Distribution system and subscriber drops	CONS 72A	Advanced Low Voltage Building Systems I	*
	MATV and SMATV architecture	CONS 72A	Advanced Low Voltage Building Systems I	*
Broadband system basics		CONS 72A	Advanced Low Voltage Building Systems I	*
	Prefixes, scientific notation, frequency spectrum	CONS 72A	Advanced Low Voltage Building Systems I	*
	TV channels, high-definition TV channels	CONS 72A	Advanced Low Voltage Building Systems I	*
	Units of measure, decibel, decibels and decibel conversions	CONS 72A	Advanced Low Voltage Building Systems I	*
	Common CATV symbols	CONS 72A	Advanced Low Voltage Building Systems I	*

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CURRICULM ITEM		SDCCD COURSE ID	COURSE TITLE	LEC/LAB HOURS
Satellite technology		CONS 72A	Advanced Low Voltage Building Systems I	*
	Classification of satellites, television satellite frequency spectrum bands	CONS 72A	Advanced Low Voltage Building Systems I	*
	Orbital positions of satellites, downlink signal parameters and areas of service	CONS 72A	Advanced Low Voltage Building Systems I	*
Head end signal processing		CONS 72A	Advanced Low Voltage Building Systems I	*
	VHF/UHF off-the-air signal processing	CONS 72A	Advanced Low Voltage Building Systems I	*
	Satellite signal processing	CONS 72A	Advanced Low Voltage Building Systems I	*
	Locally originated channel signal processing	CONS 72A	Advanced Low Voltage Building Systems I	*
Head end components		CONS 72A	Advanced Low Voltage Building Systems I	*
	Television broadcast receiving antennas and preamps	CONS 72A	Advanced Low Voltage Building Systems I	*
	Receiving antenna signal reception, antenna grounding and specifications	CONS 72A	Advanced Low Voltage Building Systems I	*
	Broadband VHF and UHF preamplifiers	CONS 72A	Advanced Low Voltage Building Systems I	*
	Satellite receiving antennas and low-noise block downconverters	CONS 72A	Advanced Low Voltage Building Systems I	*
	Satellite antenna grounding and alignment procedures	CONS 72A	Advanced Low Voltage Building Systems I	*
	Off-the-air processors, strip amplifiers and single-channel converters	CONS 72A	Advanced Low Voltage Building Systems I	*
	Agile heterodyne processors	CONS 72A	Advanced Low Voltage Building Systems I	*
	Agile heterodyne processor frequency conversion, demodulators and modulators	CONS 72A	Advanced Low Voltage Building Systems I	*
	Satellite receivers, stereo encoders	CONS 72A	Advanced Low Voltage Building Systems I	*
	Combiners, splitters and filters	CONS 72A	Advanced Low Voltage Building Systems I	*
Distribution system components		CONS 72A	Advanced Low Voltage Building Systems I	*
	Distribution amplifiers and line extenders	CONS 72A	Advanced Low Voltage Building Systems I	*
	Splitters, directional couplers and taps	CONS 72A	Advanced Low Voltage Building Systems I	*
	Attenuators and terminators, coaxial cables	CONS 72A	Advanced Low Voltage Building Systems I	*
	Coaxial cable loss, signal tilt andnec catv coaxial cable classifications	CONS 72A	Advanced Low Voltage Building Systems I	*
	Handling and terminating coaxial cables	CONS 72A	Advanced Low Voltage Building Systems I	*
Distribution system topologies		CONS 72A	Advanced Low Voltage Building Systems I	*
	Home-run cable, loop-through cable distribution systems	CONS 72A	Advanced Low Voltage Building Systems I	*
	Trunk-and-branch cable distribution systems	CONS 72A	Advanced Low Voltage Building Systems I	*

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CURRICULM ITEM		SDCCD COURSE ID	COURSE TITLE	LEC/LAB HOURS
Distribution system gains and losses		CONS 72A	Advanced Low Voltage Building Systems I	*
	Cable losses, splitter losses, directional coupler/tap losses	CONS 72A	Advanced Low Voltage Building Systems I	*
	Calculating distribution system gains and losses	CONS 72A	Advanced Low Voltage Building Systems I	*
Test equipment		CONS 72A	Advanced Low Voltage Building Systems I	*
	Signal level meter, spectrum analyzer, cable tone test set	CONS 72A	Advanced Low Voltage Building Systems I	*
	Satellite tester, portable color tv receiver, handling and using test equipment	CONS 72A	Advanced Low Voltage Building Systems I	*
Head end alignment		CONS 72A	Advanced Low Voltage Building Systems I	*
Troubleshooting		CONS 72A	Advanced Low Voltage Building Systems I	*
	Customer interface, physical examination of the system, basic system analysis	CONS 72A	Advanced Low Voltage Building Systems I	*
	The use of manufacturers' troubleshooting aids	CONS 72A	Advanced Low Voltage Building Systems I	*
	Guidelines for troubleshooting the distribution system and head end	CONS 72A	Advanced Low Voltage Building Systems I	*
	Signal level and interference problems	CONS 72A	Advanced Low Voltage Building Systems I	*
Two-way transmission		CONS 72A	Advanced Low Voltage Building Systems I	*
Introduction to Systems Integration		CONS 72A	Advanced Low Voltage Building Systems I	*
	Reasons for system integration and convergence	CONS 72A	Advanced Low Voltage Building Systems I	*
Communication between subsystems		CONS 72A	Advanced Low Voltage Building Systems I	*
	Basic topology, protocols, RS232, RS422 and RS485	CONS 72A	Advanced Low Voltage Building Systems I	*
	Infrared, radio frequency, relays, voltage sensing and ramping	CONS 72A	Advanced Low Voltage Building Systems I	*
	Transmission control protocol/internet protocol, proprietary protocols	CONS 72A	Advanced Low Voltage Building Systems I	*
Network configurations in complex systems		CONS 72A	Advanced Low Voltage Building Systems I	*
	Ethernet, TCP/IP, telnet, FTP, SNMP, SMTP	CONS 72A	Advanced Low Voltage Building Systems I	*
	DHCP, network device addresses, hubs and switches, VLAN	CONS 72A	Advanced Low Voltage Building Systems I	*
	Wireless networking, unicast versus multicast	CONS 72A	Advanced Low Voltage Building Systems I	*

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Electronic Systems Technician/Fire-Life Safety Curriculum

San Diego Community College District in conjunction with San Diego Associated Builders and Contractors

CURRICULM ITEM		SDCCD COURSE ID	COURSE TITLE	LEC/LAB HOURS
Interoperability and system performance		CONS 72A	Advanced Low Voltage Building Systems I	*
	Reliable communications, physical connections	CONS 72A	Advanced Low Voltage Building Systems I	*
	Device configurations, communication syntax, message translator	CONS 72A	Advanced Low Voltage Building Systems I	*
	Systems performance	CONS 72A	Advanced Low Voltage Building Systems I	*
Systems programming		CONS 72A	Advanced Low Voltage Building Systems I	*
	Program development tools for systems controllers	CONS 72A	Advanced Low Voltage Building Systems I	*
	Graphical user interface development tools	CONS 72A	Advanced Low Voltage Building Systems I	*
	Other specialized development tools	CONS 72A	Advanced Low Voltage Building Systems I	*
	Advanced systems controllers, utilizing external resources	CONS 72A	Advanced Low Voltage Building Systems I	*
	Selecting external computers and operating systems	CONS 72A	Advanced Low Voltage Building Systems I	*
	Programming external computers	CONS 72A	Advanced Low Voltage Building Systems I	*
	Utilizing an external computer as the systems controller	CONS 72A	Advanced Low Voltage Building Systems I	*
User interfaces		CONS 72A	Advanced Low Voltage Building Systems I	*
	Feedback	CONS 72A	Advanced Low Voltage Building Systems I	*
	User interface types, wall plate, touch panels	CONS 72A	Advanced Low Voltage Building Systems I	*
Fault tolerance procedures		CONS 72A	Advanced Low Voltage Building Systems I	*
	Individual components, subsystems, integrated systems	CONS 72A	Advanced Low Voltage Building Systems I	*
Automated building control systems		CONS 72A	Advanced Low Voltage Building Systems I	*
	Natural combinations, fire alarms with security, sound, and communications	CONS 72A	Advanced Low Voltage Building Systems I	*
	Video with access control, fire alarms with HVAC, elevators, and lighting	CONS 72A	Advanced Low Voltage Building Systems I	*
	Traffic control with video, hvac and lighting	CONS 72A	Advanced Low Voltage Building Systems I	*
Introduction to System Commissioning and User Training		CONS 72B	Advanced Low Voltage Building Systems II	*
Commissioning process overview		CONS 72B	Advanced Low Voltage Building Systems II	*
	Pre-installation activities, commissioning plan preparation, installation activities	CONS 72B	Advanced Low Voltage Building Systems II	*
	Functional performance testing activities	CONS 72B	Advanced Low Voltage Building Systems II	*
	User training and documentation	CONS 72B	Advanced Low Voltage Building Systems II	*

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CURRICULM ITEM		SDCCD COURSE ID	COURSE TITLE	LEC/LAB HOURS
	As-built drawings and documentation, system acceptance	CONS 72B	Advanced Low Voltage Building Systems II	*
	Post-acceptance activities	CONS 72B	Advanced Low Voltage Building Systems II	*
User training		CONS 72B	Advanced Low Voltage Building Systems II	*
	Determining the scope of the training	CONS 72B	Advanced Low Voltage Building Systems II	*
	Education and training are different	CONS 72B	Advanced Low Voltage Building Systems II	*
	Determine requirements for education and training, instructor preparation	CONS 72B	Advanced Low Voltage Building Systems II	*
	Trainee qualifications, equipment/system preparation, conduct the training	CONS 72B	Advanced Low Voltage Building Systems II	*
	Course introduction, demonstration and hands-on practice	CONS 72B	Advanced Low Voltage Building Systems II	*
	Safety considerations	CONS 72B	Advanced Low Voltage Building Systems II	*
	Guiding learner performance, classroom instruction, on-the-job training	CONS 72B	Advanced Low Voltage Building Systems II	*
	Preparing for and presenting ojt	CONS 72B	Advanced Low Voltage Building Systems II	*
	Try-out learner performance during ojt, evaluating ojt performance	CONS 72B	Advanced Low Voltage Building Systems II	*
	Course closure	CONS 72B	Advanced Low Voltage Building Systems II	*
Overview of media management systems		CONS 72B	Advanced Low Voltage Building Systems II	*
Types of systems		CONS 72B	Advanced Low Voltage Building Systems II	*
	Digital library systems	CONS 72B	Advanced Low Voltage Building Systems II	*
	Content-on-demand systems	CONS 72B	Advanced Low Voltage Building Systems II	*
Video display equipment		CONS 72B	Advanced Low Voltage Building Systems II	*
	Local control units, television monitors, speakers, video projectors	CONS 72B	Advanced Low Voltage Building Systems II	*
	Computers, lcd displays, plasma displays	CONS 72B	Advanced Low Voltage Building Systems II	*
Storage, retrieval and playback equipment		CONS 72B	Advanced Low Voltage Building Systems II	*
	Local digital data sources, digital video servers	CONS 72B	Advanced Low Voltage Building Systems II	*
	Presentation players, digital file formats, local digital data storage	CONS 72B	Advanced Low Voltage Building Systems II	*
	Hard disk drives, raid systems	CONS 72B	Advanced Low Voltage Building Systems II	*
	Magneto-optical storage, worm storage, dvd-ram,	CONS 72B	Advanced Low Voltage Building Systems II	*
	Internet digital data sources	CONS 72B	Advanced Low Voltage Building Systems II	*
	Streaming audio and video, world wide web pages	CONS 72B	Advanced Low Voltage Building Systems II	*

CURRICULM ITEM		SDCCD COURSE ID	COURSE TITLE	LEC/LAB HOURS
	Content players, compact disks (cds)	CONS 72B	Advanced Low Voltage Building Systems II	*
	Video cassette recorders (vcrs), digital versatile disks, laserdiscs (ld)	CONS 72B	Advanced Low Voltage Building Systems II	*
	Video cameras, broadcast sources	CONS 72B	Advanced Low Voltage Building Systems II	*
	Catv, matv, satellite, radio	CONS 72B	Advanced Low Voltage Building Systems II	*
Network infrastructure		CONS 72B	Advanced Low Voltage Building Systems II	*
	Broadband a/v, coaxial (rf)	CONS 72B	Advanced Low Voltage Building Systems II	*
	Fiber, baseband a/v, stereo rca, composite video	CONS 72B	Advanced Low Voltage Building Systems II	*
	S-video, component video y'pr'pb'	CONS 72B	Advanced Low Voltage Building Systems II	*
	Data network, lan, wan, video transmission equipment	CONS 72B	Advanced Low Voltage Building Systems II	*
	Modulators, demodulators, combiners, processors	CONS 72B	Advanced Low Voltage Building Systems II	*
	Scan converters	CONS 72B	Advanced Low Voltage Building Systems II	*
MMS software		CONS 72B	Advanced Low Voltage Building Systems II	*
	User interface, web-based systems, content scheduling issues	CONS 72B	Advanced Low Voltage Building Systems II	*
Site Survey, Project Planning, and Documentation		CONS 72B	Advanced Low Voltage Building Systems II	*
	Introduction	CONS 72B	Advanced Low Voltage Building Systems II	*
	Overview of the Job Estimating and Bidding Process	CONS 72B	Advanced Low Voltage Building Systems II	*
	Management Decision to Bid	CONS 72B	Advanced Low Voltage Building Systems II	*
	The Estimating Process	CONS 72B	Advanced Low Voltage Building Systems II	*
	Completing the Estimate	CONS 72B	Advanced Low Voltage Building Systems II	*
	Management Approval	CONS 72B	Advanced Low Voltage Building Systems II	*
	Prepare and Submit the Bid	CONS 72B	Advanced Low Voltage Building Systems II	*
Job Planning After the Contract Award		CONS 72B	Advanced Low Voltage Building Systems II	*
	Review Job Requirements	CONS 72B	Advanced Low Voltage Building Systems II	*
	Construction Drawings	CONS 72B	Advanced Low Voltage Building Systems II	*
	As-Built Drawings	CONS 72B	Advanced Low Voltage Building Systems II	*
	Specifications	CONS 72B	Advanced Low Voltage Building Systems II	*
	Special and General Conditions	CONS 72B	Advanced Low Voltage Building Systems II	*
	Technical Aspects	CONS 72B	Advanced Low Voltage Building Systems II	*
	Scope of Work	CONS 72B	Advanced Low Voltage Building Systems II	*
	Exclusions	CONS 72B	Advanced Low Voltage Building Systems II	*

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Electronic Systems Technician/Fire-Life Safety Curriculum

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CURRICULM ITEM	SDCCD COURSE ID	COURSE TITLE	LEC/LAB HOURS
New construction site Survey, Planning and Documentation	CONS 72B	Advanced Low Voltage Building Systems II	*
Scheduling the Work	CONS 72B	Advanced Low Voltage Building Systems II	*
Acquire the Needed Materials/Equipment	CONS 72B	Advanced Low Voltage Building Systems II	*
Assign the Installation Crew	CONS 72B	Advanced Low Voltage Building Systems II	*
Completing the Installation	CONS 72B	Advanced Low Voltage Building Systems II	*
Quality Control/Acceptance Test	CONS 72B	Advanced Low Voltage Building Systems II	*
Punch List	CONS 72B	Advanced Low Voltage Building Systems II	*
Job Completion Activities	CONS 72B	Advanced Low Voltage Building Systems II	*
Retrofit Installation Site Survey, Planning and Documentation	CONS 72B	Advanced Low Voltage Building Systems II	*
Planning Retrofit Installations	CONS 72B	Advanced Low Voltage Building Systems II	*
Site Survey	CONS 72B	Advanced Low Voltage Building Systems II	*
Documentation	CONS 72B	Advanced Low Voltage Building Systems II	*
Addenda	CONS 72B	Advanced Low Voltage Building Systems II	*
Liens	CONS 72B	Advanced Low Voltage Building Systems II	*
Stop Work Orders	CONS 72B	Advanced Low Voltage Building Systems II	*
Request For Information	CONS 72B	Advanced Low Voltage Building Systems II	*
Change Order	CONS 72B	Advanced Low Voltage Building Systems II	*
Project log	CONS 72B	Advanced Low Voltage Building Systems II	*
Certificate of Completion	CONS 72B	Advanced Low Voltage Building Systems II	*
Operation and Maintenance Manuals (O&M)	CONS 72B	Advanced Low Voltage Building Systems II	*
Activation/Deactivation Report	CONS 72B	Advanced Low Voltage Building Systems II	*
Wiring Certification Diagrams and Lists	CONS 72B	Advanced Low Voltage Building Systems II	*
Maintenance and Repair	CONS 72B	Advanced Low Voltage Building Systems II	*
Introduction	CONS 72B	Advanced Low Voltage Building Systems II	*
Maintenance Vs. Repair	CONS 72B	Advanced Low Voltage Building Systems II	*
Failures and Causes	CONS 72B	Advanced Low Voltage Building Systems II	*
Environmental Conditions	CONS 72B	Advanced Low Voltage Building Systems II	*
Improper Installations	CONS 72B	Advanced Low Voltage Building Systems II	*
Power Quality Considerations	CONS 72B	Advanced Low Voltage Building Systems II	*
Electrostatic Discharge	CONS 72B	Advanced Low Voltage Building Systems II	*
Grounding	CONS 72B	Advanced Low Voltage Building Systems II	*
Isolation	CONS 72B	Advanced Low Voltage Building Systems II	*
Guidelines for Preventing Component Damage	CONS 72B	Advanced Low Voltage Building Systems II	*
Operator Error	CONS 72B	Advanced Low Voltage Building Systems II	*
Test Equipment	CONS 72B	Advanced Low Voltage Building Systems II	*

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CURRICULM ITEM		SDCCD COURSE ID	COURSE TITLE	LEC/LAB HOURS
	Common Causes of Faults	CONS 72B	Advanced Low Voltage Building Systems II	*
	Shorts, Opens, Grounds, and Mechanical Faults	CONS 72B	Advanced Low Voltage Building Systems II	*
Troubleshooting, A Systematic Approach		CONS 72B	Advanced Low Voltage Building Systems II	*
	Customer Interface	CONS 72B	Advanced Low Voltage Building Systems II	*
	Physical Systems Examination and Analysis	CONS 72B	Advanced Low Voltage Building Systems II	*
	Manufacturers¿ Troubleshooting Aids	CONS 72B	Advanced Low Voltage Building Systems II	*
	Wiring, Troubleshooting, and Fault Isolation Diagrams	CONS 72B	Advanced Low Voltage Building Systems II	*
	Diagnostic Equipment and Tests	CONS 72B	Advanced Low Voltage Building Systems II	*
	System/Unit Fault Isolation	CONS 72B	Advanced Low Voltage Building Systems II	*
	Power Supply and Input Voltage Troubleshooting	CONS 72B	Advanced Low Voltage Building Systems II	*
	Troubleshooting Control Circuit Switches, Relays, and Signal Generation Processing	CONS 72B	Advanced Low Voltage Building Systems II	*
	Troubleshooting Computer, Cable Lengths, Attenuation, and Impedance Problems	CONS 72B	Advanced Low Voltage Building Systems II	*
	Excessive Near-End Crosstalk and noise	CONS 72B	Advanced Low Voltage Building Systems II	*
	Troubleshooting and Testing Optical Fiber	CONS 72B	Advanced Low Voltage Building Systems II	*
Introduction to Supervision		CONS 72B	Advanced Low Voltage Building Systems II	*
	Construction industry organizational structure	CONS 72B	Advanced Low Voltage Building Systems II	*
	Leadership Skills	CONS 72B	Advanced Low Voltage Building Systems II	*
	Communication Skills	CONS 72B	Advanced Low Voltage Building Systems II	*
	Decision-Making Skills	CONS 72B	Advanced Low Voltage Building Systems II	*
Safety Issues and Regulations		CONS 72B	Advanced Low Voltage Building Systems II	*
	Responsibility/Liability of Supervisor	CONS 72B	Advanced Low Voltage Building Systems II	*
Planning Processes		CONS 72B	Advanced Low Voltage Building Systems II	*
	Scheduling	CONS 72B	Advanced Low Voltage Building Systems II	*
	Cost Control	CONS 72B	Advanced Low Voltage Building Systems II	*
Advanced Electrical Code		CONS 72B	Advanced Low Voltage Building Systems II	*
	Fire-Life-Safety Codes	CONS 72B	Advanced Low Voltage Building Systems II	*
	Electrical Code	CONS 72B	Advanced Low Voltage Building Systems II	*
	Sound-Signal Technician Code	CONS 72B	Advanced Low Voltage Building Systems II	*
	Building Code Related to the Trade	CONS 72B	Advanced Low Voltage Building Systems II	*

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