

PROCEDURAL SEQUENCE FOR ACADEMIC SENATE APPROVAL OF PROPOSALS

1. Submit all proposals to the Office of Academic Affairs.
2. The Senate President will log items and forward them to the appropriate Senate subcommittees.
3. The Senate subcommittee will send the proposal to the Senate.
4. Senate proposals will be considered by the Full Faculty.
5. If approved, the proposal will then be forwarded to the Vice Chancellor.

Proposals that require action to approve/disapprove/table or remand will be sent back to the Senate according to the monthly meeting schedule.

TITLE: Railroad Maint. + Operations A.A.S degree
 SUBCOMMITTEE: Gen Ed / Curriculum PROPOSAL #: 99-12

METL 154 was listed twice so the 2nd listing was replaced by METL 185.

The Humanities distribution is not needed to meet GEN ED requirements for an A.A.S. degree - it was removed so total credits for completion of degree were reduced by 3 crs.

Rationale: M

Action Signatures:

<u>[Signature]</u>			Date <u>1/24/00</u>
Submitter	<u>R. Christek EC</u>	Approve <input checked="" type="checkbox"/>	Date <u>3/7/2000</u>
Committee Chair	<u>Scott Mackenzie</u>	Disapprove <input type="checkbox"/>	Date <u>2/29/00</u>
Faculty Senate President	<u>[Signature]</u>	Approve <input checked="" type="checkbox"/>	Date <u>4-11-00</u>
Vice Chancellor for Academic Affairs	<u>Rogua A. Barbn</u>	Disapprove <input type="checkbox"/>	Date <u>5/2/00</u>
Chancellor	<u>[Signature]</u>	Approve <input checked="" type="checkbox"/>	Date _____

Program Revision Form

NEW _____ DROPPED _____ MAJOR REVISION _____ INFORMATION ONLY X

Date: December 1999

College of Technical Sciences

Department Industrial & Engineering Technology Program Area Railroad Maintenance & Operations A.S.

Please provide in the space below a "before & after" picture of the program with the changes in the program noted. Attach appropriate Course Revision Forms.

FRESHMAN YEAR Courses to be taken Fall Semester

RRT	102 Railroad Technical Crafts	3
MATH	112 College Algebra	3
CIS	110 Intro to Computers	3
BIOL	110 Intro to Envir. Health	3

CHOOSE ONE OF THE FOLLOWING AREAS

Diesel Machinist

DIES	104 Intro to Diesel Engines	3
DIES	114 Intro to Diesel Engines lab	3

Electronics

EET	101 Intro to Electricity/Electronics	5
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General Maintenance

DIES	104 Intro to Diesel Engines	3
DIES	114 Intro to Diesel Engines lab	3

Diesel Power

DIES	104 Intro to Diesel Engines	3
DIES	114 Intro to Diesel Engines lab	3

Welding

METL	154 Gas Arc Welding Processing	3
METL	140 Intro to Welding & Cutting	3

Computer Programming

CIS	115 Intro to Programming	3
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Management

BUS	110 Creative Problem Solving	3
ACCT	261 Principles of Accounting I	3

Office

BUED	100 Basic Keyboard	2
BUED	142 Intro to Wordprocessing	3

OR

CIS	285 Spreadsheet	3
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Courses to be taken Spring Semester

RRT	101 History of Railroading	3
ENGL	111 Written Communication I	3
BUS	100 Intro to Business	3
HUM	distribution	3

SELECT THE COURSES REQUIRED FOR YOUR AREA

Diesel Machinist

METL	155 Machining Processes	3
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Electronics

EET	103 Electronics Fundamental I	5
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General Maintenance

EET	110 Electronics Survey I	3
METL	140 Intro to Welding & Cutting	3

Diesel Power

DIES	204 Intro to Hydraulics/Pneumatics	2
DIES	214 Intro to Hydraulics/Pneumatics lab	2

Welding

METL	154 Gas Arc Welding Processing	3
METL	150 Shielded Metal Arc Welding	3

Computer Programming

CIS	155 Programming Level I	3
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Management

TECH	100 Industrial Safety/Waste Mgmt.	2
BUS	120 Leadership & Quality Mgmt.	3

FRESHMAN YEAR Courses to be taken Fall Semester

RRT	102 Railroad Technical Crafts	3
MATH	112 College Algebra	3
CIS	110 Intro to Computers	3
BIOL	110 Intro to Envir. Health	3

Diesel Machinist

DIES	104 Intro to Diesel Engines	3
DIES	114 Intro to Diesel Engines lab	3

Electronics

EET	101 Intro to Electricity/Electronics	5
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General Maintenance

DIES	104 Intro to Diesel Engines	3
DIES	114 Intro to Diesel Engines lab	3

Diesel Power

DIES	104 Intro to Diesel Engines	3
DIES	114 Intro to Diesel Engines lab	3

Welding

METL	154 Gas Arc Welding Processing	3
METL	140 Intro to Welding & Cutting	3

Computer Programming

CIS	115 Intro to Programming	3
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Management

BUS	110 Creative Problem Solving	3
ACCT	261 Principles of Accounting I	3

Office

BUED	100 Basic Keyboard	2
BUED	142 Intro to Wordprocessing	3

OR

CIS	285 Spreadsheet	3
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Courses to be taken Spring Semester

RRT	101 History of Railroading	3
ENGL	111 Written Communication I	3
BUS	100 Intro to Business	3

Diesel Machinist

METL	155 Machining Processes	3
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Electronics

EET	103 Electronics Fundamental I	5
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General Maintenance

EET	110 Electronics Survey I	3
METL	140 Intro to Welding & Cutting	3

Diesel Power

DIES	204 Intro to Hydraulics/Pneumatics	2
DIES	214 Intro to Hydraulics/Pneumatics lab	2

Welding

METL	150 Shielded Metal Arc Welding	3
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Computer Programming

CIS	155 Programming Level I	3
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Management

CIS	285 Spreadsheet	3
BUS	120 Leadership & Quality Mgmt.	3

Office
 BUED 230 Office Skills 3

Office
 BUED 230 Office Skills 3

SOPHOMORE YEAR

Courses to be taken Fall Semester

RRT 201 Railroad Operations 3
 PHYS 114 Found. of Physical Science 4
 ENGL 112 Written Communication II 3
 Soc Science/Econ 3

Diesel Machinist

METL 140 Intro To Welding & Cutting 3
 METL 155 Machining Processes 3

Electronics

EET 207 Digital Fundamentals 5

General Maintenance

DIES 204 Intro to Hydraulics/Pneumatics 2
 DIES 214 Intro to Hydraulics/Pneumatics lab 2

Diesel Power

DIES 262 Diesel Diagnosis & Repair 2
 DIES 272 Diesel Diagnosis & Repair lab 4

Welding

METL 260 Repair & Maintenance Welding 3

Computer Programming

CIS 255 Programming Level II 3
 CIS 270 Systems Analysis & Design 4

Management

BUED 280 Business Applications 3
 OR

CIS 285 Spreadsheet 3

Office

ACCT 261 Prin. of Accounting I 3
 BUED 280 Business Applications 3

Courses to be taken Spring Semester

RRT 202 Railroad Safety, Envir. & Quality 3
 CHEM 111 General Chemistry 3
 SPCH 141 Fund. of Speech 3
 HPE 234 First Aid & CPR 2

SELECT THE COURSES REQUIRED FOR YOUR AREA CHOICE

Diesel Machinist

METL 270 Product Development 3

Electronics

EET 204 Electronics Fundamental II 4

General Maintenance

BODY 143 Refinishing 3

Diesel Power

DIES 116 Diesel Fuel systems 3

Welding

METL 285 Weld Certification Proc. I 3

Computer Programming

CIS 171 Database Level I 3
 CIS 285 Spreadsheet 3

Management

BUS 271 Legal Envir. of Business 3

Office

BUED 238 Automated Office 3

SOPHOMORE YEAR

Courses to be taken Fall Semester

RRT 201 Railroad Operations 3
 PHYS 114 Found. of Physical Science 4
 ENGL 112 Written Communication II 3
 Soc Science/Econ 3

Diesel Machinist

METL 140 Intro To Welding & Cutting 3
 METL 265 Intro to CNC/CAM 3

Electronics

EET 207 Digital Fundamentals 5

General Maintenance

DIES 204 Intro to Hydraulics/Pneumatics 2
 DIES 214 Intro to Hydraulics/Pneumatics lab 2

Diesel Power

DIES 262 Diesel Diagnosis & Repair 2
 DIES 272 Diesel Diagnosis & Repair lab 4

Welding

METL 185 Metal Fab I 3

METL 260 Repair & Maintenance Welding 3

Computer Programming

CIS 255 Programming Level II 3
 CIS 270 Systems Analysis & Design 4

Management

BUED 280 Business Applications 3
 OR

CIS 285 Spreadsheet 3

Office

ACCT 261 Prin. of Accounting I 3
 BUED 280 Business Applications 3

Courses to be taken Spring Semester

RRT 202 Railroad Safety, Envir. & Quality 3
 CHEM 111 General Chemistry 3
 SPCH 141 Fund. of Speech 3
 HPE 234 First Aid & CPR 2

SELECT THE COURSES REQUIRED FOR YOUR AREA

Diesel Machinist

METL 270 Product Development 3

Electronics

EET 204 Electronics Fundamental II 4

General Maintenance

BODY 143 Refinishing 3

Diesel Power

DIES 116 Diesel Fuel systems 3

Welding

METL 285 Weld Certification Proc. I 3

Computer Programming

CIS 171 Database Level I 3
 CIS 285 Spreadsheet 3

Management

BUS 271 Legal Envir. of Business 3

Office

BUED 238 Automated Office 3

MONTANA STATE UNIVERSITY - NORTHERN

College of Technical Sciences

Student Education Plan/Program Sheet

RAILROAD MAINTENANCE & OPERATIONS

Associate of Applied Science Degree

63 - 70 Required Program Semester Credits

draft

Program sheet for catalog year: 2000-2001

Major Title: RAILROAD MAINTENANCE & OPERATIONS ASSOCIATE of APPLIED SCIENCE DEGREE

Major Code: Associate of Applied Science A18

ADVISOR'S CHECKLIST OF ASSOCIATE OF APPLIED SCIENCE DEGREE GRADUATION REQUIREMENTS:

All Associate/Associate of Applied Science degrees require the following, plus course requirements under specific programs:

_____ **General Education Core** --

A. Writing: ENGL 111

B. Speech: SPCH 141 or SPCH 142

C. Mathematics: MATH 110, 112, or higher level MATH course

D. Computing: CIS 110 or higher level CIS course

_____ *Distribution Requirements Completed -- may not include courses used to meet General Education Core listed above. Students in A.A.S. degree programs must complete a minimum of 3 credits in at least two of the four distribution areas for a total of 6 distribution credits. Courses required in the student's major program may also be counted to meet distribution requirements (fulfill Area D).*

A. Humanities - 3 credits (ART, DRMA, ENGL, FREN, GER, GDSN, HUM, MUS, NAS, PHIL, SPAN, SPCH)

B. Social Sciences - 3 credits (ECON, GEOG, HIST, POL, PSYC, SOC, SOSC)

C. Mathematics/Science - 3 credits (BIOL, CHEM, CIS, ESCI, GSCI, MATH, NSCI, PHYS, TSCI)

D. Technology/Applied Arts - 3 credits (fulfilled by program requirements)

_____ At least 15 of the total credits must be taken at MSU-Northern for an A.A.S. degree.

_____ Some programs may include additional requirements for graduation. If so, they will be noted in the recommended sequence for any individual programs.

_____ An Associate of Applied Science degree has a minimum of 60 credits and a maximum of 72 credits.

_____ Advisor's initials present for each required course and substitution

_____ No more than 6 credits total of independent study (designated X99) may be applied toward an A.A.S. degree

Indicates courses used to meet basic skills requirements

Indicates courses used to meet distribution requirements

Student

Advisor

College Dean

SOPHOMORE YEAR

	Courses to be taken Fall Semester	a Pref/No.	Action/Explanation Substitution or Waiver?	Sem.		
				Crs.	Grade	Adv.
RT	201 Railroad Operations	3				
PHYS	114 Found. of Physical Sci. (Area C)	4				
ENGL	112 Written Communication II	3				
	Gen Ed (Area A-B Hum/Soc Sci)	3				

SELECT THE COURSES REQUIRED FOR YOUR AREA CHOICE

Diesel Machinist

METL	140 Intro To Welding & Cutting	3				
METL	265 Intro to CNC/CAM	3				

Electronics

EET	207 Digital Fundamentals	5				
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General Maintenance

DIES	204 Intro to Hydraulics/Pneumatics	2				
DIES	214 Intro to Hydraulics/Pneumatics lab	2				

Diesel Power

DIES	262 Diesel Diagnosis & Repair	2				
DIES	272 Diesel Diagnosis & Repair lab	4				

Welding

METL	185 Metal Fabrication I	3				
METL	260 Repair & Maintenance Welding	3				

Computer Programming

CIS	255 Programming Level II	3				
CIS	270 Systems Analysis & Design	4				

Management

BUED	280 Business Applications OR	3				
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AS	285 Spreadsheet	3				
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Office

ACCT	261 Prin. of Accounting I	3				
BUED	280 Business Applications	3				

Courses to be taken Spring Semester

		a Pref/No.	Action/Explanation Substitution or Waiver?	Sem.		
				Crs.	Grade	Adv.
RRT	202 Railroad Safety, Envir. & Quality	3				
CHEM	111 General Chemistry	3				
SPCH	141 Fund. of Speech	3				
HPE	234 First Aid & CPR	2				

SELECT THE COURSES REQUIRED FOR YOUR AREA CHOICE

Diesel Machinist

METL	270 Product Development	3				
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Electronics

EET	204 Electronics Fundamental II	4				
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General Maintenance

BODY	143 Refinishing	3				
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Diesel Power

DIES	116 Diesel Fuel Systems	3				
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Welding

METL	285 Weld Certification Proc. I	3				
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Computer Programming

CIS	171 Database Level I	3				
CIS	285 Spreadsheet	3				

Management

BUS	271 Legal Envir. of Business	3				
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Office

BUED	238 Automated Office	3				
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