CURRICULUM/GEN ED COMMITTEE
a standing committee of the Education Advisory Committee

Agenda
February 13, 2008
Sylvania CC, Conference Rm B

Information Items from the Curriculum Office:
(These items do not require curriculum committee recommendation)

Experimental Courses:
None

Inactivated Courses:

TE 9076 Limited Maintenance Electrician (LME)
TE 9156 Commercial Lock Service and Repair
TE 9075 NEC: Limited Maintenance Electricians
TE 9233 Advanced Oil Burners
TE 9248 Shop – Commercial Refrigeration II
TE 9254 Natural Gas Equipment II
TE 9600 Electrical Safety
TE 9693 NEC for Restricted Energy Electricians
TE 9895 Supervisors Safety Training

New Business:

202. TE 9071- Electricity for Non-Electricians (ELT 110)
Course Revision – Number, Description

203. TE 97204 – OSHA 10 Hour Safety Training (ELT 120)
Course Revision – Number, Description

204. TE 9126 – Basic Programmable Controllers (ELT 125)
Course Revision – Number, Description, Requisites

205. TE 9121 – Intermediate Programmable Controllers (PC Based) (ELT 126)
Course Revision – Number, Description, Requisite

206. TE 9101 – Fiber Optics I (ELT 150)
Course Revision – Number, Description

207. TE 9102 – Fiber Optics II (ELT 151)
Course Revision – Number, Description, Requisites

208. TE 9103 – Fiber Optics: Inside/Outside Plant (ELT 152)
Course Revision – Number, Description, Requisites

209. TE 9104 – Fiber Optics: Outside Plant (ELT 153)
Course Revision – Number, Requisites

210. TE 9145- Electrical Motor Controls (ELT 201)
Course Revision – Number, Description, Outcomes

211. TE 9146 – Adjustable Speed Drive (ELT 204)
Course Revision – Number, Description, Requisites

212. TE 9072 – Electricity for the Non-Electrician II (ELT 210)
Course Revision – Number, Requisites

213. TE 9605 – OSHA 30 Hr Safety Training (ELT 220)
Course Revision – Number, Description

214. TE 9127 – Advanced Programmable Controllers (PC Based) (ELT 225)
Course Revision – Number, Description, Requisites

215. TE 9128 – Basic Human Machine Interface (HIM) Program (ELT 226)
Course Revision – Number, Requisite

216. TE 9061- National Electric Code (ELT 230)
Course Revision – Number, Description

217. TE 9083 – National Electric Code II (ELT 231)
Course Revision – Number, Description

218. TE 9201 – AMP ACT I (ELT 250)
Course Revision – Number, Description

219. TE 9202 – AMP ACT II (ELT 251)
Course Revision – Number, Description, Requisite

220. TE 9203 – AMP ACT III (ELT 252)
Course Revision – Number, Description, Requisites

221. TE 9700 – Electrical Code Changes (ELT 280)
Course Revision – Number, Description

222. TE 9701 – NEC Ratings (ELT 281)
Course Revision – Number, Description

223. TE 9702 – Grounding and Bonding (ELT 282)
Course Revision – Number, Description

224. TE 9715 – Code Calculations (ELT 283)
Course Revision – Number, Description

225. TE 9731 – Motor Controls (ELT 284)
Course Revision – Number, Description

TE 9110 – Intro to FMT (FMT 100)
Course Number Change only

TE 9242 – Refrigeration I (FMT 101)
Course Number Change only

225 a. TE 9243 – Refrigeration II (FMT 102)
Course Revision - Number, Requiistes

226. TE 9244 – Refrigeration III (FMT 103)
Course Revision – Number, Requisites

TE 9237 – Refrigeration Electrical I (FMT 111)
Course Number Change only

227. TE 9238 – Refrigeration Electrical II (FMT 112)
Course Revision – Number, Requisites

228. TE 9239 – Refrigeration Electrical III (FMT 113)
Course Revision – Number, Requisites

TE 9141 – Water Treatment & Distribution (FMT 119)
Course Number Change only

TE 9161 – Intro to Boilers (FMT 122)
Course Number Change only

TE 9253 – Natural Gas Equipment (FMT 125)
Course Number Change only

TE 9234 – Oil Furnace Service (FMT 128)
Course Number Change only

229. TE 9155 – Lock Service and Repair (FMT 131)
Course Revision – Number, Description

230. TE 9140 – Introduction to Chiller Systems (FMT 201)
Course Revision – Number, Requisites

TE 9152 – Direct Digital Controls (FMT 202)
Course Number Change only

231. TE 9252 – Heat Pumps (FMT 204)
Course Revision – Number, Requisites

TE 9151- Pneumatic Controls (FMT 207)
Course Number Change only

232. TE 9257 – Basic HVAC/R Installation (FMT 210)
Course Revision – Number, Requisite

233. TE 9250 – Commercial Refrigeration Shop (FMT 213)
Course Revision – Number, Requisite

234. TE 9245 – Commercial Systems Design (FMT 216)
Course Revision – Number, Requisites

235. TE 9246 – Residential Systems Design (FMT 219)
Course Revision – Number, Requisites

236. TE 9163 – Intermediate Boilers (FMT 222)
Course Revision – Number, Requisites

TE 280A changing to FMT 280A

237. TE 9631 – LME Electrical I (APR 101)
Course Revision – Number, Title, Description, Outcomes

238. TE 9632 – LME Electrical II (APR 102)
Course Revision – Number, Title, Description, Requisites, Outcomes

239. TE 9633 – LME Electrical III (APR 103)
Course Revision – Number, Title, Description, Requisites, Outcomes

240. TE 9634 – LME Electrical IV (APR 104)
Course Revision – Number, Title, Description, Requisites, Outcomes

241. TE 9610 – Electrical I: 1st Year, 1st Term (APR 121)
Course Revision – Number, Title, Description, Outcomes

242. TE 9611 – Electrical II: 1st Year, 2nd Term (APR 122)
Course Revision – Number, Title, Description, Requisites, Outcomes

243. TE 9612 – Electrical III: 1st Year, 3rd Term (APR 123)
Course Revision – Number, Title, Description, Requisites, Outcomes

244. TE 9613 – Electrical IV: 2nd Year, 1st Term (APR 124)
Course Revision – Number, Title, Description, Requisites, Outcomes

245. TE 9614 – Electrical V: 2nd Year, 2nd Term (APR 125)
Course Revision – Number, Title, Description, Requisites, Outcomes

246. TE 9615 – Electrical VI: 2nd Year, 3rd Term (APR 126)
Course Revision – Number, Title, Description, Requisites, Outcomes

TE 9242 - Refrigeration I (APR 131)
Course Number change only

247. TE 9243 – Refrigeration II (APR 132)
Course Revision – Number, Requisites

248. TE 9244 - Refrigeration III (APR 133)
Course Revision - Number, Requisites

249. TE 9000 – Trades Preparation (APR 200)
Course Revision – Number, Description, Requisites

250. TE 9145 – Electrical Motor Controls (APR 201)
Course Revision – Number, Description, Requisites, Outcomes

251. TE 9636 – LME Electrical VI (APR 202)
Course Revision – Number, Title, Description, Requisites, Outcomes

252. TE 9637 – LME Electrical VII (APR 203)
Course Revision – Number, Title, Description, Requisites, Outcomes

253. TE 9638 – LME Electrical VIII (APR 204)
Course Revision – Number, Title, Description, Requisites, Outcomes

254. TE 9616 – Electrical VII: 3rd Year, 1st Term (APR 221)
Course Revision – Number, Title, Description, Requisites, Outcomes

255. TE 9617 – Electrical VIII: 3rd Year, 2nd Term (APR 222)
Course Revision – Number, Title, Requisites, Outcomes

256. TE 9618 – Electrical IX- 3rd Year, 3rd Term (APR 223)
Course Revision – Number, Title, Description, Requisites, Outcomes

257. TE 9619 – Electrical X: 4th Year, 1st Term (APR 224)
Course Revision – Number, Title, Description, Requisites, Outcomes

258. TE 9620 – Electrical XI: 4th Year, 2nd Term (APR 225)
Course Revision – Number, Title, Description, Requisites, Outcomes

259. TE 9621 – Electrical XII: 4th Year, 3rd Term (APR 226)
Course Revision – Number, Title, Description, Requisites, Outcomes

260. TE 9061 – National Electrical Code
Course Revision – Number, Description

261. TE 9083 – National Electrical Code II
Course Revision – Number, Description

262. APR 100 – Exploring Trades & Apprenticeship
New Course

263. APR 202 – LME Electrical Code – Level I (was TE 9636)
Contact/Credit Hour Change

264. APR 203 – LME: Electrical Code – Level II (was TE 9637)
Contact/Credit Hour Change

265. APR 204 – LME: Electrical Code – Level III (was TE 9638)
Contact/Credit Hour Change

266. APR 224 – Electrical Code – Level I (was TE 9619)
Contact/Credit Hour Change

267. APR 225 – Electrical Code – Level II (was TE 9620)
Contact/Credit Hour Change

268. APR 226 – Electrical Code – Level III (was TE 9621)
Contact/Credit Hour Change

TE Course Subject and Number Changes			
TE 280A Cooperative Work Experience	FMT 280A Cooperative Work Experience		
TE 9242 Refrigeration I	APR 131 Refrigeration I	FMT 101 Refrigeration I	
TE 9237 Refrigeration Electrical I	FMT 111 Refrigeration Electrical I		
TE 9110 Introduction to Facilities Maintenance Systems	FMT 100 Introduction to Facilities Maintenance Systems		
TE 9141 Water Treatment and Distribution	FMT 119 Water Treatment and Distribution		
TE 9151 Pneumatic Controls	FMT 207 Pneumatic Controls		
TE 9152 Direct Digital Control Advanced Technology	FMT 102 Direct Digital Control Advanced Technology		
TE 9161 Introduction to Boilers	FMT122 Introduction to Boilers		
TE 9234 Oil Furnace Service	FMT 128 Oil Furnace Service		
TE 9253 Natural Gas Equipment I	FMT 125 Natural Gas Equipment I		

Curriculum Request Form
Course Revision

CHANGE:	Course Number,Description
Current Course Number:	TE 9071
Proposed Course Number:	ELT 110
Current Course Title:	Electricity for the Non-Electrician
Current Description:	Practical, hands-on application of electrical principles, practices and codes to help the non-electrician learn the basics of wiring that they encounter around the house. Safety practices will be emphasized as will basic electrical theory. After the first three class sessions, there will be minimal theory or lecture and maximum practical practice using the tools and materials that the homeowner will encounter in doing electrical work on his/her home.
Proposed Description:	Practical, hands-on application of electrical principles, practices and codes to help the non-electrician learn the basics of wiring that they encounter around the house. Safety practices will be emphasized as will basic electrical theory. After the first three class sessions, there will be minimal theory or lecture and maximum practice using tools and materials that the homeowner will encounter in doing electrical work on his/her home.
Will this impact other SACs?,Is there an impact on other SACs?:	No
Will this impact other Depts/Campuses?,Is there an impact on another dept or campus?:	No
Request Term:	summer
Requested Year:	2008
Contact Name:	Katrina Cloud
Contact E-Mail:	kcloud@pcc.edu

Curriculum Request Form
Course Revision

CHANGE:	Course Number, Course Description
Current Course Number:	TE 9704
Proposed Course Number:	ELT 120
Current Course Title:	OSHA 10 Hour Safety Training
Current Description:	Introduces OSHAs General Duty Clause 5(a)(1) General Safety and Health Provisions, Competent Person, Qualified Person, Health Hazards in Construction, Electrical, Fall Protection, Stairways and Ladders, Scaffolding, Motor Vehicles, Hand & Power Tools, and Excavations. (Awards 8 IR hours of Continuing Education Unit credits for Oregon State Electrical relicensing purposes and a 10-hour Construction Outreach Completion Card from OSHA.)
Proposed Description:	Introduces OSHAs General Duty Clause 5(a)(1) General Safety and Health Provisions, Competent Person, Qualified Person, Health Hazards in Construction, Electrical, Fall Protection, Stairways and Ladders, Scaffolding, Motor Vehicles, Hand & Power Tools, and Excavations. Awards a 10-hour Construction Outreach Completion Card from OSHA. This class can be used towards Continuing Education Units for Oregon State electrical licensing purposes.
Will this impact other SACs?,Is there an impact on other SACs?:	No
Will this impact other Depts/Campuses?,Is there an impact on another dept or campus?:	No
Request Term:	summer
Requested Year:	2008
Contact Name:	Katrina Cloud
Contact E-Mail:	kcloud@pcc.edu

Curriculum Request Form
Course Revision

CHANGE:	Course Number,Course Description, Requisites
Current Course Number:	TE 9126
Proposed Course Number:	ELT 125
Current Course Title:	Basic Programmable Controllers (PC Based)
Current Description:	Develops the student's understanding of the complete operation of a variety of programmable controllers. The applications, operations, and programming of P.C.s are the areas of study with the main emphasis on programming (Computers will be used as programmers).
Proposed Description:	Develops the student's understanding of the complete operation of a variety of programmable controllers. The applications, operations, and programming of P.C.s are the areas of study with the main emphasis on programming (Computers will be used as programmers). This class can be used towards Continuing Education Units for Oregon State electrical licensing purposes.
Current Prerequisites:	TE 9237; BA 131
Proposed Prerequisites:	(FMT 111 or TE 9237); BA 131
Will this impact other SACs?,Is there an impact on other SACs?:	No
Will this impact other Depts/Campuses?,Is there an impact on another dept or campus?:	No
Request Term:	summer
Requested Year:	2008
Contact Name:	Katrina Cloud
Contact E-Mail:	kcloud@pcc.edu

Curriculum Request Form
Course Revision

CHANGE:	Course Number,Course Description,Requisites
Current Course Number:	TE 9121
Proposed Course Number:	ELT 126
Current Course Title:	Intermediate Programmable Controllers (PC Based)
Current Description:	Presents advanced features of programmable controllers. Designing, monitoring, and editing programs with practical hands-on experiences.
Proposed Description:	Presents advanced features of programmable controllers. Designing, monitoring, and editing programs with practical hands-on experiences. This class can be used towards Continuing Education Units for Oregon State electrical licensing purposes.
Current Prerequisites:	TE 9126
Proposed Prerequisites:	ELT 125 or TE 9126
Will this impact other SACs?,Is there an impact on other SACs?:	No
Will this impact other Depts/Campuses?,Is there an impact on another dept or campus?:	No
Request Term:	summer
Requested Year:	2008
Contact Name:	Katrina Cloud
Contact E-Mail:	kcloud@pcc.edu

Curriculum Request Form
Course Revision

CHANGE:	Course Number,Course Description
Current Course Number:	TE 9101
Proposed Course Number:	ELT 150
Current Course Title:	Fiber Optics I
Current Description:	Origins of Fiber Optics and Fiber Optic solutions for communications. Introduction to design and plant cabling, cable preparation, pulling techniques, termination, splices, and cable testing. Includes cable and closure preparation, fiber cleaving and splicing.
Proposed Description:	Origins of Fiber Optics and Fiber Optic solutions for communications. Introduction to design and plant cabling, cable preparation, pulling techniques, termination, splices, and cable testing. Includes cable and closure preparation, fiber cleaving and splicing. This class can be used towards Continuing Education Units for Oregon State electrical licensing purposes.
Will this impact other SACs?,Is there an impact on other SACs?:	No
Will this impact other Depts/Campuses?,Is there an impact on another dept or campus?:	No
Request Term:	summer
Requested Year:	2008
Contact Name:	Katrina Cloud
Contact E-Mail:	kcloud@pcc.edu

Curriculum Request Form
Course Revision

CHANGE:	Course Number, Course Description, Requisites
Current Course Number:	TE 9102
Proposed Course Number:	ELT 151
Current Course Title:	Fiber Optics II
Current Description:	Develops skills in fiber optics connections and testing. Connector assembly and polishing techniques, system losses and testing. Fault location, repair and restoration are included.
Proposed Description:	Develops skills in fiber optics connections and testing. Connector assembly and polishing techniques, system losses and testing. Fault location, repair and restoration are included. This class can be used towards Continuing Education Units for Oregon State electrical licensing purposes.
Current Prerequisites:	TE 9101
Proposed Prerequisites:	ELT 150 or TE 9101
Will this impact other SACs?,Is there an impact on other SACs?:	No
Will this impact other Depts/Campuses?,Is there an impact on another dept or campus?:	No
Request Term:	summer
Requested Year:	2008
Contact Name:	Katrina Cloud
Contact E-Mail:	kcloud@pcc.edu

Curriculum Request Form
Course Revision

CHANGE:	Course Number,Course Description,Requisites
Current Course Number:	TE 9103
Proposed Course Number:	ELT 152
Current Course Title:	Fiber Optics: Inside/Outside Plant
Current Description:	Application for Ready Access; to include the use of special splicing techniques, enclosures, test sets and fault locating equipment. Placing, splicing, termination and testing of fiber optic cables in campus applications is included. Inside/Outside plant design for copper/fiber cabling and aerial application is included.
Proposed Description:	Application for Ready Access; to include the use of special splicing techniques, enclosures, test sets and fault locating equipment. Placing, splicing, termination and testing of fiber optic cables in campus applications are included. Inside/Outside plant design for copper/fiber cabling and aerial application is included. This class can be used towards Continuing Education Units for Oregon State electrical licensing purposes.
Current Prerequisites:	TE 9102
Proposed Prerequisites:	ELT 151 or TE 9102
Will this impact other SACs?,Is there an impact on other SACs?:	No
Will this impact other Depts/Campuses?,Is there an impact on another dept or campus?:	No
Request Term:	summer
Requested Year:	2008
Contact Name:	Katrina Cloud
Contact E-Mail:	kcloud@pcc.edu

Curriculum Request Form
Course Revision

CHANGE:	Course Number,Requisites
Current Course Number:	TE 9104
Proposed Course Number:	ELT 153
Current Course Title:	Fiber Optics: Outside Plant
Current Prerequisites:	TE 9102
Proposed Prerequisites:	ELT 151 or TE 9102
Will this impact other SACs?,Is there an impact on other SACs?:	No
How other SACs may be impacted:	
Will this impact other Depts/Campuses?,Is there an impact on another dept or campus?:	No
Request Term:	summer
Requested Year:	2008
Contact Name:	Katrina Cloud
Contact E-Mail:	kcloud@pcc.edu

Curriculum Request Form
Course Revision

CHANGE:	Course Number,Course Description,Learning Outcomes
Current Course Number:	TE 9145
Proposed Course Number:	ELT 201
Current Course Title:	Electrical Motor Control
Current Description:	Provides the knowledge and skills needed to service electric motors. Focuses on the operation and installation of control systems, specifically motor starters and controllers. Includes 16 Code Related hours of Continuing Education Unit credits for Oregon State regimenting purposes.
Proposed Description:	Course provides knowledge and skills needed to design, install, maintain, service and troubleshoot electric motors. Students will focus on the operation and installation of control systems; specifically motor starters and controllers. Electromagnetic controls, motors and transformers will also be covered. Lab activities will utilize electrical test equipment to analyze electric motor control malfunctions. This class can be used towards Continuing Education Units for Oregon State electrical licensing purposes.
Reason for Description Change:	To align with statewide apprenticeship degree
Current Learning Outcomes:	Demonstrate knowledge of the general principles of electric motor control and the common types of starters. Demonstrate understanding of the function of control pilot devices as a component of motor control. Demonstrate knowledge of the common electrical symbols, connections and layouts. Demonstrate understanding and ability to install or repair selected basic control circuits. Demonstrate understanding of the reasons for the use of reduced voltage starting. Demonstrate understanding of the operating principles on

which the squirrel cage motor is based

Demonstrate understanding of the advantages of an AC three-phase wound rotor, or slip ring, induction motor.

Demonstrate understanding of the operation and application of a synchronous motor.

Demonstrate understanding of direct-current motors and their use in a variety of industries.

Demonstrate understanding of several methods of repeated closure of a circuit.

Demonstrate knowledge of the installation of motor drives and how to calculate the size required.

Proposed Learning Outcomes:

Explain the general principles of electric motor control and the common types of starters.

Demonstrate the function of control pilot devices as a component of motor control.

Identify the common electrical symbols, connections and layouts.

Recognize electrical schematics, wiring devices and control diagrams.

Install and repair basic circuits.

Explain the reasons for the use of reduced voltage starting.

Demonstrate safe working conditions in accordance with state and federal regulations.

Describe the operating principles on which the squirrel cage motor is based.

Describe the operation of control systems, motor starters and controllers.

Discuss the advantages of an AC three-phase wound motor, slip ring, and induction motor.

Explain the operation and application of a synchronous motor.

	Discuss direct-current motors and their use in a variety of industries. Install motor drives. Calculate the required size motor for installation of assigned tasks. Discuss electromagnetic controls, motors and transformers Utilize electrical test equipment to analyze electric motor control malfunctions. Perform motor maintenance.
Reason for Learning Outcomes Change:	The Trades & Industry Department is participating in a new state-wide apprenticeship degree pathway. The Trades & Industry Department currently uses Trade Extension (TE) as their subject code for three separate programs: apprenticeship, facilities maintenance technology and electrical trades. The TE structure is being broken into three new subject codes: APR for Apprenticeship, FMT for Facilities Maintenance Technology and ELT for Electrical Trades. All courses will move to 100 and 200 level course numbering. This framework provides additional access to courses, compliance with revised OAR's, alignment with BOLI standards, transferability of credit among Oregon colleges - all in an effort to increase degree completion. In addition, students will be able to locate classes more efficiently with the new indicators.
Will this impact other SACs?,Is there an impact on other SACs?:	No
Will this impact other Depts/Campuses?,Is there an impact on another dept or campus?:	No
Request Term:	summer
Requested Year:	2008
Contact Name:	Katrina Cloud
Contact E-Mail:	kcloud@pcc.edu

Curriculum Request Form
Course Revision

CHANGE:	Course Number, Course Description, Prerequisites
Current Course Number:	TE 9146
Proposed Course Number:	ELT 204
Current Course Title:	Adjustable Speed Drive
Current Description:	Theory, operation, installation and maintenance of adjustable speed motor drives. Drive applications and selection for industrial, utility, and commercial structures.
Proposed Description:	Covers theory, operation, installation and maintenance of adjustable speed motor drives. Drive applications and selection for industrial, utility, and commercial structures. This class can be used towards Continuing Education Units for Oregon State electrical licensing purposes.
Current Prerequisites:	None
Proposed Prerequisites:	MTH 20; (WR 90 or ENL 262); (RD 90 or ENL 260)
Will this impact other SACs?,Is there an impact on other SACs?:	No
Will this impact other Depts/Campuses?,Is there an impact on another dept or campus?:	No
Request Term:	Select One
Requested Year:	2008
Contact Name:	Katrina Cloud
Contact E-Mail:	kcloud@pcc.edu

Curriculum Request Form
Course Revision

CHANGE:	Course Number,Requisites
Current Course Number:	TE 9072
Proposed Course Number:	ELT 210
Current Course Title:	Electricity for the Non-Electrician II
Current Prerequisites:	TE 9071
Proposed Prerequisites:	ELT 110 or TE 9071
Will this impact other SACs?,Is there an impact on other SACs?:	No
How other SACs may be impacted:	
Will this impact other Depts/Campuses?,Is there an impact on another dept or campus?:	No
Request Term:	summer
Requested Year:	2008
Contact Name:	Katrina Cloud
Contact E-Mail:	kcloud@pcc.edu

Curriculum Request Form
Course Revision

CHANGE:	Course Number, Course Description
Current Course Number:	TE 9605
Proposed Course Number:	ELT 220
Current Course Title:	OSHA 30 Hr Safety Training
Current Description:	Course for those wanting a safe working environment and who have compliance and training responsibilities. Covers how to establish employee protection programs and to inform and train employees properly. Includes intro to OSHA, general safety and health provision, Hazcom, health hazards in construction, stairways and ladders, motor vehicles, materials handling, hand and power tools, scaffolding, fire protection, excavations, confined space entry, fall protection, personal protective and lifesaving equipment and electrical safety.
Proposed Description:	Emphasizes safe working environment targeting people who have compliance and training responsibilities. Covers how to establish employee protection programs and to inform and train employees properly. Includes intro to OSHA, general safety and health provision, Hazcom, health hazards in construction, stairways and ladders, motor vehicles, materials handling, hand and power tools, scaffolding, fire protection, excavations, confined space entry, fall protection, personal protective and lifesaving equipment and electrical safety. Awards a 30 hour OSHA safety card upon successful completion of course. This class can be used towards Continuing Education Units for Oregon State electrical licensing purposes.
Will this impact other SACs?,Is there an impact on other SACs?:	No
Will this impact other Depts/Campuses?,Is there an impact on another dept or campus?:	No
Request Term:	summer
Requested Year:	2008
Contact Name:	Katrina Cloud
Contact E-Mail:	kcloud@pcc.edu

Curriculum Request Form
Course Revision

CHANGE:	Course Number,Course Description,Requisites
Current Course Number:	TE 9127
Proposed Course Number:	ELT 225
Current Course Title:	Advanced Programmable Controllers (PC Based)
Current Description:	Advanced features including designing, monitoring, troubleshooting and editing techniques with practical hands-on experience.
Proposed Description:	Advanced features including designing, monitoring, troubleshooting and editing techniques with practical hands-on experience. This class can be used towards Continuing Education Units for Oregon State electrical licensing purposes.
Current Prerequisites:	TE 9121
Proposed Prerequisites:	ELT 126 or TE 9121
Will this impact other SACs?,Is there an impact on other SACs?:	No
Will this impact other Depts/Campuses?,Is there an impact on another dept or campus?:	No
Request Term:	summer
Requested Year:	2008
Contact Name:	Katrina Cloud
Contact E-Mail:	kcloud@pcc.edu

Curriculum Request Form
Course Revision

CHANGE:	Course Number, Requisites
Current Course Number:	TE 9128
Proposed Course Number:	ELT 226
Current Course Title:	Basic Human Machine Interface (HMI) Program
Current Description:	Develops the student's understanding of the basic operation and programming techniques of Human Machine Interface Devices. The applications, operations, and programming of HMIs are the areas of study with the main emphasis on programming. Computers will be used to program.
Current Prerequisites:	TE 9127
Proposed Prerequisites:	ELT 225 or TE 9127
Will this impact other SACs?,Is there an impact on other SACs?:	No
Will this impact other Depts/Campuses?,Is there an impact on another dept or campus?:	No
Request Term:	summer
Requested Year:	2008
Contact Name:	Katrina Cloud
Contact E-Mail:	kcloud@pcc.edu

Curriculum Request Form
Course Revision

CHANGE:	Course Number, Course Description
Current Course Number:	TE 9061
Proposed Course Number:	ELT 230
Current Course Title:	National Electrical Code
Current Description:	Instructs the electrical professional WHERE and HOW to find required information in the NEC book, demonstrating how the various articles work together to provide complete information on a subject. Most code articles (90 through 450) will be explained in detail. National Electric Code II (advanced) is the sequel to this course.
Proposed Description:	Instructs the electrical professional WHERE and HOW to find required information in the NEC book, demonstrating how the various articles work together to provide complete information on a subject. Most code articles (90 through 450) will be explained in detail. This class can be used towards Continuing Education Units for Oregon State electrical licensing purposes. National Electric Code II (advanced) is the sequel to this course.
Will this impact other SACs?,Is there an impact on other SACs?:	No
Will this impact other Depts/Campuses?,Is there an impact on another dept or campus?:	No
Request Term:	summer
Requested Year:	2008
Contact Name:	Katrina Cloud
Contact E-Mail:	kcloud@pcc.edu

Curriculum Request Form
Course Revision

CHANGE:	Course Number, Course Description
Current Course Number:	TE 9083
Proposed Course Number:	ELT 231
Current Course Title:	National Electrical Code II
Current Description:	Prepares electricians for state examinations as prescribed by Oregon State Building Codes Division. Includes code explanations and applications.
Proposed Description:	Prepares electricians for state examinations as prescribed by Oregon State Building Codes Division. Includes code explanations and applications. This class can be used towards Continuing Education Units for Oregon State electrical licensing purposes.
Will this impact other SACs?,Is there an impact on other SACs?:	No
Will this impact other Depts/Campuses?,Is there an impact on another dept or campus?:	No
Request Term:	summer
Requested Year:	2008
Contact Name:	Katrina Cloud
Contact E-Mail:	kcloud@pcc.edu

Curriculum Request Form
Course Revision

CHANGE:	Course Number, Course Description
Current Course Number:	TE 9201
Proposed Course Number:	ELT 250
Current Course Title:	AMP ACT I
Current Description:	Provides individuals with the necessary level of knowledge needed for an entry-level position within the structure/premise cabling industry. Participants receive an in-depth understanding of the established ISO/IEC 11801, ANSI/TIA/EIA 568B industry standards. Participants who pass the exam at the end of the course will receive their AMP ACT I Certification. Participants learn how to correctly use a punch down tool; punch down various types of cables onto 110-style data patch panels, 110-style rack mount voice blocks, AMP communication outlets; termination methods for category 5e and category 6 jacks; application use and termination methods for correctly installing 4-pair UTP category 5e rated cable; termination methods for AMPs oven cure and light crimp style ST connectors; and termination methods for AMPs light crimp plus pre-polished SC style connectors.
Proposed Description:	Provides individuals with the necessary level of knowledge needed for an entry-level position within the structure/premise cabling industry. Participants receive an in-depth understanding of the established ISO/IEC 11801, ANSI/TIA/EIA 568B industry standards. Participants who pass the exam at the end of the course will receive their AMP ACT I Certification. Participants learn how to correctly use a punch down tool; punch down various types of cables onto 110-style data patch panels, 110-style rack mount voice blocks, AMP communication outlets; termination methods for category 5e and category 6 jacks; application use and termination methods for correctly installing 4-pair UTP category 5e rated cable; termination methods for AMPs oven cure and light crimp style ST connectors; and termination methods for AMPs light crimp plus pre-polished SC style connectors. This class can be used towards Continuing Education Units for Oregon State electrical licensing purposes.
Will this impact other SACs?,Is there an impact on other SACs?:	No
Will this impact other Depts/Campuses?,Is there an impact on another dept or campus?:	No

Request Term:	summer
Requested Year:	2008
Contact Name:	Katrina Cloud
Contact E-Mail:	kcloud@pcc.edu

Curriculum Request Form
Course Revision

CHANGE:	Course Number, Course Description, Requisites
Current Course Number:	TE 9202
Proposed Course Number:	ELT 251
Current Course Title:	AMP ACT II
Current Description:	Prepares participants to take the exam required for AMP ACT II certification. The training teaches how to certify and document twisted pair and optical cable plants based on established industry standards. Standards studied include the ISO/IEC 11801, TSB067 and TSB095. Learn testing of common and uncommon problems found in LAN-based systems within the premise/structured cabling industry. Participants will test and certify category 5E, 6, shielded Cat 5e, and Fiber Optic circuits using appropriate test equipment including level III copper testers, optical power meters, ITDRs, and visual fault locators. Will be required to troubleshoot various problems within a cable plant.
Proposed Description:	Prepares participants to take the exam required for AMP ACT II certification. Teaches how to certify and document twisted pair and optical cable plants based on established industry standards. Standards studied include the ISO/IEC 11801, TSB067 and TSB095. Learn testing of common and uncommon problems found in LAN-based systems within the premise/structured cabling industry. Participants will test and certify category 5E, 6, shielded Cat 5e, and Fiber Optic circuits using appropriate test equipment including level III copper testers, optical power meters, ITDRs, and visual fault locators. Will be required to troubleshoot various problems within a cable plant. This class can be used towards Continuing Education Units for Oregon State electrical licensing purposes.
Current Prerequisites:	TE 9201
Proposed Prerequisites:	ELT 250 or TE 9201
Will this impact other SACs?,Is there an impact on other SACs?:	No
Will this impact other Depts/Campuses?,Is there an	No

impact on another dept or campus?:	
Request Term:	summer
Requested Year:	2008
Contact Name:	Katrina Cloud
Contact E-Mail:	kcloud@pcc.edu

Curriculum Request Form
Course Revision

CHANGE:	Course Number, Course Description, Requisites
Current Course Number:	TE 9203
Proposed Course Number:	ELT 252
Current Course Title:	AMP ACT III
Current Description:	Prepares the student to handle the many design criteria decisions associated with premises cabling systems. Course progresses through a step-by-step process from the initial design analysis through the final project presentation. Emphasizes design parameters and guidelines of the ANSI/TIA/EIA 568B, 569, 606 and 607 as well as ISO standards. Decisions a designer makes regarding network platforms and technologies, cabling architectures, and media selection are discussed in detail. Design several different systems including campus drawings, floor plan layouts, telecommunication room layout, and rack layout design, intra-building backbone elevations, and the development of a bill of materials. Present design solutions to the class and each proposal will be discussed in an open forum.
Proposed Description:	Prepares the student to handle the many design criteria decisions associated with premises cabling systems. Course progresses through a step-by-step process from the initial design analysis through the final project presentation. Emphasizes design parameters and guidelines of the ANSI/TIA/EIA 568B, 569, 606 and 607 as well as ISO standards. Decisions a designer makes regarding network platforms and technologies, cabling architectures, and media selection are discussed in detail. Design several different systems including campus drawings, floor plan layouts, telecommunication room layout, and rack layout design, intra-building backbone elevations, and the development of a bill of materials. Present design solutions to the class and each proposal will be discussed in an open forum. This class can be used towards Continuing Education Units for Oregon State electrical licensing purposes.
Current Prerequisites:	TE 9202
Proposed Prerequisites:	ELT 251 or TE 9202

Will this impact other SACs?,Is No

there an impact on other SACs?:	
Will this impact other Depts/Campuses?,Is there an impact on another dept or campus?:	No
Request Term:	summer
Requested Year:	2008
Contact Name:	Katrina Cloud
Contact E-Mail:	kcloud@pcc.edu

Curriculum Request Form
Course Revision

CHANGE:	Course Number, Course Description
Current Course Number:	TE 9700
Proposed Course Number:	ELT 280
Current Course Title:	Electrical Code Changes
Current Description:	Emphasizes how code changes from the previous adopted code differs from the newly adopted codes. Meets requirements as prescribed by the State Electrical Licensing Board.
Proposed Description:	Emphasizes how code changes from the previous adopted code differs from the newly adopted codes. This class can be used towards Continuing Education Units for Oregon State electrical licensing purposes.
Will this impact other SACs?,Is there an impact on other SACs?:	No
Will this impact other Depts/Campuses?,Is there an impact on another dept or campus?:	No
Request Term:	summer
Requested Year:	2008
Contact Name:	Katrina Cloud
Contact E-Mail:	kcloud@pcc.edu

Curriculum Request Form
Course Revision

CHANGE:	Course Number, Course Description
Current Course Number:	TE 9701
Proposed Course Number:	ELT 281
Current Course Title:	NEC Ratings
Current Description:	Includes the study and explanation of approved Underwriter labs and testing standards as related to the purchase and use of electrical equipment.
Proposed Description:	Includes the study and explanation of approved Underwriter labs and testing standards as related to the purchase and use of electrical equipment. This class can be used towards Continuing Education Units for Oregon State electrical licensing purposes.
Will this impact other SACs?,Is there an impact on other SACs?:	No
Will this impact other Depts/Campuses?,Is there an impact on another dept or campus?:	No
Request Term:	summer
Requested Year:	2008
Contact Name:	Katrina Cloud
Contact E-Mail:	kcloud@pcc.edu

Curriculum Request Form
Course Revision

CHANGE:	Course Number, Course Description
Current Course Number:	TE 9702
Proposed Course Number:	ELT 282
Current Course Title:	Grounding and Bonding
Current Description:	The study of Article 250 in the NEC. Covers what has to be grounded and bonded and standards and rules associated with such.
Proposed Description:	The study of Article 250 in the NEC. Covers what has to be grounded and bonded and standards and rules associated with such. This class can be used towards Continuing Education Units for Oregon State electrical licensing purposes.
Will this impact other SACs?,Is there an impact on other SACs?:	No
Will this impact other Depts/Campuses?,Is there an impact on another dept or campus?:	No
Request Term:	summer
Requested Year:	2008
Contact Name:	Katrina Cloud
Contact E-Mail:	kcloud@pcc.edu

Curriculum Request Form
Course Revision

CHANGE:	Course Number, Course Description
Current Course Number:	TE 9715
Proposed Course Number:	ELT 283
Current Course Title:	Code Calculations
Current Description:	Provides licensed electricians with current National Electric Code procedures on how to calculate electrical loads and applications. Includes tables to calculate loads and proper use of applications.
Proposed Description:	Provides licensed electricians with current National Electric Code procedures on how to calculate electrical loads and applications. Includes tables to calculate loads and proper use of applications. This class can be used towards Continuing Education Units for Oregon State electrical licensing purposes.
Will this impact other SACs?,Is there an impact on other SACs?:	No
Will this impact other Depts/Campuses?,Is there an impact on another dept or campus?:	No
Request Term:	summer
Requested Year:	2008
Contact Name:	Katrina Cloud
Contact E-Mail:	kcloud@pcc.edu

Curriculum Request Form
Course Revision

CHANGE:	Course Number, Course Description
Current Course Number:	TE 9731
Proposed Course Number:	ELT 284
Current Course Title:	Motor Controls
Current Description:	Training focuses on code articles related to motor controlled systems, starters, controllers and transformers. Safety also covered.
Proposed Description:	Training focuses on code articles related to motor controlled systems, starters, controllers and transformers. Safety also covered. This class can be used towards Continuing Education Units for Oregon State electrical licensing purposes.
Will this impact other SACs?,Is there an impact on other SACs?:	No
Will this impact other Depts/Campuses?,Is there an impact on another dept or campus?:	No
Request Term:	summer
Requested Year:	2008
Contact Name:	Katrina Cloud
Contact E-Mail:	kcloud@pcc.edu

Curriculum Request Form
Course Revision

CHANGE:	Course Number, Requisites
Current Course Number:	TE 9243
Proposed Course Number:	FMT 102
Current Course Title:	Refrigeration II
Current Prerequisites:	TE 9242
Proposed Prerequisites:	FMT 101, APR 131 or TE 9242
Will this impact other SACs?,Is there an impact on other SACs?:	No
How other SACs may be impacted:	
Will this impact other Depts/Campuses?,Is there an impact on another dept or campus?:	No
How other Depts/Campuses will be impacted:	
Request Term:	summer
Requested Year:	2008
Contact Name:	Katrina Cloud
Contact E-Mail:	kcloud@pcc.edu

Curriculum Request Form
Course Revision

CHANGE:	Course Number, Requisites
Current Course Number:	TE 9244
Proposed Course Number:	FMT 103
Current Course Title:	Refrigeration III
Current Prerequisites:	TE 9242 or TE 9243
Proposed Prerequisites:	(FMT 101, APR 131 or TE 9242); (FMT 102, APR 132 or TE 9243)
Will this impact other SACs?,Is there an impact on other SACs?:	No
How other SACs may be impacted:	
Will this impact other Depts/Campuses?,Is there an impact on another dept or campus?:	No
Request Term:	summer
Requested Year:	2008
Contact Name:	Katrina Cloud
Contact E-Mail:	kcloud@pcc.edu

Curriculum Request Form
Course Revision

CHANGE:	Course Number,Requisites
Current Course Number:	TE 9238
Proposed Course Number:	FMT 112
Current Course Title:	Refrigeration Electrical II
Current Prerequisites:	TE 9237
Proposed Prerequisites:	FMT 111 or TE 9237
Will this impact other SACs?,Is there an impact on other SACs?:	No
How other SACs may be impacted:	
Will this impact other Depts/Campuses?,Is there an impact on another dept or campus?:	No
Request Term:	summer
Requested Year:	2008
Contact Name:	Katrina Cloud
Contact E-Mail:	kcloud@pcc.edu

Curriculum Request Form
Course Revision

CHANGE:	Course Number,Requisites
Current Course Number:	TE 9239
Proposed Course Number:	FMT 113
Current Course Title:	Refrigeration Electrical III
Current Prerequisites:	TE 9238
Proposed Prerequisites:	FMT 112 or TE 9238
Will this impact other SACs?,Is there an impact on other SACs?:	No
How other SACs may be impacted:	
Will this impact other Depts/Campuses?,Is there an impact on another dept or campus?:	No
Request Term:	summer
Requested Year:	2008
Contact Name:	Katrina Cloud
Contact E-Mail:	kcloud@pcc.edu

Curriculum Request Form
Course Revision

CHANGE:	Course Number, Course Description
Current Course Number:	TE 9155
Proposed Course Number:	FMT 131
Current Course Title:	Lock Service and Repair
Current Description:	Maintaining residential and commercial locks and related hardware. Includes basic operating principles of cylinders, types of locking mechanisms, desk type locks, and master key systems.
Proposed Description:	Covers maintaining residential and commercial locks and related hardware. Includes basic operating principles of cylinders, types of locking mechanisms, desk type locks, and master key systems.
Will this impact other SACs?,Is there an impact on other SACs?:	No
How other SACs may be impacted:	
Will this impact other Depts/Campuses?,Is there an impact on another dept or campus?:	No
Request Term:	summer
Requested Year:	2008
Contact Name:	Katrina Cloud
Contact E-Mail:	kcloud@pcc.edu

Curriculum Request Form
Course Revision

CHANGE:	Course Number,Requisites
Current Course Number:	TE 9140
Proposed Course Number:	FMT 201
Current Course Title:	Introduction to Chiller Systems
Current Prerequisites:	TE 9244
Proposed Prerequisites:	FMT 103, APR 133 or TE 9244
Will this impact other SACs?,Is there an impact on other SACs?:	No
How other SACs may be impacted:	
Will this impact other Depts/Campuses?,Is there an impact on another dept or campus?:	No
How other Depts/Campuses will be impacted:	
Request Term:	summer
Requested Year:	2008
Contact Name:	Katrina Cloud
Contact E-Mail:	kcloud@pcc.edu

Curriculum Request Form
Course Revision

CHANGE:	Course Number, Requisites
Current Course Number:	TE 9252
Proposed Course Number:	FMT 204
Current Course Title:	Heat Pumps
Current Prerequisites:	TE 9244
Proposed Prerequisites:	FMT 103, APR 133 or TE 9244
Will this impact other SACs?,Is there an impact on other SACs?:	No
Will this impact other Depts/Campuses?,Is there an impact on another dept or campus?:	No
Request Term:	summer
Requested Year:	2008
Contact Name:	Katrina Cloud

Curriculum Request Form
Course Revision

CHANGE:	Course Number, Requisites
Current Course Number:	TE 9257
Proposed Course Number:	FMT 210
Current Course Title:	Basic HVAC/R Installation & Techniques
Current Prerequisites:	TE 9238; TE 9243
Proposed Prerequisites:	(FMT 112 or TE 9238); (FMT 102, APR 132 or TE 9243)
Will this impact other SACs?,Is there an impact on other SACs?:	No
Will this impact other Depts/Campuses?,Is there an impact on another dept or campus?:	No
Request Term:	summer
Requested Year:	2008
Contact Name:	Katrina Cloud
Contact E-Mail:	kcloud@pcc.edu

Curriculum Request Form
Course Revision

CHANGE:	Course Number, Requisites
Current Course Number:	TE 9250
Proposed Course Number:	FMT 213
Current Course Title:	Commercial Refrigeration Shop
Current Prerequisites:	TE 9238; TE 9243
Proposed Prerequisites:	(FMT 112 or TE 9238); (FMT 102, APR 132 or TE 9243)
Will this impact other SACs?,Is there an impact on other SACs?:	No
Will this impact other Depts/Campuses?,Is there an impact on another dept or campus?:	No
Request Term:	summer
Requested Year:	2008
Contact Name:	Katrina Cloud
Contact E-Mail:	kcloud@pcc.edu

Curriculum Request Form
Course Revision

CHANGE:	Course Number, Requisites
Current Course Number:	TE 9245
Proposed Course Number:	FMT 216
Current Course Title:	Commercial Systems Design
Current Prerequisites:	TE 9244
Proposed Prerequisites:	FMT 103, APR 133 or TE 9244
Will this impact other SACs?,Is there an impact on other SACs?:	No
How other SACs may be impacted:	
Will this impact other Depts/Campuses?,Is there an impact on another dept or campus?:	No
Request Term:	summer
Requested Year:	2008
Contact Name:	Katrina Cloud
Contact E-Mail:	kcloud@pcc.edu

Curriculum Request Form
Course Revision

CHANGE:	Course Number, Requisites
Current Course Number:	TE 9246
Proposed Course Number:	FMT 219
Current Course Title:	Residential Systems Design
Current Prerequisites:	TE 9244
Proposed Prerequisites:	FMT 103, APR 133 or TE 9244
Will this impact other SACs?,Is there an impact on other SACs?:	No
How other SACs may be impacted:	
Will this impact other Depts/Campuses?,Is there an impact on another dept or campus?:	No
Request Term:	Select One
Requested Year:	2008
Contact Name:	Katrina Cloud
Contact E-Mail:	kcloud@pcc.edu

Curriculum Request Form
Course Revision

CHANGE:	Course Number, Requisites
Current Course Number:	TE 9163
Proposed Course Number:	FMT 222
Current Course Title:	Intermediate Boilers
Current Prerequisites:	TE 9161
Proposed Prerequisites:	FMT 122 or TE 9161
Will this impact other SACs?,Is there an impact on other SACs?:	No
How other SACs may be impacted:	
Will this impact other Depts/Campuses?,Is there an impact on another dept or campus?:	No
Request Term:	summer
Requested Year:	2008
Contact Name:	Katrina Cloud
Contact E-Mail:	kcloud@pcc.edu

Curriculum Request Form
Course Revision

CHANGE:	Course Number,Course Title,Course Description,Learning Outcomes
Current Course Number:	TE 9631
Proposed Course Number:	APR 101
Current Course Title:	LME Electrical I
Proposed Course Title:	LME: Electrical Theory Fundamentals
Proposed Transcript Title:	LME: Elect. Theory Fundamental
Reason for Title Change:	To align with statewide apprenticeship degree
Current Description:	Includes math for computing values of voltage, amperage, resistance and power plus conductors, wire sizes and basic voltage drop calculations in a circuit. Covers magnetism and the generation of electro-magnetic force applied to motors, transformers, inductors and capacitors. General wiring methods conduit and fittings, over current protection, and lighting fundamentals are presented. Industrial safety emphasized.
Proposed Description:	Covers electrical theory, math for computing the values of voltage, amperage, resistance and power, various types of electrical circuits (series, parallel, combination) when applying Ohm's Law. Introduces electrical safety, conductors, wire sizes and their application as per the American Wire Gauge (AWG) Table. The principles of voltage drop, efficiency and cost of electrical energy will also be covered.
Reason for Description Change:	To align with statewide apprenticeship degree
Current Learning Outcomes:	Student will discuss the relationship of voltage, current and resistance in an electric circuit and use of formulas to determine current, voltage and resistance. Student will demonstrate familiarity with electrical measuring instruments and how to use them in a circuit. The student will select conductor materials, insulation and demonstrate how to measure wire sizes. The student/apprentice will be able to calculate permissible voltage drop for circuitry.

	Demonstrate knowledge of magnetism, conductors, coils, transformers and capacitors.
	Discuss wiring applications and demonstrate uses of conduit, outlet & junction boxes for power distribution.
Proposed Learning Outcomes:	Solve mathematical formulas and equations of theory.
	Discuss the relationship of voltage, current and resistance in an electric circuit.
	Use formulas to determine current, voltage, amperage, resistance, and power.
	Explain electrical measuring instruments as applied to circuit use.
	Select conductor materials and insulation.
	Measure wire sizes.
	Calculate voltage drop.
	Explain the principles of voltage drop, efficiency and cost of electrical energy.
	Use symbols and terminology that apply to designated tasks. Explain the differences between series, parallel and combination circuits.
	Utilize the American Wire Gauge Table.
	Recognize basic electrical theory and measurement of electron theory, electrical-electronic devices and conductors.
	Define terms of series circuits, parallel circuits and capacitors.
	Explain Ohm’s law, Kirchoff's law, wire size, amp and volt meter instrumentation to include troubleshooting.
	Interpret OSHA safety standards and electrical safety codes.
Reason for Learning Outcomes Change:	The Trades & Industry Department is participating in a new state-wide apprenticeship degree pathway. The Trades & Industry Department currently uses Trade Extension (TE) as their subject code for three separate programs: apprenticeship, facilities maintenance technology and electrical trades. The TE structure is being broken into three new subject codes: APR for Apprenticeship, FMT for Facilities Maintenance Technology and

	ELT for Electrical Trades. All courses will move to 100 and 200 level course numbering. This framework provides additional access to courses, compliance with revised OAR's, alignment with BOLI standards, transferability of credit among Oregon colleges - all in an effort to increase degree completion. In addition, students will be able to locate classes more efficiently with the new indicators.
Will this impact other SACs?,Is there an impact on other SACs?:	No
Will this impact other Depts/Campuses?,Is there an impact on another dept or campus?:	No
Request Term:	summer
Requested Year:	2008
Contact Name:	Katrina Cloud
Contact E-Mail:	kcloud@pcc.edu

Curriculum Request Form
Course Revision

CHANGE:	Course Number,Course Title,Course Description,Requisites,Learning Outcomes
Current Course Number:	TE 9632
Proposed Course Number:	APR 102
Current Course Title:	LME Electrical II
Proposed Course Title:	LME: DC Motors
Reason for Title Change:	To align with statewide apprenticeship degree
Current Description:	Battery theory, application and maintenance; DC motor theory, types, applications and maintenance; magnetic theory and the generation of electro-motive force; alternating current principles; theory, types, applications and maintenance of transformers; inductance and capacitance in AC circuits; standards and issues of electrical safety. Prerequisite: TE 9631.
Proposed Description:	Covers the principles of magnets, magnetism and electromagnetism, AC/DC generators and the process of generating a voltage, DC Motors and alternating current principles which includes the components of an AC sine wave/wave-form. Electrical safety, principles of inductance, inductive reactance, capacitance and capacitive reactance, various types of capacitors, capacitor testing and their use in an industrial environment will also be discussed.
Reason for Description Change:	To align with statewide apprenticeship degree
Current Learning Outcomes:	Demonstrate knowledge of AC motors including single phase, three phase, synchronous and wound rotor. Perform amacity, overload, short circuit, and ground fault calculations. Identify types of commercial space heating equipment. Identify and discuss grounding and bonding Show skill proficiency with branch circuits, overhead, underground & temporary electrical services. Identify DC motors, controls and appropriate applications.

	Identify common lighting fixtures
Proposed Learning Outcomes:	Describe and apply basic theory of electrical sources. Describe the generation of electro-magnetic force applied to motors, transformers, inductors and capacitors. Identify DC motors, controls, appropriate applications and maintenance. Demonstrate safe working conditions in accordance with state and federal regulations. Correctly use math and theory for alternating current calculation and values of voltage. Understanding various troubleshooting techniques of testing equipment as applies to power. Explain the principles of inductance, reactance, capacitance and capacitors. Understand principles or operation for DC motors, circuit components, and conductors. Explain magnets, magnetism, electromagnetism. Discuss AC and DC generators. Discuss inductive and capacitive reactance in the plant. Recite jobsite safety requirements.
Reason for Learning Outcomes Change:	The Trades & Industry Department is participating in a new state-wide apprenticeship degree pathway. The Trades & Industry Department currently uses Trade Extension (TE) as their subject code for three separate programs: apprenticeship, facilities maintenance technology and electrical trades. The TE structure is being broken into three new subject codes: APR for Apprenticeship, FMT for Facilities Maintenance Technology and ELT for Electrical Trades. All courses will move to 100 and 200 level course numbering. This framework provides additional access to courses, compliance with revised OAR's, alignment with BOLI standards, transferability of credit among Oregon colleges - all in an effort to increase degree completion. In addition, students will be able to locate classes more efficiently with the new indicators.
Current Prerequisites:	TE 9631
Proposed Prerequisites:	APR 101

Will this impact other SACs?,Is there an impact on other SACs?:	No
Will this impact other Depts/Campuses?,Is there an impact on another dept or campus?:	No
Request Term:	summer
Requested Year:	2008
Contact Name:	Katrina Cloud
Contact E-Mail:	kcloud@pcc.edu

Curriculum Request Form
Course Revision

CHANGE:	Course Number,Course Title,Course Description,Requisites,Learning Outcomes
Current Course Number:	TE 9633
Proposed Course Number:	APR 103
Current Course Title:	LME Electrical III
Proposed Course Title:	LME: AC Motors & Transformers
Reason for Title Change:	To align with statewide apprenticeship degree
Current Description:	Introduction to the National Electric Code; electrical connections and applications; single and 3-phase motor theory, operation, types and operation; electric motor maintenance; motor control fundamentals; lighting fundamentals, applications and maintenance; safety standards and practices. Prerequisite: TE 9632.
Proposed Description:	Covers the construction, theory and application of transformers, three phase AC motors and single phase AC motors. Also covers theory and application of three phase windings namely the Delta and Wye connection. An introduction to power factor as applied to an electrical circuit; deciphering motor name plate data and electrical safety standards will be discussed.
Reason for Description Change:	To align with statewide apprenticeship degree
Current Learning Outcomes:	Discuss wiring in hazardous locations. Identify Class I and Class II locations. Discuss inductive and capacitive reactance in the plant. Show what can be done to improve power factor Describe Delta and Wye configurations. Describe PLC circuit diagrams Read selected electrical diagrams

Proposed Learning Outcomes:	Solve electrical equations using trade specific mathematical formulas. Show what can be done to improve power factor. Describe Delta and Wye configurations. Read selected electrical diagrams. Explain applications and maintenance of transformers. Discuss transformer theory, types and applications of various motors. Explain AC motors including single phase, three phase, synchronous and wound rotor. Troubleshoot and repair common motor operation. Solve problems using appropriate test equipment. Use symbols and industrial terminology. Identify electrical safety standards and practices.
Reason for Learning Outcomes Change:	The Trades & Industry Department is participating in a new state-wide apprenticeship degree pathway. The Trades & Industry Department currently uses Trade Extension (TE) as their subject code for three separate programs: apprenticeship, facilities maintenance technology and electrical trades. The TE structure is being broken into three new subject codes: APR for Apprenticeship, FMT for Facilities Maintenance Technology and ELT for Electrical Trades. All courses will move to 100 and 200 level course numbering. This framework provides additional access to courses, compliance with revised OAR's, alignment with BOLI standards, transferability of credit among Oregon colleges - all in an effort to increase degree completion. In addition, students will be able to locate classes more efficiently with the new indicators.
Current Prerequisites:	TE 9632
Proposed Prerequisites:	APR 102

Will this impact other SACs?,Is there an impact on other SACs?:	No
Will this impact other Depts/Campuses?,Is there an impact on another dept or campus?:	No
Request Term:	summer
Requested Year:	2008
Contact Name:	Katrina Cloud
Contact E-Mail:	kcloud@pcc.edu

Curriculum Request Form
Course Revision

CHANGE:	Course Number,Course Title,Course Description,Requisites,Learning Outcomes
Current Course Number:	TE 9634
Proposed Course Number:	APR 104
Current Course Title:	LME Electrical IV
Proposed Course Title:	LME: Luminaries & Equipment
Proposed Transcript Title:	
Reason for Title Change:	To align with statewide apprenticeship degree
Current Description:	Includes mechanical drives and couplings, their types, uses and maintenance; electronic theory and troubleshooting of various components including diodes, varistors, triacs, and rectifiers; electrical blueprint reading fundamentals; electrical safety; National Electric Code. Prerequisite: TE 9633.
Proposed Description:	Introduction to concept lighting, types of lighting to include fluorescent and high intensity discharge and their application in the industrial environment. Also covers various types and application of fuses, receptacles, and the wiring of; electrical safety; principles of blue print reading and components; and identification and application of solid-state components. The theory, types and application of batteries will be covered.
Reason for Description Change:	To align with statewide apprenticeship degree
Current Learning Outcomes:	Name the two main categories of bearings and cite their advantages Describe the three kinds of stresses acting on shafts Name and describe three classes of fits. Define crush and spread. Identify a principle cause of early bearing failure Describe the common methods of mounting bearings

	List six reasons for lubricating machinery Name and Describe the six major properties of lubricating oils List three functions usually performed by a coupling
Proposed Learning Outcomes:	Use basic math and algebra skills to problem solve and troubleshoot electrical issues. Describe lighting fundamentals, applications, types and maintenance. Operate PLC's according to trade-specific applications and methodology. Identify common lighting fixtures. Draw and interpret industrial blueprints and schematics. Explain electrical safety. Discuss the various types of fuses and receptacles. Explain battery theory, application and maintenance. Use different types of batteries. Use test equipment to make electrical measurements. Demonstrate appropriate use and care of trade-specific equipment. Describe various troubleshooting techniques for trade-specific equipment.
Reason for Learning Outcomes Change:	The Trades & Industry Department is participating in a new state-wide apprenticeship degree pathway. The Trades & Industry Department currently uses Trade Extension (TE) as their subject code for three separate programs: apprenticeship, facilities maintenance technology and electrical trades. The TE structure is being broken into three new subject codes: APR for Apprenticeship, FMT for Facilities Maintenance Technology and ELT for Electrical Trades. All courses will move to 100 and 200 level course numbering. This framework provides additional access to courses, compliance

	with revised OAR's, alignment with BOLI standards, transferability of credit among Oregon colleges - all in an effort to increase degree completion. In addition, students will be able to locate classes more efficiently with the new indicators.
Current Prerequisites:	TE 9633
Proposed Prerequisites:	APR 103
Will this impact other SACs?,Is there an impact on other SACs?:	No
Will this impact other Depts/Campuses?,Is there an impact on another dept or campus?:	No
Request Term:	summer
Requested Year:	2008
Contact Name:	Katrina Cloud
Contact E-Mail:	kcloud@pcc.edu

Curriculum Request Form
Course Revision

CHANGE:	Course Number, Course Title, Course Description, Learning Outcomes
Current Course Number:	TE 9610
Proposed Course Number:	APR 121
Current Course Title:	Electrical I: 1st Year, 1st Term
Proposed Course Title:	Introduction to Electricity and Circuits
Proposed Transcript Title:	Intro Electricity & Circuits
Reason for Title Change:	To align with statewide apprenticeship degree
Current Description:	Covers math for electrical applications, electron theory, Ohms Law, series circuits, parallel circuits and series/parallel circuits. Focuses on computing the values of voltage, amperage resistance and power. Includes electrical energy and power, the measurement of, and computing efficiency of same. Understand electrical conductors, wire sizes and basic voltage drop calculations in a circuit. Also, theory use and maintenance of safety as applied to the industrial plant environment.
Proposed Description:	Covers math for the electrical applications, electron theory, the application of Ohm's Law when determining the values of voltage, current resistance and power as applied to simple, series, parallel and combination circuits. Includes evaluating electrical energy/power, its measurement, cost and efficiency of same. Understanding the nature of electrical conductors which includes the circular-mil, cross-sectional-area (CSA) of conductors in mils when determining the proper size wire to be used as applied to the American Wire Gauge (AWG) Table. Also covers introduction to the concepts of "Voltage Drop" and methods used to calculate and minimize its effects in an electrical circuit. Electrical safety standards as applied to the industrial plant environment will be discussed.
Reason for Description Change:	To align with statewide apprenticeship degree
Current Learning Outcomes:	The student/apprentice will know the responsibilities of apprenticeship. Student will gain a basic understanding of electricity by explaining the behavior of electrons. Student will understand the relationship of voltage, current and

resistance in an electric circuit and use of formulas to determine current, voltage and resistance.
Student will be able to define terms, learn units of measurement, symbols and relationships.
Student/apprentice will know the relationship of voltage, current, resistance and power in a series circuit.
Student/apprentice will know the relationship of voltage, current and resistance in a parallel circuit.
The student/apprentice will think in terms of and visualize the combination of series and parallel connections.
The student/apprentice will become familiar with electrical measuring instruments and how to use them in a circuit
The student/apprentice will know conductor materials, insulation and how to measure wire sizes.
The student/apprentice will be able to calculate permissible voltage drop for circuitry.

Proposed Learning Outcomes:

Discuss the responsibilities of apprenticeship.

Discuss the behavior of electrons.

Explain the relationship of voltage, current and resistance in an electric circuit.

Solve mathematical formulas and equations of theory.
Use math formulas to determine current, voltage and resistance.

Explain voltage, current, resistance and power in a series circuit.

Use electrical terms, units of measurement and symbols.
Explain voltage, current and resistance in a parallel circuit.
Calculate voltage drop.

Recite the combination of series and parallel connections.
Use measurement quantities of Ohm's Law.

Explain electrical measuring instruments and how to use them in a circuit.

Discuss conductor materials, insulation and how to measure wire sizes.

Demonstrate safe working conditions in accordance with state and federal regulations.

Describe and recognize basic electrical theory and measurement of electron theory, electrical-electronic devices and conductors.

Define terms of series circuits, parallel circuits and capacitors.

	Understand Ohm's law, wire size, amp and volt meter instrumentation to include troubleshooting.
Reason for Learning Outcomes Change:	The Trades & Industry Department is participating in a new state-wide apprenticeship degree pathway. The Trades & Industry Department currently uses Trade Extension (TE) as their subject code for three separate programs: apprenticeship, facilities maintenance technology and electrical trades. The TE structure is being broken into three new subject codes: APR for Apprenticeship, FMT for Facilities Maintenance Technology and ELT for Electrical Trades. All courses will move to 100 and 200 level course numbering. This framework provides additional access to courses, compliance with revised OAR's, alignment with BOLI standards, transferability of credit among Oregon colleges - all in an effort to increase degree completion. In addition, students will be able to locate classes more efficiently with the new indicators.
Will this impact other SACs?,Is there an impact on other SACs?:	No
Will this impact other Depts/Campuses?,Is there an impact on another dept or campus?:	No
Request Term:	summer
Requested Year:	2008
Contact Name:	Katrina Cloud
Contact E-Mail:	kcloud@pcc.edu

Curriculum Request Form
Course Revision

CHANGE:	Course Number,Course Title,Course Description,Requisites,Learning Outcomes
Current Course Number:	TE 9611
Proposed Course Number:	APR 122
Current Course Title:	Electrical II: 1st Year, 2nd Term
Proposed Course Title:	AC/DC Motors Principles
Reason for Title Change:	To align with statewide apprenticeship degree
Current Description:	Covers the theory and application of magnetism, electro-magnetism, the generation of electromotive force, AC and DC motor principles, transformer theory, types and applications. Focuses on alternating current principles and the theories involving the properties of inductance and capacitance. Lab covers the operation and use of electrical metering and testing devices used to analyze and troubleshoot the above subject matter. Prerequisite: TE 9610.
Proposed Description:	Covers theory and application of magnets, magnetism and electromagnetism. Electrical safety, theory and application of AC/DC generators in the process of generation of an "electro-motive-force" (voltage), DC motor principles, operation and application will be included. Alternating current principles which include deciphering wave forms/sine-waves created by an AC signal plotted on a graph. The values of RMS, effective, average and instantaneous values will be studied as well as terms such as maximum value, amplitude, peak, peak to peak, cycles and alternations. Introduction to the property of inductance/inductive reactance, capacitors, capacitive reactance and their effects upon AC circuits will be discussed.
Reason for Description Change:	To align with statewide apprenticeship degree
Current Learning Outcomes:	The student/apprentice will understand the terminology, back-ground theory, and material properties necessary to understand magnetism. The student/apprentice will understand how electric current flow produces magnetism applications to conductors, coils and solenoids, and be able to apply and demonstrate the appropriate left hand rules.

The student/apprentice will understand how magnetism, conductors, coils and relative motions can product torque.
The student/apprentice will understand how a current carrying conductor/coil moving in a magnetic field can produce current flow.

The student/apprentice will understand the principles, theory, and math of Alternating Current.

The student /apprentice will understand the composition, effects, and uses of capacitors.

The student/apprentice will understand the different classes and types of AC motors, know the principles of operation of each, and be able to identify different types of motors.

The student/apprentice will understand the operation, primary/secondary relationships, construction, and efficiencies of trans-formers.

The student/apprentice will understand the construction, operation and maintenance of storage cells.
The student/apprentice will understand electrical meter movements and construction.

Proposed Learning Outcomes:

Discuss the terminology, back-ground theory, and material properties of magnetism.

Solve electrical equations using trade-specific mathematical formulas.

Apply math and theory for alternating current calculation and values of voltage.

Explain how electric current flow produces magnetism applications to conductors, coils and solenoids.

Discuss electromagnetism, AC/DC generators and AC signal. Apply the current left hand rule.

Explain how magnetism, conductors, coils and relative motions can produce torque.

Discuss how a current carrying conductor coil moving in a magnetic field can produce current flow.

Explain the principles, theory, and math of alternating current. Decipher wave forms/sine-waves and plot on a graph.

Describe the composition, effects and uses of capacitors.

Demonstrate safe working conditions in accordance with state and federal regulations.

Explain DC motor principles, operation and application.
Discuss common electrical terms and their meanings.

Explain maximum value, amplitude, peak, peak to peak, cycles and alternations.

Identify the different classes, types and operations of each type of motors.

Describe various troubleshooting techniques of trade-specific equipment.

Explain the operation, primary/secondary relationships, construction, and efficiencies of transformers.

Discuss the construction, operation and maintenance of storage cells.

Explain the property of inductance/inductive reactance, capacitors, capacitive reactance and their effects upon AC circuits

Use test equipment to make electrical measurements.
Demonstrate appropriate use and care of trade-specific equipment.

Understand the principle operation for motors, AC/DC circuit components, and conductors.

Reason for Learning Outcomes Change:

The Trades & Industry Department is participating in a new state-wide apprenticeship degree pathway. The Trades & Industry Department currently uses Trade Extension (TE) as their subject code for three separate programs: apprenticeship, facilities maintenance technology and electrical trades. The TE structure is being broken into three new subject codes: APR for Apprenticeship, FMT for Facilities Maintenance Technology and ELT for Electrical Trades. All courses will move to 100 and 200 level course numbering.

This framework provides additional access to courses, compliance with revised OAR's, alignment with BOLI standards, transferability of credit among Oregon colleges - all in an effort to increase degree completion. In addition, students will be able to locate classes more efficiently with the new indicators.

Current Prerequisites:

TE 9610

Proposed Prerequisites:	APR 121
Will this impact other SACs?,Is there an impact on other SACs?:	No
Will this impact other Depts/Campuses?,Is there an impact on another dept or campus?:	No
Request Term:	summer
Requested Year:	2008
Contact Name:	Katrina Cloud
Contact E-Mail:	kcloud@pcc.edu

Curriculum Request Form
Course Revision

CHANGE:	Course Number,Course Title,Course Description,Requisites,Learning Outcomes
Current Course Number:	TE 9612
Proposed Course Number:	APR 123
Current Course Title:	Electrical III: 1st Year, 3rd Term
Proposed Course Title:	AC Theory for Motors and Transformers
Proposed Transcript Title:	AC Theory/Motors/Transformers
Reason for Title Change:	To align with statewide apprenticeship degree
Current Description:	Introduces the definitions, fundamental rules, purpose and scope covered by the National Electric Code (NEC). Covers general wiring methods, requirements for wiring, all varieties of conduit, associated electrical devices, and fittings. Included are over-current devices and the basics of lighting fundamentals which includes fluorescent and high intensity discharge types. Also, theory use and maintenance of batteries as applied to the industrial plant environment. Prerequisite: TE 9611.
Proposed Description:	Course focuses on basic transformer theory, transformer types and applications; introduction to three phase AC motors including the squirrel cage, wound rotor and synchronous types; and various types of AC single phase motors which include split-phase, repulsion, synchronous and universal motors. Also covered, the introduction to the three phase winding connections (DELTA and WYE) their purpose and application in AC circuits; introduction of solid-state fundamentals and components; batteries, theory use, types, maintenance and application as applied to the industrial environment and electrical safety.
Reason for Description Change:	To align with statewide apprenticeship degree
Current Learning Outcomes:	The student/apprentice will understand various electrical power distribution terms and their appropriate applications as applied to Industrial, Commercial, and Residential Installations. The student/apprentice will know the different materials used as insulation on wire as well as the insulation designations. The student/apprentice will understand how the code is organized so that he/she may find information more easily in later assignments, and on the job. The student/apprentice will understand the general requirements for wiring

methods and installation.
The student/apprentice will know the definitions and the use of open wiring on insulators.
The student /apprentice will understand the construction and restrictions in the use of various cable assemblies.
The student/apprentice will know the trade name, construction and restrictions in the use of flexible cords fixture wires and their associated tables.
The student/apprentice will understand the techniques involved when making conduit installations.
The student/apprentice will know switches, outlet boxes, junction boxes and their associated proper fittings as used in electrical wiring.
The student/apprentice will know the purposes of installations and regulations for cabinets and cut out boxes.
The student will understand fuse types and standard fuse ratings for sizes required for protection of certain devices.
The student will understand what light is and how it is produced, and will know various types of lighting devices.

Proposed Learning Outcomes:

Explain electrical power distribution terms and their appropriate applications as applied to industrial, commercial, and residential installations.

Sketch transformer connections and conductor sizes for loading.

Discuss safety precautions involved in the electrical trade.

Demonstrate familiarity of industry terminology.

Explain DC motors, generators, and AC motors.

Select proper tables, equipment and material for new installations.

Use different types of batteries.

Describe battery theory, maintenance, types and applications for an industrial environment.

Explain transformer theory, types and applications.

Demonstrate safe working conditions in accordance with state and federal regulations.

Explain three phase AC motors, squirrel cage motors, wound rotor and synchronous motor types.

Identify different AC single phase motors to include split-phase, repulsion, synchronous and universal motors.

Utilize Delta and Wye in AC circuit applications.

	Discuss solid-state fundamentals. Use basic electrical safety practices. Use test equipment to make electrical measurements. Demonstrate appropriate use and care of trade-specific equipment. Troubleshoot and repair common motor operation. Solve problems using appropriate testing equipment.
Reason for Learning Outcomes Change:	The Trades & Industry Department is participating in a new state-wide apprenticeship degree pathway. The Trades & Industry Department currently uses Trade Extension (TE) as their subject code for three separate programs: apprenticeship, facilities maintenance technology and electrical trades. The TE structure is being broken into three new subject codes: APR for Apprenticeship, FMT for Facilities Maintenance Technology and ELT for Electrical Trades. All courses will move to 100 and 200 level course numbering. This framework provides additional access to courses, compliance with revised OAR's, alignment with BOLI standards, transferability of credit among Oregon colleges - all in an effort to increase degree completion. In addition, students will be able to locate classes more efficiently with the new indicators.
Current Prerequisites:	TE 9611
Proposed Prerequisites:	APR 122
Will this impact other SACs?,Is there an impact on other SACs?:	No
Will this impact other Depts/Campuses?,Is there an impact on another dept or campus?:	No
Request Term:	summer
Requested Year:	2008
Contact Name:	Katrina Cloud
Contact E-Mail:	kcloud@pcc.edu

Curriculum Request Form
Course Revision

CHANGE:	Course Number,Course Title,Course Description,Requisites,Learning Outcomes
Current Course Number:	TE 9613
Proposed Course Number:	APR 124
Current Course Title:	Electrical IV: 2nd Year, 1st Term
Proposed Course Title:	Electrical Systems Operations
Reason for Title Change:	To align with statewide apprenticeship degree
Current Description:	Covers use of AC measure instruments, transformer theory, review of Ohm's law, AC motor theory and motor controls, and general installation requirements to meet code specifications. Prerequisite: TE 9612.
Proposed Description:	Course builds on previous year’s topics. Alternating current measure instruments, test equipment, advanced motor theory, blueprint reading, electrical related materials, AC systems, advanced transformer theory, lighting, grounding and bonding, contactors, relays and general installation requirements to meet code specifications will be covered.
Reason for Description Change:	To align with statewide apprenticeship degree
Current Learning Outcomes:	Demonstrate understanding of the concept of utilizing various AC instruments, as applied to industrial, commercial, and residential installations. Demonstrate understanding of transformer theory and operation, and NEC requirements, including single phase, (3) Phase Dry Type, Liquid Filled, K - Rated, Buck Boost, and High Voltage. Demonstrate knowledge of Article 450, including Transformer Overcurrent Protection. Demonstrate understanding of AC Motor theory and operation and NEC requirements, including single phase, (3) phase, Wound Rotor, and Synchronous. Demonstrate understanding of Article 430, and be able to perform Ampacity, Overload and Branch Circuit, Short Circuit, and Ground

Fault Calculations.

Demonstrate knowledge of various types of Commercial and Industrial space heating equipment.

Demonstrate knowledge of Grounding and Bonding methods and NEC requirements, per Article 250.

Proposed Learning Outcomes:

Explain the concept of utilizing various AC instruments, as applied to industrial, commercial, and residential installations.
Use capacitance analyzer, mulitmeter and megameter AC testing instruments.

Test and troubleshoot equipment.

Explain AC motor theory, operation and NEC requirements, including single phase, three phase, wound rotor, and synchronous.

Discuss transformer theory, operation and NEC requirements, including single phase, three phase dry type, liquid filled, K-rated, buck boost, and high voltage.

Describe the construction and restrictions in the use of various cable assemblies.

Solve electrical equations using trade-specific mathematical formulas.

Explain the different materials used as insulation on wire as well as the insulation designations.

Draw and interpret industrial blueprints and schematics.
Recognize electrical schematics, wiring devices and control diagrams.

Recite the trade name, construction and restrictions in the use of flexible cords, fixture wires and their associated tables.

Use switches, outlet boxes, junction boxes and their associated fittings in electrical wiring.

Explain the purposes of installations and regulations for cabinets and cut out boxes.

Explain what light is, how it is produced, and the different types of lighting devices.

Explain grounding and bonding methods and NEC requirements, per Article 250.

	Describe various types of commercial and industrial space heating equipment. Use contactors and relays. Discuss a typical cable installation.
Reason for Learning Outcomes Change:	The Trades & Industry Department is participating in a new state-wide apprenticeship degree pathway. The Trades & Industry Department currently uses Trade Extension (TE) as their subject code for three separate programs: apprenticeship, facilities maintenance technology and electrical trades. The TE structure is being broken into three new subject codes: APR for Apprenticeship, FMT for Facilities Maintenance Technology and ELT for Electrical Trades. All courses will move to 100 and 200 level course numbering. This framework provides additional access to courses, compliance with revised OAR' s, alignment with BOLI standards, transferability of credit among Oregon colleges - all in an effort to increase degree completion. In addition, students will be able to locate classes more efficiently with the new indicators.
Current Prerequisites:	TE 9612
Proposed Prerequisites:	APR 123
Will this impact other SACs?,Is there an impact on other SACs?:	No
Will this impact other Depts/Campuses?,Is there an impact on another dept or campus?:	No
Request Term:	summer
Requested Year:	2008
Contact Name:	Katrina Cloud
Contact E-Mail:	kcloud@pcc.edu

Curriculum Request Form
Course Revision

CHANGE:	Course Number,Course Title,Course Description,Requisites,Learning Outcomes
Current Course Number:	TE 9614
Proposed Course Number:	APR 125
Current Course Title:	Electrical V: 2nd Year, 2nd Term
Proposed Course Title:	Electrical Circuits and Wiring Methods
Proposed Transcript Title:	Elect. Circuits/Wiring Methods
Reason for Title Change:	To align with statewide apprenticeship degree
Current Description:	Covers appliances, branch circuits, calculations, services, and code requirements in detail. Prerequisite: TE 9613.
Proposed Description:	Covers residential and commercial lighting, fixtures, and ballast in detail. Conductor selection, overcurrent protection, motor maintenance, calculations, controls, troubleshooting, services, construction upgrades, wire methods, tagout, lockout and appliances are included. Covers series, branch, and parallel circuits in detail. Students will also learn the basic use of a multi-meter to check for voltage, current, and resistance.
Reason for Description Change:	To align with statewide apprenticeship degree
Current Learning Outcomes:	Demonstrate understanding of the ground rules of the NEC.
	Demonstrate detailed knowledge of branch circuits, per the NEC.
	Demonstrate knowledge of overhead, underground & temporary electrical services, per the NEC.
	Demonstrate knowledge of series & parallel circuits, voltage drop, and introduction to power factor.
	Demonstrate knowledge of outside branch circuits, feeder and messenger supported wiring.
	Demonstrate knowledge of DC Motors, Generators, and AC Motors.
Proposed Learning	Calculate incandescent loads, as well as make industrial lighting

Outcomes:	calculations. Explain branch circuit terminology as outlined in the NEC. Use math formulas to solve standard ballast and electronic ballast calculations. Explain fuse types and standard fuse ratings required for protection of certain devices. Perform ampacity, overload, branch circuit, short circuit and ground fault calculations according to Article 430 specifications. Explain outside branch circuits, feeder and messenger supported wiring. Explain the general requirements for wiring methods and installation. Recite the definitions and the use of open wiring on insulators. Discuss common lighting fixtures and their applications. Solve basic short circuit calculations. Explain the applications for basic interrupting ratings, withstand capability of circuit breakers, busways and transfer switches. Explain Article 450, including transformer overcurrent protection. Explain the basics of selective coordination, component protection, principles of current limitation and series ratings of overcurrent devices. Calculate electrical construction upgrades using standard and optional methods. Describe various troubleshooting techniques of trade-specific equipment. Discuss motor theory, motor control, motor starters and calculations. Understand motor maintenance and troubleshooting including lockout and tagout requirements.
Reason for Learning Outcomes Change:	The Trades & Industry Department is participating in a new state-wide apprenticeship degree pathway. The Trades & Industry Department currently uses Trade Extension (TE) as their subject code for three separate programs: apprenticeship, facilities maintenance technology and electrical trades. The TE structure is being broken into three new subject codes: APR for

	Apprenticeship, FMT for Facilities Maintenance Technology and ELT for Electrical Trades. All courses will move to 100 and 200 level course numbering. This framework provides additional access to courses, compliance with revised OAR's, alignment with BOLI standards, transferability of credit among Oregon colleges - all in an effort to increase degree completion. In addition, students will be able to locate classes more efficiently with the new indicators.
Current Prerequisites:	TE 9613
Proposed Prerequisites:	APR 124
Will this impact other SACs?,Is there an impact on other SACs?:	No
Will this impact other Depts/Campuses?,Is there an impact on another dept or campus?:	No
Request Term:	summer
Requested Year:	2008
Contact Name:	Katrina Cloud
Contact E-Mail:	kcloud@pcc.edu

Curriculum Request Form
Course Revision

CHANGE:	Course Number,Course Title,Course Description,Requisites,Learning Outcomes
Current Course Number:	TE 9615
Proposed Course Number:	APR 126
Current Course Title:	Electrical VI: 2nd Year, 3rd Term
Proposed Course Title:	Electrical Systems Installation per NEC
Proposed Transcript Title:	Elect. Systems Install per NEC
Reason for Title Change:	To align with statewide apprenticeship degree
Current Description:	Covers residential and commercial lighting and fixtures, cranes and hoists, emergency systems, and power circuiting in various locations. Includes detailed code requirements. Prerequisite: TE 9614.
Proposed Description:	Covers standby emergency systems, temporary electrical services, fire alarm systems, specialty systems, advanced controls, heat tracing, freezing protection, installation practices, and an introduction to the NEC. Student will also learn what constitutes a low voltage and limited energy circuit as per the NEC and the requirements for each.
Reason for Description Change:	To align with statewide apprenticeship degree
Current Learning Outcomes:	Demonstrate knowledge of common lighting fixtures & their applications. Demonstrate understanding of standard ballast calculations as well as electronic ballasts. Calculate incandescent loads, as well as make Industrial Lighting calculations. Demonstrate understanding of Industrial Cranes and Hoists, along with NEC requirements. Demonstrate understanding of typical types of emergency systems, such as battery back-up and UPS. Demonstrate knowledge of NEC requirements in industry.

Demonstrate knowledge of DC Motor Applications, Overcurrent Protection (Article 240 - NEC), Industrial Calculations, wire sizing, fuse, and breaker sizing, Conduit types and uses, Motor circuits, and Motor circuit calculations.

Demonstrate understanding of Basic Short Circuit Calculations, Basic Interrupting Ratings, Withstand Capability of Circuit Breakers, Fuses, Busway, Wire, Motor Starters, and Transfer Switches.

Demonstrate understanding of Basics of Selective Coordination, Component Protection, Principles of Current Limitation, and Series Ratings of Overcurrent Devices.

Proposed Learning Outcomes:

Explain typical types of emergency systems, such as battery back-up and UPS.

Describe heat tracing and freezing protection.

Explain fire alarm systems and installation practices.

Determine when temporary electrical services are needed and what equipment is necessary.

Discuss the different types of specialty systems.

Describe various troubleshooting techniques of trade-specific equipment.

Demonstrate safe working conditions in accordance with state and federal regulations.

Describe and apply basic theory of electrical sources.

Explain the practical skills most commonly used by a journeyperson.

Determine the difference between a low voltage and limited energy circuit.

Explain the ground rules of the NEC.

Describe how the National Electrical Code is organized and how it applies to motor use and ratings.

Locate code requirements for overhead, underground and temporary electrical services.

Interpret NEC requirements in industry.

Reason for Learning Outcomes Change:	The Trades & Industry Department is participating in a new state-wide apprenticeship degree pathway. The Trades & Industry Department currently uses Trade Extension (TE) as their subject code for three separate programs: apprenticeship, facilities maintenance technology and electrical trades. The TE structure is being broken into three new subject codes: APR for Apprenticeship, FMT for Facilities Maintenance Technology and ELT for Electrical Trades. All courses will move to 100 and 200 level course numbering. This framework provides additional access to courses, compliance with revised OAR's, alignment with BOLI standards, transferability of credit among Oregon colleges - all in an effort to increase degree completion. In addition, students will be able to locate classes more efficiently with the new indicators.
Current Prerequisites:	TE 9614
Proposed Prerequisites:	APR 125
Will this impact other SACs?,Is there an impact on other SACs?:	No
Will this impact other Depts/Campuses?,Is there an impact on another dept or campus?:	No
Request Term:	summer
Requested Year:	2008
Contact Name:	Katrina Cloud
Contact E-Mail:	kcloud@pcc.edu

Curriculum Request Form
Course Revision

CHANGE:	Course Number, Requisites
Current Course Number:	TE 9243
Proposed Course Number:	APR 132
Current Course Title:	Refrigeration II
Current Prerequisites:	TE 9242
Proposed Prerequisites:	FMT 101, APR 131 or TE 9242
Will this impact other SACs?,Is there an impact on other SACs?:	No
How other SACs may be impacted:	
Will this impact other Depts/Campuses?,Is there an impact on another dept or campus?:	No
Request Term:	summer
Requested Year:	2008
Contact Name:	Katrina Cloud
Contact E-Mail:	kcloud@pcc.edu

Curriculum Request Form
Course Revision

CHANGE:	Course Number,Requisites
Current Course Number:	TE 9244
Proposed Course Number:	APR 133
Current Course Title:	Refrigeration III
Current Prerequisites:	TE 9242 or TE 9243
Proposed Prerequisites:	(FMT 101, APR 131 or TE 9242); (FMT 102, APR 132 or TE 9243)
Will this impact other SACs?,Is there an impact on other SACs?:	No
How other SACs may be impacted:	
Will this impact other Depts/Campuses?,Is there an impact on another dept or campus?:	No
Request Term:	summer
Requested Year:	2008
Contact Name:	Katrina Cloud
Contact E-Mail:	kcloud@pcc.edu

Curriculum Request Form
Course Revision

CHANGE:	Course Number, Course Description, Requisites
Current Course Number:	TE 9000
Proposed Course Number:	APR 200
Current Course Title:	Trades Preparation
Current Description:	Includes Construction Trade topics such as industry orientation, hazardous materials, general on-the-job questions, material handling, scaffolding, rigging, fire protection, hand and power tool use, fall protection, and electrical basics. Students will learn safety procedures that apply to each topic. Also covered will be related terminology, task planning, proper functions and methods of construction. Addendum to Course Description: This course will instruct students in utilizing the BOLI website to review apprenticeship responsibilities, and standards as well as seek the different classifications of construction trades.
Proposed Description:	Includes Pre-Apprenticeship Construction Trade topics such as industry orientation, hazardous materials, general on-the-job questions, material handling, scaffolding, rigging, fire protection, hand and power tool use, fall protection, and electrical basics. Students will learn safety procedures that apply to each topic. Also covered will be related terminology, task planning, methods and functions of construction, apprenticeship application process, program requirements, resume and interview skills and OSHA 30-hour safety training. This course is recognized by the Oregon State Bureau of Labor and Industry; Apprenticeship and Training Division's Council as an approved Pre-Apprenticeship program. Prerequisite: Math 60 or Department Permission.
Reason for Description Change:	The course is now an approve pre-apprenticeship course by the Oregon Apprenticeship Council. Prior to the full council approval we were not allowed to use the term 'Pre-Apprenticeship'. The additional text was added to better describe the course.
Current Prerequisites:	None
Proposed Prerequisites:	Math 60 or Department Permission
Will this impact other SACs?,Is there an impact on other SACs?:	No

Will this impact other Depts/Campuses?,Is there an impact on another dept or campus?:	No
Request Term:	summer
Requested Year:	2008
Contact Name:	Katrina Cloud
Contact E-Mail:	kcloud@pcc.edu

Curriculum Request Form
Course Revision

CHANGE:	Course Number,Course Description,Requisites,Learning Outcomes
Current Course Number:	TE 9145
Proposed Course Number:	APR 201
Current Course Title:	Electrical Motor Controls
Current Description:	Provides the knowledge and skills needed to service electric motors. Focuses on the operation and installation of control systems, specifically motor starters and controllers. Includes 16 Code Related hours of Continuing Education Unit credits for Oregon State regimenting purposes.
Proposed Description:	Course provides knowledge and skills needed to design, install, maintain, service and troubleshoot electric motors. Students will focus on the operation and installation of control systems; specifically motor starters and controllers. Electromagnetic controls, motors and transformers will also be covered. Lab activities will utilize electrical test equipment to analyze electric motor control malfunctions. This class can be used towards Continuing Education Units for Oregon State electrical licensing purposes.
Reason for Description Change:	To align with statewide apprenticeship degree
Current Learning Outcomes:	Demonstrate knowledge of the general principles of electric motor control and the common types of starters. Demonstrate understanding of the function of control pilot devices as a component of motor control. Demonstrate knowledge of the common electrical symbols, connections and layouts. Demonstrate understanding and ability to install or repair selected basic control circuits.

Demonstrate understanding of the reasons for the use of reduced voltage starting.

Demonstrate understanding of the operating principles on which the squirrel cage motor is based

Demonstrate understanding of the advantages of an AC three-phase wound rotor, or slip ring, induction motor.

Demonstrate understanding of the operation and application of a synchronous motor.

Demonstrate understanding of direct-current motors and their use in a variety of industries.

Demonstrate understanding of several methods of repeated closure of a circuit.

Demonstrate knowledge of the installation of motor drives and how to calculate the size required.

Proposed Learning Outcomes:

Explain the general principles of electric motor control and the common types of starters.

Demonstrate the function of control pilot devices as a component of motor control.

Identify the common electrical symbols, connections and layouts.

Recognize electrical schematics, wiring devices and control diagrams.

Install and repair basic circuits.

Explain the reasons for the use of reduced voltage starting.

Demonstrate safe working conditions in accordance with state and federal regulations.

Describe the operating principles on which the squirrel cage motor is based.

Describe the operation of control systems, motor starters and controllers.

	Discuss the advantages of an AC three-phase wound motor, slip ring, and induction motor. Explain the operation and application of a synchronous motor. Discuss direct-current motors and their use in a variety of industries. Install motor drives. Calculate the required size motor for installation of assigned tasks. Discuss electromagnetic controls, motors and transformers Utilize electrical test equipment to analyze electric motor control malfunctions. Perform motor maintenance.
Reason for Learning Outcomes Change:	The Trades & Industry Department is participating in a new state-wide apprenticeship degree pathway. The Trades & Industry Department currently uses Trade Extension (TE) as their subject code for three separate programs: apprenticeship, facilities maintenance technology and electrical trades. The TE structure is being broken into three new subject codes: APR for Apprenticeship, FMT for Facilities Maintenance Technology and ELT for Electrical Trades. All courses will move to 100 and 200 level course numbering. This framework provides additional access to courses, compliance with revised OAR's, alignment with BOLI standards, transferability of credit among Oregon colleges - all in an effort to increase degree completion. In addition, students will be able to locate classes more efficiently with the new indicators.
Will this impact other SACs?,Is there an impact on other SACs?:	No
Will this impact other Depts/Campuses?,Is there an impact on another dept	No

or campus?:

Request Term:	summer
Requested Year:	2008
Contact Name:	Katrina Cloud
Contact E-Mail:	kcloud@pcc.edu

Curriculum Request Form
Course Revision

CHANGE:	Course Number,Course Title,Course Description,Requisites,Learning Outcomes
Current Course Number:	TE 9636
Proposed Course Number:	APR 202
Current Course Title:	LME Electrical VI
Proposed Course Title:	LME: Electrical Code Level I
Reason for Title Change:	To align with statewide apprenticeship degree
Current Description:	This course lays the foundation for students seeking to gain a working knowledge of the National Electrical Code. Focuses on State of Oregon statutes governing electrical installations as well as Building Codes Division administrative rules covering license requirements and responsibilities. Covers other codes and publications which impact electrical installations as well as State of Oregon Amendments to the National Electrical Code. Provides a basic introduction to the National Electrical Code.
Proposed Description:	First of three courses which provides a working knowledge of the National Electrical Code. Assists LME apprentices in preparing for the state electrical exam. Topics include definitions, requirements for electrical installation, identification and use of electrical conductors, wiring, circuit-protection, wiring methods and materials. Electrical safety standards will be discussed.
Reason for Description Change:	To align with statewide apprenticeship degree
Current Learning Outcomes:	Demonstrate knowledge of State statutes governing electrical installations. Demonstrate knowledge of State Administrative Rules governing electrical installations and electrical licenses. Demonstrate knowledge of State amendments to the NEC and how they change the NEC general rule. Demonstrate knowledge of electrical requirements in other publications and codes that are in addition to the NEC but impact the electrical installation. Demonstrate knowledge of NEC requirements about branch

	circuits, feeders, overcurrent devices, grounding, bonding as well as understand definitions of terms used in the NEC.
Proposed Learning Outcomes:	Locate code requirements for wiring methods required or permitted by the NEC. Locate code requirements for materials used in electrical installations. Locate code requirements for lamp holders, lamps, and lighting fixtures. Locate code requirements for motors, motor circuits, and controllers. Locate code requirements for transformers. Locate code requirements for luminaries, cords, switchboards and panel boards. Locate code requirements for raceways, boxes, cables, and conductors. Use the NEC articles and tables to perform various calculations. Explain over current protection and lighting fundamentals. Prepare for state exam. Complete and pass timed practice exams. Complete NEC code preparation exams with a 75% or higher.
Reason for Learning Outcomes Change:	The Trades & Industry Department is participating in a new state-wide apprenticeship degree pathway. The Trades & Industry Department currently uses Trade Extension (TE) as their subject code for three separate programs: apprenticeship, facilities maintenance technology and electrical trades. The TE structure is being broken into three new subject codes: APR for Apprenticeship, FMT for Facilities Maintenance Technology and ELT for Electrical Trades. All courses will move to 100 and 200 level course numbering. This framework provides additional access to courses, compliance with revised OAR’s, alignment with BOLI standards, transferability of credit among Oregon colleges - all in an effort to increase degree completion. In addition, students will be able to locate classes more efficiently with the new indicators.
Current Prerequisites:	None

Proposed Prerequisites:	APR 104
Will this impact other SACs?,Is there an impact on other SACs?:	no
Will this impact other Depts/Campuses?,Is there an impact on another dept or campus?:	No
Request Term:	summer
Requested Year:	2008
Contact Name:	Katrina Cloud
Contact E-Mail:	kcloud@pcc.edu

Curriculum Request Form
Course Revision

CHANGE:	Course Number,Course Title,Course Description,Requisites,Learning Outcomes
Current Course Number:	TE 9637
Proposed Course Number:	APR 203
Current Course Title:	LME Electrical VII
Proposed Course Title:	LME: Electrical Code - Level II
Proposed Transcript Title:	LME: Electrical Code-Level II
Reason for Title Change:	To align with statewide apprenticeship degree
Current Description:	Covers wiring methods and materials referenced in the NEC. Instructs how to find the Code requirements about raceways, boxes, cables, conductors, and wiring methods. Electrical equipment such as appliances, motors, luminairs, air conditioners, cords, switchboards and panelboards will be discussed, focusing on the code requirement for each type of installation.
Proposed Description:	Covers the second part of NEC code review. Topics include installation code requirements for the following: electrical equipment for general use such as motors, luminaries, air conditioners, cords, switchboards and panel boards. Also covers special occupancies which will assist students in locating and understanding electrical code requirements for hazardous locations such as gas stations, spray paint booths, aircraft hangars, health care facilities, place of assembly, theaters, manufactured buildings, mobile homes, temporary locations, etc. Electrical standards will be emphasized.
Reason for Description Change:	To align with statewide apprenticeship degree
Current Learning Outcomes:	Locate code requirements for wiring methods required or permitted by the NEC. Locate code requirements for materials used in the electrical installations.

	Locate code requirements for lampholders, lamps, and lighting fixtures.
	Locate code requirements for motors, motor circuits, and controllers.
	Locate code requirements for transformers.
	Locate code requirements for electric space heating equipment and air conditioners.
Proposed Learning Outcomes:	Solve electrical equations using trade-specific mathematical formulas.
	Interpret NEC and Oregon Specialty Codes.
	Locate code requirements for special occupancies such as flammable locations, hospitals, spray booths and places of assembly.
	Locate code requirements for such as special equipment as computer rooms, cranes, hoists, elevators, and welders.
	Locate code requirements for emergency systems, legally required systems, optional systems and identify the differences between the systems.
	Locate code requirements for Class 1, Class 2, and Class 3 circuits and identify the differences between the systems.
	Locate code requirements for powerlimited fire alarm systems and non-powerlimited fire alarm systems.
	Locate code requirements for communication systems such as radio, television and CATV systems.
	Demonstrate knowledge of industry terminology.
	Use industry terminology and the NEC to problem solve and find answers to electrical problems.
	Explain thoroughly the general layout, structure, organization and numbering system of the National Electrical Code.
	Cluster code articles into wiring methods and protection, special conditions, equipment and occupancies and communications

	systems and demonstrate location of each. Use the NEC articles and tables to perform various calculations. Prepare for state exam. Complete and pass timed practice exams. Complete NEC code preparation exams with a 75% or higher.
Reason for Learning Outcomes Change:	The Trades & Industry Department is participating in a new state-wide apprenticeship degree pathway. The Trades & Industry Department currently uses Trade Extension (TE) as their subject code for three separate programs: apprenticeship, facilities maintenance technology and electrical trades. The TE structure is being broken into three new subject codes: APR for Apprenticeship, FMT for Facilities Maintenance Technology and ELT for Electrical Trades. All courses will move to 100 and 200 level course numbering. This framework provides additional access to courses, compliance with revised OAR's, alignment with BOLI standards, transferability of credit among Oregon colleges - all in an effort to increase degree completion. In addition, students will be able to locate classes more efficiently with the new indicators.
Current Prerequisites:	None
Proposed Prerequisites:	APR 202
Will this impact other SACs?,Is there an impact on other SACs?:	No
Will this impact other Depts/Campuses?,Is there an impact on another dept or campus?:	No
Request Term:	summer
Requested Year:	2008
Contact Name:	Katrina Cloud
Contact E-Mail:	kcloud@pcc.edu

Curriculum Request Form
Course Revision

CHANGE:	Course Number,Course Title,Course Description,Requisites,Learning Outcomes
Current Course Number:	TE 9638
Proposed Course Number:	APR 204
Current Course Title:	LME Electrical VIII
Proposed Course Title:	LME: Electrical Code - Level III
Proposed Transcript Title:	LME: Electrical Code - Level III
Reason for Title Change:	To align with statewide apprenticeship degree
Current Description:	This course assists students in locating and understanding electrical code requirements for hazardous locations such as gas stations spray booths, etc. Covers Requirements for healthcare facilities, places of assembly, electric sign, elevators, computer rooms, emergency systems, signaling circuits, fire alarm systems and communication systems.
Proposed Description:	Covers the third part of the NEC code review and assists LME apprentices in preparing for the state electrical exam. Topics include Special Equipment including electric signs, cranes, hoists, elevators, electric welders, information technology equipment, pools, and fountains; Special Conditions including emergency systems, Class 1, 2, and 3, low voltage control circuits, fire alarm systems, and fiber optics; and Communication Systems. Also covers state of Oregon statutes governing electrical installations, building code division administrative rules covering license requirements and responsibilities, state of Oregon amendments, supplemental code reference materials, safety standards and practice exams.
Reason for Description Change:	To align with statewide apprenticeship degree
Current Learning Outcomes:	Locate code requirements for special occupancies such as flammable locations, hospitals, spray booths and places of assembly. Locate code requirements for such special equipment as computer

rooms, cranes, hoists, elevators, and welders.

Locate code requirements for emergency systems, legally required systems, optional systems and identify the differences between the systems.

Locate code requirements for Class 1, Class 2, and Class 3 circuits and identify the differences between the systems.

Locate code requirements for powerlimited fire alarm systems and non-powerlimited fire alarm systems.

Locate code requirements for communication systems such as radio, television and CATV systems.

Proposed Learning Outcomes:

Solve mathematical formulas and equations of theory.
Interpret NEC and Oregon Specialty Codes.

Discuss state statutes governing electrical installations.

Understand state administrative rules governing electrical installations and electrical licenses.

Explain state amendments to the NEC and how they change the NEC general rule.

Interpret electrical requirements in other publications and codes that are in addition to the NEC but impact the electrical installation.

Recognize NEC requirements about branch circuits, feeders, overcurrent devices, grounding, and bonding as well as understand definitions of terms used in the NEC.

Use the NEC articles and tables to perform various calculations.
Identify NEC code book clues, key words and phrases.

Utilize the Oregon Administrative Rules (OAR's) in relation to the NEC and Oregon Specialty Codes (OSC).

Use the NEC to find answers to electrical problems.
Prepare for state exam.

Complete and pass timed practice exams.

Complete NEC code preparation exams with a 75% or higher.

Reason for Learning Outcomes Change:	The Trades & Industry Department is participating in a new state-wide apprenticeship degree pathway. The Trades & Industry Department currently uses Trade Extension (TE) as their subject code for three separate programs: apprenticeship, facilities maintenance technology and electrical trades. The TE structure is being broken into three new subject codes: APR for Apprenticeship, FMT for Facilities Maintenance Technology and ELT for Electrical Trades. All courses will move to 100 and 200 level course numbering. This framework provides additional access to courses, compliance with revised OAR's, alignment with BOLI standards, transferability of credit among Oregon colleges - all in an effort to increase degree completion. In addition, students will be able to locate classes more efficiently with the new indicators.
Current Prerequisites:	None
Proposed Prerequisites:	APR 203
Will this impact other SACs?,Is there an impact on other SACs?:	No
Will this impact other Depts/Campuses?,Is there an impact on another dept or campus?:	No
Request Term:	summer
Requested Year:	2008
Contact Name:	Katrina Cloud
Contact E-Mail:	kcloud@pcc.edu

Curriculum Request Form
Course Revision

CHANGE:	Course Number,Course Title,Course Description,Requisites,Learning Outcomes
Current Course Number:	TE 9616
Proposed Course Number:	APR 221
Current Course Title:	Electrical VII: 3rd Year, 1st Term
Proposed Course Title:	Advanced AC Circuitry
Reason for Title Change:	To align with statewide apprenticeship degree
Current Description:	Covers the theory of alternating current and power. Includes alternating current, resistance in AC circuits, inductance and inductive reactance, capacitance and capacitive reactance, power factor correction, power in AC circuits, vector analysis and three phase connections and calculations. Prerequisite: TE 9615.
Proposed Description:	Course builds on previous year's topics and includes the theory of alternating current and power. Also includes alternating current, resistance in AC circuits, inductance and inductive reactance, capacitance and capacitive reactance, power factor correction, power in AC circuits, vector analysis and three phase connections and calculations.
Reason for Description Change:	To align with statewide apprenticeship degree
Current Learning Outcomes:	Discuss generation of alternating current, discuss advantages of alternating current, perform calculations of peak, instantaneous, and effective values and perform Ohm's law calculations. Discuss differences and similarities between AC and DC circuits, calculate voltage, current, and resistance. Discuss factors that influence inductive reactance and where they are seen in an industrial plant and perform circuit calculations with these factors considered. Discuss factors that influence capacitance and capacitive reactance, and where they are seen in an industrial plant and perform circuit calculations with these factors considered. Discuss factors and what can be done to improve power factor

	and calculate the kvar required to improve p.f. to a particular value. Calculate circuit power for single and three-phase circuits considering a range of factors and power factors. Use vectors to demonstrate the principles learned and demonstrate the application of principles of single phase motors. Describe delta and wye configurations and calculate line phase voltage, current and impedance. Describe the use of power factor correction and power supply capacitors including their use, sizing, and the Code requirements for their installation and discuss safety precautions involved with capacitors.
Proposed Learning Outcomes:	Discuss the generation and advantages of alternating current. Perform peak, instantaneous, effective values and Ohm's law calculations. Discuss differences and similarities between AC and DC circuits, calculate voltage, current, and resistance. Explain factors that influence inductive reactance, where they are seen in an industrial plant and perform circuit calculations with these factors considered. Discuss factors that influence capacitance and capacitive reactance, where they are seen in an industrial plant and perform circuit calculations with these factors considered. Discuss what can be done to improve power factor and calculate the kvar required to improve power factor. to a particular value. Calculate circuit power for single and three-phase circuits considering a range of factors and power factors. Use vectors to demonstrate the principles learned and explain the application of principles of single phase motors. Demonstrate safe working conditions in accordance with state and federal regulations. Describe and apply basic theory of electrical sources. Use delta and Wye configurations to calculate line phase voltage, current and impedance. Describe the use of power factor correction and power supply

	capacitors including their use, sizing and code requirements for installation. Explain safety precautions involved with capacitors. Discuss the differences and similarities of AC/DC circuits, voltage, current and resistance. Describe power factor correction, power supply, code requirements and safety.
Reason for Learning Outcomes Change:	The Trades & Industry Department is participating in a new state-wide apprenticeship degree pathway. The Trades & Industry Department currently uses Trade Extension (TE) as their subject code for three separate programs: apprenticeship, facilities maintenance technology and electrical trades. The TE structure is being broken into three new subject codes: APR for Apprenticeship, FMT for Facilities Maintenance Technology and ELT for Electrical Trades. All courses will move to 100 and 200 level course numbering. This framework provides additional access to courses, compliance with revised OAR's, alignment with BOLI standards, transferability of credit among Oregon colleges - all in an effort to increase degree completion. In addition, students will be able to locate classes more efficiently with the new indicators.
Current Prerequisites:	TE 9615
Proposed Prerequisites:	APR 126
Will this impact other SACs?,Is there an impact on other SACs?:	no
Will this impact other Depts/Campuses?,Is there an impact on another dept or campus?:	No
Request Term:	summer
Requested Year:	2008
Contact Name:	Katrina Cloud
Contact E-Mail:	kcloud@pcc.edu

Curriculum Request Form
Course Revision

CHANGE:	Course Number,Course Title,Requisites,Learning Outcomes
Current Course Number:	TE 9617
Proposed Course Number:	APR 222
Current Course Title:	Electrical VIII: 3rd Year, 2nd Term
Proposed Course Title:	Hazardous Locations
Proposed Transcript Title:	Hazardous Locations
Reason for Title Change:	To align with statewide apprenticeship degree
Current Description:	Includes introduction to hazardous locations, Class I, II, III installations, commercial garages-repair and storage, aircraft hangars, gasoline dispensing and service stations, bulk storage plants, finishing processes and health care facilities. Prerequisite: TE 9616.
Current Learning Outcomes:	Demonstrate understanding, by means of introduction; Hazardous Locations, NEC Article 500, and the principles behind wiring for hazardous locations. Demonstrate knowledge of class I Locations, NEC Article 501, and will be able to describe wiring methods, sealing requirements, and materials for Class I Divisions 1 and 2. Demonstrate knowledge of Class II Locations, NEC Article 502, and will be able to describe wiring methods, sealing requirements, and materials for Class I Division 1 and 2. Demonstrate understanding of Commercial Garages, and NEC Article 512. Demonstrate understanding of Aircraft Hangars, and NEC Article 513. Demonstrate understanding of Gasoline Dispensing and Service Stations, and NEC Article 514. Demonstrate understanding of Bulk Storage Plants, and NEC Article 515. Demonstrate understanding of Finishing Processes, and NEC Article 516, and specifically the principles behind safe installations in paint spray booths and electrostatic coatings. Demonstrate understanding of Health Care Facilities, NEC Article 517, and in particular standby power supplies, redundant grounding, and microshock as well as flammable anesthetizing areas.
Proposed Learning Outcomes:	Explain hazardous locations, NEC Article 500 and the

	principles behind wiring for hazardous locations. Explain Class I Locations, NEC Article 501 and describe wiring methods, sealing requirements and materials for Class I: Divisions 1 and 2. Discuss Class II Locations, NEC Article 502, and describe wiring methods, sealing requirements and materials for Class I: Division 1 and 2. Discuss commercial garages and NEC Article 512. Discuss aircraft hangars and NEC Article 513. Discuss gasoline dispensing, service stations and NEC Article 514. Discuss bulk storage plants and NEC Article 515. Explain NEC Article 516 for finishing processes and safe installations in spray paint booths and electrostatic coatings. Explain NEC Article 517 for health care facilities, standby power supplies, redundant grounding, micro shock and flammable anesthetizing areas. Understand and explain the concepts, structure and components associated with machine process control. Demonstrate familiarity of industry terminology.
Reason for Learning Outcomes Change:	The Trades & Industry Department is participating in a new state-wide apprenticeship degree pathway. The Trades & Industry Department currently uses Trade Extension (TE) as their subject code for three separate programs: apprenticeship, facilities maintenance technology and electrical trades. The TE structure is being broken into three new subject codes: APR for Apprenticeship, FMT for Facilities Maintenance Technology and ELT for Electrical Trades. All courses will move to 100 and 200 level course numbering. This framework provides additional access to courses, compliance with revised OAR's, alignment with BOLI standards, transferability of credit among Oregon colleges - all in an effort to increase degree completion. In addition, students will be able to locate classes more efficiently with the new indicators.
Current Prerequisites:	TE 9616

Proposed Prerequisites:	APR 221
Will this impact other SACs?,Is there an impact on other SACs?:	No
Will this impact other Depts/Campuses?,Is there an impact on another dept or campus?:	No
Request Term:	summer
Requested Year:	2008
Contact Name:	Katrina Cloud
Contact E-Mail:	kcloud@pcc.edu

Curriculum Request Form
Course Revision

CHANGE:	Course Number,Course Title,Course Description,Requisites,Learning Outcomes
Current Course Number:	TE 9618
Proposed Course Number:	APR 223
Current Course Title:	Electrical IX: 3rd Year, 3rd Term
Proposed Course Title:	Motor Control Operations including PLC's
Proposed Transcript Title:	Motor Control Operations/PLC's
Reason for Title Change:	To align with statewide apprenticeship degree
Current Description:	Covers motor and machine controls. Includes fundamentals of motor control, control of motor starting, control components, programmable controllers, pilot devices, control circuit diagrams, solid state logic and diagrams, development of control circuits and troubleshooting electrical controls. Prerequisite: TE 9617.
Proposed Description:	Course builds upon material covered in earlier terms by reviews basic motor controls and progressing to moderately complex machine controls. Includes fundamentals of motor control, control of motor starting, control components, programmable controllers, pilot devices, control circuit diagrams, solid state logic and diagrams, development of control circuits and troubleshooting electrical controls.
Reason for Description Change:	To align with statewide apprenticeship degree
Current Learning Outcomes:	Demonstrate understanding of principles of Motor Control, including manual and magnetic starters, dynamic braking, motor nameplates, and overload. Demonstrate understanding of reduced voltage starting, including reasons for and methods of accomplishment. Demonstrate understanding of Pilot Devices, including types and nomenclature of switches, sensors, and timers. Demonstrate understanding of the development of Motor Control Circuits, including two and three-wire circuits and the thought processes involved in developing a complex logic circuit. Demonstrate understanding of troubleshooting of Machine Controls, including procedures and helpful hints for troubleshooting of both familiar and unfamiliar equipment. Demonstrate understanding of Programmable Logic Controllers, by means of introducing the basic components, wiring, and programming procedures for PLC's.

Proposed Learning Outcomes:	Explain the principles of motor control including manual starters, magnetic starters, dynamic braking, motor nameplates, and overload. Solve electrical equations using trade specific mathematical formulas. Describe reduced voltage starting, including reasons for and methods of accomplishment. Explain pilot devices, switches, sensors and timers. Discuss the development of motor control circuits, including two and three-wire circuits and the thought processes involved in developing a complex logic circuit. Troubleshoot machine controls. Explain troubleshooting procedures familiar and unfamiliar equipment. Recognize troubleshooting issues for both familiar and unfamiliar equipment. Recognize Programmable Logic Controllers basic components, wiring, and programming procedures. Operate PLC's according to trade-specific applications and methodology. Know the basic components and their functions that are common to programmable controllers. Troubleshoot PLC operating programs. Interpret PLC schematics to configure communications.
Reason for Learning Outcomes Change:	The Trades & Industry Department is participating in a new state-wide apprenticeship degree pathway. The Trades & Industry Department currently uses Trade Extension (TE) as their subject code for three separate programs: apprenticeship, facilities maintenance technology and electrical trades. The TE structure is being broken into three new subject codes: APR for Apprenticeship, FMT for Facilities Maintenance Technology and ELT for Electrical Trades. All courses will move to 100 and 200 level course numbering. This framework provides additional access to courses, compliance with revised OAR's, alignment with BOLI standards, transferability of credit among Oregon colleges - all in an effort to increase degree completion. In addition, students will be able to locate classes more efficiently with the new indicators.
Current Prerequisites:	TE 9617
Proposed Prerequisites:	APR 222
Current Prerequisites/Concurrent:	
Proposed Prerequisites/Concurrent:	
Current Corequisites:	
Proposed Corequisites:	

Will this impact other SACs?,Is there an impact on other SACs?:	no
How other SACs may be impacted:	
Will this impact other Depts/Campuses?,Is there an impact on another dept or campus?:	no
How other Depts/Campuses will be impacted:	
Request Term:	summer
Requested Year:	2008
Contact Name:	Katrina Cloud
Contact E-Mail:	kcloud@pcc.edu

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Curriculum Request Form
Course Revision

CHANGE:	Course Number,Course Title,Course Description,Requisites,Learning Outcomes
Current Course Number:	TE 9619
Proposed Course Number:	APP 224
Current Course Title:	Electrical X: 4th Year, 1st Term
Proposed Course Title:	Electrical Code - Level I
Reason for Title Change:	To align with statewide apprenticeship degree
Current Description:	First of three courses which emphasize the use and understanding of the National Electrical Code book. Assists plant maintenance electricians in preparing for the state electrical exam. Topics include grounding, motors, transformers, overcurrent protection and feeders. Prerequisite: TE 9618.
Proposed Description:	First of three courses which emphasize the use and understanding of the National Electrical Code book. Assists plant maintenance electricians in preparing for the state electrical exam. Topics include grounding, motors, wiring methods, overcurrent protection, branch circuits, calculations, feeders and specialty codes.
Reason for Description Change:	To align with statewide apprenticeship degree
Current Learning Outcomes:	Discuss generation of alternating current, discuss advantages of alternating current, perform calculations of peak, instantaneous, and effective values and perform Ohm's law calculations. Discuss differences and similarities between AC and DC circuits, calculate voltage, current, and resistance. Discuss factors that influence inductive reactance and where they are seen in an industrial plant and perform circuit calculations with these factors considered. Discuss factors that influence capacitance and capacitive reactance, and where they are seen in an industrial plant and perform circuit calculations with these factors considered. Discuss factors and what can be done to improve power factor and calculate the kvar required to improve p.f. to a particular value.

Calculate circuit power for single and three-phase circuits considering a range of factors and power factors.

Use vectors to demonstrate the principles learned and demonstrate the application of principles of single phase motors.

Describe delta and wye configurations and calculate line phase voltage, current and impedance.

Describe the use of power factor correction and power supply capacitors including their use, sizing, and the Code requirements for their installation and discuss safety precautions involved with capacitors.

Proposed Learning Outcomes:

Interpret NEC and Oregon Specialty Codes.
Interpret Article 90 and 100 of the NEC.

Explain how to use the NEC code book and locate descriptions.

Interpret Article 110 of the NEC.

Explain the NEC requirements for electrical installations.
Interpret Articles 215 through 225 of the NEC.

Explain the NEC requirements for feeders and branch circuits.
Solve service calculations.

Interpret Article 230 of the NEC.

Explain the NEC requirements for services, overcurrent protection.

Interpret Article 250 and 280 of the NEC.

Explain the NEC requirements for grounding, bonding and surge arresters.

Interpret Article 300 of the NEC.

Explain the NEC requirements for wiring methods and temporary wiring.

Interpret Article 310 of the NEC.

Explain the NEC requirements for conductors for general wiring.

Demonstrate familiarity of industry terminology.

Utilize the Oregon Administrative Rules (OAR's) in relation to the NEC and Oregon Specialty Codes (OSC).

	Use the NEC articles and tables to perform various calculations. Prepare for the NEC code exam. Complete and pass timed practice exams. Complete the NEC code preparation exams with a 75% or higher.
Reason for Learning Outcomes Change:	The Trades & Industry Department is participating in a new state-wide apprenticeship degree pathway. The Trades & Industry Department currently uses Trade Extension (TE) as their subject code for three separate programs: apprenticeship, facilities maintenance technology and electrical trades. The TE structure is being broken into three new subject codes: APR for Apprenticeship, FMT for Facilities Maintenance Technology and ELT for Electrical Trades. All courses will move to 100 and 200 level course numbering. This framework provides additional access to courses, compliance with revised OAR's, alignment with BOLI standards, transferability of credit among Oregon colleges - all in an effort to increase degree completion. In addition, students will be able to locate classes more efficiently with the new indicators.
Current Prerequisites:	TE 9618
Proposed Prerequisites:	APR 223
Will this impact other SACs?,Is there an impact on other SACs?:	No
Will this impact other Depts/Campuses?,Is there an impact on another dept or campus?:	No
Request Term:	summer
Requested Year:	2008
Contact Name:	Katrina Cloud
Contact E-Mail:	kcloud@pcc.edu

Curriculum Request Form
Course Revision

CHANGE:	Course Number,Course Title,Course Description,Requisites,Learning Outcomes
Current Course Number:	TE 9620
Proposed Course Number:	APR 225
Current Course Title:	Electrical XI: 4th Year, 2nd Term
Proposed Course Title:	Electrical Code - Level II
Proposed Transcript Title:	
Reason for Title Change:	To align with statewide apprenticeship degree
Current Description:	Covers the second part of code review, motors, XFMRS., voltage drop calculations, feeder-broauers, and loads. Topics include busway, cable bus, switches, SWBDS., panel boards, high voltage equipment, and installation of electrical systems used in commercial and industrial installations. Prerequisite: TE 9619.
Proposed Description:	Covers the second part of NEC code review. Topics include cable, raceway, busway, cablebus, switches, panel boards, lighting, heating equipment, transformers and practice exams.
Reason for Description Change:	To align with statewide apprenticeship degree
Current Learning Outcomes:	Demonstrate understanding of feeder ducts, suspension methods, bus plugs. Determine numbers and types of electrical panels required, describe panel construction, demonstrate knowledge of where panels locate and adjust circuit breakers magnetic trips. Demonstrate understanding of trolley runs, feed-in adapters, trolleys, conduit, lighting and cord drops/strain reliefs. Demonstrate ability to select a conductor from the proper wire table, knowledge of types of insulation, and characteristics, correct for proper ampacity, and discuss use of a megger. Demonstrate understanding of conductors and conductor material, insulation, correction factors, underground conductors, resistance, parallel conductors and test wire installations.
Proposed Learning Outcomes:	Interpret NEC and Oregon Specialty Codes.

Interpret Articles 318 through 365 of the NEC.

Explain NEC requirements for cable and conduit types.

Interpret Articles 370 through 384 of the NEC.

Explain NEC requirements for cablebus, raceways, wireways, assemblies and extensions.

Interpret Articles 400 through 411 of the NEC.

Explain NEC requirements for cords, cables, fixture wires, switches, receptacles, code connectors, attachment plugs, switchboards, panel boards and industrial control panels.

Explain NEC requirements for luminaries, lamp holders, lamps and lighting systems operating at 30 volts or less.

Interpret Articles 422 through 427 of the NEC.

Explain NEC requirements for electric heating equipment.

Interpret Article 430 of the NEC.

Explain NEC requirements for motors, motor circuits and controllers.

Interpret Articles 440 through 450 of the NEC.

Explain NEC requirements for air conditioners, refrigeration equipment, generators, transformers and transformer vaults. Interpret Articles 455 through 480 of the NEC.

Explain NEC requirements for phase converters, capacitors, resisters, reactor and storage batteries.

Identify motor control, Arc fault and GFCI in the NEC code.

Utilize the Oregon Administrative Rules (OAR's) in relation to the NEC and Oregon Specialty Codes (OSC).

Use the NEC articles and tables to perform various calculations.

Prepare for state exam.

Complete and pass timed practice exams.

Complete the NEC code preparation exams with a 75% or higher.

Reason for Learning

The Trades & Industry Department is participating in a new state-

Outcomes Change:	wide apprenticeship degree pathway. The Trades & Industry Department currently uses Trade Extension (TE) as their subject code for three separate programs: apprenticeship, facilities maintenance technology and electrical trades. The TE structure is being broken into three new subject codes: APR for Apprenticeship, FMT for Facilities Maintenance Technology and ELT for Electrical Trades. All courses will move to 100 and 200 level course numbering. This framework provides additional access to courses, compliance with revised OAR's, alignment with BOLI standards, transferability of credit among Oregon colleges - all in an effort to increase degree completion. In addition, students will be able to locate classes more efficiently with the new indicators.
Current Prerequisites:	TE 9619
Proposed Prerequisites:	APP 224
Will this impact other SACs?,Is there an impact on other SACs?:	No
Will this impact other Depts/Campuses?,Is there an impact on another dept or campus?:	No
Request Term:	summer
Requested Year:	2008
Contact Name:	Katrina Cloud
Contact E-Mail:	kcloud@pcc.edu

Curriculum Request Form
Course Revision

CHANGE:	Course Number,Course Title,Course Description,Requisites,Learning Outcomes
Current Course Number:	TE 9621
Proposed Course Number:	APR 226
Current Course Title:	Electrical XII: 4th Year, 3rd Term
Proposed Course Title:	Electrical Code - Level III
Reason for Title Change:	To align with statewide apprenticeship degree
Current Description:	Covers the National Electric Code and prepares the apprentice/student to become a licensed Manufacturing Plant Electrician journeyperson. Prerequisite: TE 9620.
Proposed Description:	Covers the third part of the NEC code review and prepares the student apprentice to become a licensed Manufacturing Plant Electrician journeyperson. Includes code articles, OAR's, supplemental code reference materials, calculations and practice exams.
Reason for Description Change:	To align with statewide apprenticeship degree
Current Learning Outcomes:	Demonstrate understanding of Chapter 1 - General requirements of the NEC
	Demonstrate understanding of Chapter 2 - Wiring & Protection requirement of the NEC
	Demonstrate understanding of Chapter 3 - Wiring Methods of the NEC
	Demonstrate understanding of Chapter 4 - Equipment requirements of the NEC
	Demonstrate understanding of Chapter 5 - Special Occupancies of the NEC
	Demonstrate understanding of Chapter 6 - Special Equipment of the NEC
	Demonstrate understanding of Chapter 7 - Special Conditions of the NEC

Demonstrate understanding of Chapter 8 - Communication Systems of the NEC

Demonstrate understanding of Chapter 9 - Tables and Examples Sections of the NEC

Proposed Learning Outcomes:

Interpret NEC and Oregon Specialty Codes.

Utilize the tables and examples sections of the NEC.

Interpret Articles 500 through 517 of the NEC.

Explain NEC requirements for hazardous locations: Classes I, Class II, Class III, Division 1 and Division 2.

Interpret Articles 517 through 525 of the NEC.

Explain NEC requirements for special occupancy locations.

Interpret Articles 530 through 590 of the NEC.

Explain NEC requirements for specialized locations.

Interpret Articles 600 through 675 of the NEC.

Explain NEC requirements for specialized equipment such as industrial equipment, electric signs, audio equipment, information technology equipment, irrigation, and x-ray equipment.

Explain NEC requirements for moving equipment such as cranes, elevators and electric vehicle charging systems.

Interpret Articles 680 through 695 of the NEC.

Explain NEC requirements for swimming pools, fountains, solar photovoltaic systems, fuel cell systems, and fire pumps.

Interpret Articles 700 through 830 of the NEC.

Explain NEC requirements for special conditions such as emergency systems, standby systems, critical operating systems, fire alarms, fiber optics, communication, radio, television and network systems.

Locate code supplements in NEC reference materials.
Explain NEC requirements for signaling circuits.
Prepare for state exam.

Use the NEC articles and tables to perform various calculations.

	Cluster code articles into wiring methods and protection, special conditions, equipment and occupancies and communications systems and locate each. Utilize the Oregon Administrative Rules (OAR's) in relation to the NEC and Oregon Specialty Codes (OSC). Complete and pass timed practice exams. Complete the NEC code preparation exams with a 75% or higher.
Reason for Learning Outcomes Change:	The Trades & Industry Department is participating in a new state-wide apprenticeship degree pathway. The Trades & Industry Department currently uses Trade Extension (TE) as their subject code for three separate programs: apprenticeship, facilities maintenance technology and electrical trades. The TE structure is being broken into three new subject codes: APR for Apprenticeship, FMT for Facilities Maintenance Technology and ELT for Electrical Trades. All courses will move to 100 and 200 level course numbering. This framework provides additional access to courses, compliance with revised OAR's, alignment with BOLI standards, transferability of credit among Oregon colleges - all in an effort to increase degree completion. In addition, students will be able to locate classes more efficiently with the new indicators.
Current Prerequisites:	TE 9620
Proposed Prerequisites:	APR 225
Will this impact other SACs?,Is there an impact on other SACs?:	No
Will this impact other Depts/Campuses?,Is there an impact on another dept or campus?:	No
Request Term:	summer
Requested Year:	2008
Contact Name:	Katrina Cloud
Contact E-Mail:	kcloud@pcc.edu

Curriculum Request Form
Course Revision

CHANGE:	Course Number, Course Description
Current Course Number:	TE 9061
Proposed Course Number:	APR 230
Current Course Title:	National Electrical Code
Current Description:	Instructs the electrical professional WHERE and HOW to find required information in the NEC book, demonstrating how the various articles work together to provide complete information on a subject. Most code articles (90 through 450) will be explained in detail. National Electric Code II (advanced) is the sequel to this course.
Proposed Description:	Instructs the electrical professional WHERE and HOW to find required information in the NEC book, demonstrating how the various articles work together to provide complete information on a subject. Most code articles (90 through 450) will be explained in detail. This class can be used towards Continuing Education Units for Oregon State electrical licensing purposes. National Electric Code II (advanced) is the sequel to this course.
Will this impact other SACs?,Is there an impact on other SACs?:	No
Will this impact other Depts/Campuses?,Is there an impact on another dept or campus?:	No
Request Term:	summer
Requested Year:	2008
Contact Name:	Katrina Cloud
Contact E-Mail:	kcloud@pcc.edu

Curriculum Request Form
Course Revision

CHANGE:	Course Number, Course Description
Current Course Number:	TE 9083
Proposed Course Number:	APR 231
Current Course Title:	National Electrical Code II
Current Description:	Prepares electricians for state examinations as prescribed by Oregon State Building Codes Division. Includes code explanations and applications.
Proposed Description:	Prepares electricians for state examinations as prescribed by Oregon State Building Codes Division. Includes code explanations and applications. This class can be used towards Continuing Education Units for Oregon State electrical licensing purposes.
Will this impact other SACs?,Is there an impact on other SACs?:	No
Will this impact other Depts/Campuses?,Is there an impact on another dept or campus?:	No
Request Term:	summer
Requested Year:	2008
Contact Name:	Katrina Cloud
Contact E-Mail:	kcloud@pcc.edu

Curriculum Request Form
New Course

Course number:	APR 100
Course title:	Exploring Trades & Apprenticeship
Transcript title:	Explore Trades/Apprenticeship
Course credits:	2
Lec contact hrs:	10
Lec lab contact hrs:	20
Course description:	Explore career opportunities within the Trades. Includes topics in traditional careers and new career opportunities in fields such as Renewable Energy and Sustainability. Introduces resources for assisting students in identifying the skills needed to succeed in these fields. Includes self assessment, goal setting and job search skills preparation.
Addendum to course description:	Aids the student in identifying opportunities in Facilities Maintenance, HVAC Systems Building Commissioning and Energy Management. Included are topics in Electrical Generation, Photo-voltaics, Solar Energy, Geo-thermal energy, Wind Power and Sustainability.
Intended outcomes:	Demonstrate knowledge of Facilities Maintenance Technology Be familiar with the role of the technician in several trades Explain concepts and application of 'Green' technologies Describe quantitatively general job titles in the Trades Describe the connections between trade occupations Identify and describe operation of basic mechanical system components Develop a presentation incorporating multiple Sustainable Energy sources

	Present to student peers a concept Platinum LEED site design
Course activities and design:	Course activities may include lecture, conferences, reading video web-bases research, individual assignments and/or group discussion.
Outcomes assessment strategies:	Individual, small group, class discussion, homework, exams and presentations may be used to assess outcomes.
Course content and skills:	Recognize industries and occupations related to the trades, including apprenticeship programs.
	Identify industries, occupations and/or apprenticeships consistent with the skills and abilities identified.
	Evaluate occupations and employers using various resources, including the Internet, libraries, the Career Center, professional journals and associations, Oregon Bureau of Labor and Industries, and/or local chamber of commerce.
	Evaluate occupations and employers using networking and informational interview techniques.
	Report results of research and evaluation activities, including job descriptions, skill, education and experience requirements.
Reason for new course:	This course is intended to meet the needs of students with little minimal knowledge who are looking at the Trades for a career.
How course will be taught:	Campus,Other
Reason for other:	Course may be offered off campus
Explanation if there are degrees andor certificates that are affected by the instruction of this course:	No

Explanation if this course transfer to any other academic institution:	No
Explanation if there are similar courses existing in other programs or disciplines at pcc:	No
Explanation if they have consulted with sac chairs of other programs regarding potential impact:	No
Explain if there are any potential impact on another department or campus:	No
Implemented term or year requested:	Summer 2008
Submitter:	Katrina Cloud
From:	kcloud@pcc.edu
Sac chair:	Rick Willebrand
Sac chair email:	rwillebr@pcc.edu
Sac admin liason name:	Kate Dins
Sac admin liason email:	kdins@pcc.edu

Curriculum Request Form
Contact/Credit Hour

Current Course Number:	APR 202
Current Course Title:	LME: Electrical Code - Level I

	Current	Proposed
Lecture Hours:	3	4
Contact Hours:	3	4
Credits:	3	4

Reason for Change: The Trades & Industry Department is participating in a new state-wide apprenticeship degree pathway. The Trades & Industry Department currently uses Trade Extension (TE) as their subject code for three separate programs: apprenticeship, facilities maintenance technology and electrical trades. The TE structure is being broken into three new subject codes: APR for Apprenticeship, FMT for Facilities Maintenance Technology and ELT for Electrical Trades. All courses will move to 100 and 200 level course numbering.

This framework provides additional access to courses, compliance with revised OAR's, alignment with BOLI standards, transferability of credit among Oregon colleges - all in an effort to increase degree completion. In addition, students will be able to locate classes more efficiently with the new indicators.

The credit change is needed to align with the statewide apprenticeship degree. In addition, students need additional code knowledge to pass their journeyperson exam.

Are outcomes affected?:	YES
Are degrees/certs affected?:	YES
Is there an impact on other Dept/Campus?:	NO
Is there potential conflict with another SAC?:	NO
Implem. Term:	Summer
Implementation Year,Implem. Year:	2008

Contact Name: Katrina Cloud
Contact Email: kcloud@pcc.edu

Curriculum Request Form
Contact/Credit Hour Change

Current Course Number:	APR 203	
Current Course Title:	LME: Electrical Code - Level II	
	Current	Proposed
Current Lecture Hours:	3	4
Total Contact Hours:	3	4
Current Credits:	3	4

Reason for Change: The Trades & Industry Department is participating in a new state-wide apprenticeship degree pathway. The Trades & Industry Department currently uses Trade Extension (TE) as their subject code for three separate programs: apprenticeship, facilities maintenance technology and electrical trades. The TE structure is being broken into three new subject codes: APR for Apprenticeship, FMT for Facilities Maintenance Technology and ELT for Electrical Trades. All courses will move to 100 and 200 level course numbering.

This framework provides additional access to courses, compliance with revised OAR's, alignment with BOLI standards, transferability of credit among Oregon colleges - all in an effort to increase degree completion. In addition, students will be able to locate classes more efficiently with the new indicators.

The credit change is needed to align with the statewide apprenticeship degree. In addition, students need additional code knowledge to pass their journeyperson exam.

Are outcomes affected?:	YES
Are degrees/certs affected?:	YES
Is there an impact on other Dept/Campus?:	NO
Is there potential conflict with another SAC?:	NO

Impact on SACs:	
Implem. Term:	Summer
Implementation Year,Implem. Year:	2008
Contact Name:	Katrina Cloud
Contact Email:	kcloud@pcc.edu

Curriculum Request Form
Contact/Credit Hour Change

Current Course Number:	APR 204
Current Course Title:	LME: Electrical Code - Level III

	Current	Proposed
Current Lecture Hours:	3	4
Total Contact Hours:	3	4
Current Credits:	3	4

Reason for Change:	The Trades & Industry Department is participating in a new state-wide apprenticeship degree pathway. The Trades & Industry Department currently uses Trade Extension (TE) as their subject code for three separate programs: apprenticeship, facilities maintenance technology and electrical trades. The TE structure is being broken into three new subject codes: APR for Apprenticeship, FMT for Facilities Maintenance Technology and ELT for Electrical Trades. All courses will move to 100 and 200 level course numbering. This framework provides additional access to courses, compliance with revised OAR's, alignment with BOLI standards, transferability of credit among Oregon colleges - all in an effort to increase degree completion. In addition, students will be able to locate classes more efficiently with the new indicators. The credit change is needed to align with the statewide apprenticeship degree. In addition, students need additional code knowledge to pass their journeyperson exam.
Are outcomes affected?:	YES
Are degrees/certs affected?:	YES
Is there an impact on other Dept/Campus?:	NO
Impact on Dept/Campus:	
Is there potential conflict with another SAC?:	NO
Impact on SACs:	
Implem. Term:	Summer
Implementation	2008

Year,Implem. Year:

Contact Name: Katrina Cloud
Contact Email: kcloud@pcc.edu

Curriculum Request Form
Contact/Credit Hour Change

Current Course Number:	APR 224
Current Course Title:	Electrical Code - Level I

	Current	Proposed
Lecture Hours:	3	4
Contact Hours:	3	4
Credits:	3	4

Reason for Change: The Trades & Industry Department is participating in a new state-wide apprenticeship degree pathway. The Trades & Industry Department currently uses Trade Extension (TE) as their subject code for three separate programs: apprenticeship, facilities maintenance technology and electrical trades. The TE structure is being broken into three new subject codes: APR for Apprenticeship, FMT for Facilities Maintenance Technology and ELT for Electrical Trades. All courses will move to 100 and 200 level course numbering.

This framework provides additional access to courses, compliance with revised OAR's, alignment with BOLI standards, transferability of credit among Oregon colleges - all in an effort to increase degree completion. In addition, students will be able to locate classes more efficiently with the new indicators.

The credit change is needed to align with the statewide apprenticeship degree. In addition, students need additional code knowledge to pass their journeyperson exam.

Are outcomes affected?:	YES
Are degrees/certs affected?:	YES
Is there an impact on other Dept/Campus?:	NO
Is there potential conflict with another SAC?:	NO
Impact on SACs:	
Implem. Term:	Summer

Implementation Year,Implem. Year:	2008

Contact Name:	Katrina Cloud
Contact Email:	kcloud@pcc.edu

Curriculum Request Form
Contact/Credit Hour Change

Current Course Number:	APR 225
Current Course Title:	Electrical Code - Level II

	Current	Proposed
Lecture Hours:	3	4
Contact Hours:	3	4
Credits:	3	4

Reason for Change: The Trades & Industry Department is participating in a new state-wide apprenticeship degree pathway. The Trades & Industry Department currently uses Trade Extension (TE) as their subject code for three separate programs: apprenticeship, facilities maintenance technology and electrical trades. The TE structure is being broken into three new subject codes: APR for Apprenticeship, FMT for Facilities Maintenance Technology and ELT for Electrical Trades. All courses will move to 100 and 200 level course numbering.

This framework provides additional access to courses, compliance with revised OAR's, alignment with BOLI standards, transferability of credit among Oregon colleges - all in an effort to increase degree completion. In addition, students will be able to locate classes more efficiently with the new indicators.

The credit change is needed to align with the statewide apprenticeship degree. In addition, students need additional code knowledge to pass their journeyperson exam.

Are outcomes affected?:	YES
Are degrees/certs affected?:	YES
Is there an impact on other Dept/Campus?:	NO
Impact on Dept/Campus:	
Is there potential conflict with another SAC?:	NO
Impact on SACs:	
Implem. Term:	Summer

Implementation Year,Implem. Year:	2008
Contact Name:	Katrina Cloud
Contact Email:	kcloud@pcc.edu

Curriculum Request Form
Contact/Credit Hour Change

Current Course Number:	APR 226
Current Course Title:	Electrical Code - Level III

	Current	Proposed
Current Lecture Hours:	3	4
Total Contact Hours:	3	4
Current Credits:	3	4

Reason for Change: The Trades & Industry Department is participating in a new state-wide apprenticeship degree pathway. The Trades & Industry Department currently uses Trade Extension (TE) as their subject code for three separate programs: apprenticeship, facilities maintenance technology and electrical trades. The TE structure is being broken into three new subject codes: APR for Apprenticeship, FMT for Facilities Maintenance Technology and ELT for Electrical Trades. All courses will move to 100 and 200 level course numbering.

This framework provides additional access to courses, compliance with revised OAR's, alignment with BOLI standards, transferability of credit among Oregon colleges - all in an effort to increase degree completion. In addition, students will be able to locate classes more efficiently with the new indicators.

The credit change is needed to align with the statewide apprenticeship degree. In addition, students need additional code knowledge to pass their journeyperson exam.

Are outcomes affected?:	YES
Are degrees/certs affected?:	YES
Is there an impact on other Dept/Campus?:	NO
Is there potential conflict with another SAC?:	NO
Implem. Term:	Summer

Implementation Year,Implem. Year:	2008
Contact Name:	Katrina Cloud
Contact Email:	kcloud@pcc.edu