

ACADEMIC SENATE PROPOSAL TRACKING SHEET
(Document To Be Originated By the Academic Senate Secretary On Canary Color Paper)

Proposal # 16-15	Title: Diesel Technology - NAPS Equal. Certificate
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(Proposal explanation, submitter and college dean signatures on attached program/degree or course revision form.)

All proposals **MUST** have their originating college faculty body (Ex: Arts & Sciences, Education and Nursing; Technical Sciences) approval and must be signed by the submitter and the college dean before being submitted to the Academic Senate Secretary.

1. Submit all proposals (using the appropriate Academic Senate program/degree and/or course revision forms or General Education Inclusion form) to the Academic Senate Secretary. **NOTE: Level 1 or Level 2 forms must be submitted concurrent with this proposal where applicable. For Education proposals, PEU approval must be received prior to forwarding the proposal to the Senate.**

2. The Academic Senate Secretary logs and numbers items and forwards them to the appropriate Academic Senate subcommittee(s): General Education (if applicable), or Curriculum. A transmittal e-mail will be sent to the Recording Secretary of the receiving committee, cc Provost's Administrative Assistant, by the Academic Senate Secretary. A digital copy of the proposal will be linked on the Academic Senate Proposal page by the Academic Senate Secretary.

3. The Academic Senate subcommittee(s) consider(s) the proposal. If approved, the proposal is returned to the Academic Senate Secretary for forwarding to the next committee. If a committee disapproves the proposal, the originator may request that the item be forwarded to the next body for consideration. The committee will provide written rationale to the originator, via the Academic Senate, when a proposal is disapproved and the proposal is returned to the originator. Upon completion of committee action, the proposal will be returned to the Academic Senate Secretary, and a transmittal e-mail sent by the Committee Recorder to the Senate Secretary, cc Provost's Administrative Assistant.

4. The Academic Senate considers the proposal and recommends approval or disapproval. If approved, the proposal is forwarded to the Provost for consideration. If the Academic Senate disapproves the proposal, the originator may request that the item be forwarded to the Full Faculty for consideration, utilizing the procedures set forth in the Senate Bylaws. The Academic Senate will provide written rationale to the originator when proposals are disapproved and the proposal is returned to the originator.

5. Approved proposals will be forwarded to the Provost. The Provost approves or disapproves the proposal. If approved, the proposal is then forwarded to the Chancellor. From this point forward, the Provost's Administrative Assistant will update the Proposal page on the website by contacting the webmaster.

7. The Chancellor approves or disapproves the proposal.

8. The proposal will then either be implemented or referred to MSU for further action. The tracking page on the Provost site will be updated as required.

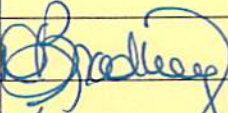

Subcommittee and Academic Senate college representatives will notify their respective colleges' of the progress of submitted proposals or the proposal may be tracked via the web page -- <http://www.msun.edu/admin/provost/senate/proposals.htm>

Documentation and forms for the curriculum process is also available on the web page: <http://www.msun.edu/admin/provost/forms.htm>

*****If a proposal is disapproved at any level, it is returned through the Academic Senate secretary and the Senate President, to the Dean of the submitting college who then notifies the originator.

See back for tracking form



	Date	Action Taken	Signature	Date	Comments/Reason for Disapproval	Sent to	Date	Transmittal E-mail sent
*Abstract received by Senate Secretary		Copy to Senate President. Forward to Provost.						
*Provost		<input type="checkbox"/> Abstract Approved <input type="checkbox"/> Disapproved						
Received by Senate Secretary	10/3/16	Tracking form initiated		10/3/16	has to be reworked	GEN ED		
General Education Committee (if applicable)	NA	<input type="checkbox"/> Approved <input type="checkbox"/> Disapproved	J. Hildebrand	11/07/16	No bened Component	D. Bradley	11/15/16	handed
Curriculum Committee (if applicable)	12/1/16	<input checked="" type="checkbox"/> Approved <input type="checkbox"/> Disapproved		12/2/16	Approved w/ corrections to objective	snote	12/2/16	
Academic Senate	12/13/16	<input checked="" type="checkbox"/> Approved <input type="checkbox"/> Disapproved	Law Sells	12/13/16				
Full Faculty (if necessary)		<input type="checkbox"/> Approved <input type="checkbox"/> Disapproved						
Provost	1-10-17	<input checked="" type="checkbox"/> Approved <input type="checkbox"/> Disapproved	Wm. J. Pegg	1-10-17		Chancellor	1-10-17	
Chancellor	1-10-17	<input checked="" type="checkbox"/> Approved <input type="checkbox"/> Disapproved	Angie Kozl	1-10-17				
MSU		<input type="checkbox"/> Approved <input type="checkbox"/> Disapproved	Notified of new certificate					
BOR		<input type="checkbox"/> Approved <input type="checkbox"/> Disapproved	Notified of new certificate					
NWCCU		<input type="checkbox"/> Approved <input type="checkbox"/> Disapproved						
Provost		Advise originating college and Academic Senate of status. Update Web page.						
Registrar		Catalog/Policy Manual Update						

NOTE: The secretary of the Academic Senate will update the Academic Senate Proposal web page from initial receipt until the proposal reaches the Provost. The Provost's Administrative Assistant will ensure that the current status of each proposal is maintained on the Academic Senate Proposal web page from that point forward.

***Abstract and pre-approval required for new programs ONLY.**



MONTANA STATE UNIVERSITY NORTHERN

Academic Senate Tracking Sheet Correction Form

Date: _____

Proposal #: _____

Title: _____

Page (s) # of the correction (s) that need to be made: _____

Brief description of the correction to be made: _____

Name of Person making the correction: _____

Phone #: _____

Date returned back to Senate Secretary: _____

PROGRAM/DEGREE REVISION FORM

NEW X DROPPED _____ MAJOR REVISION _____ FOR INFORMATION ONLY _____

College Technical Sciences Program Area NARS Electrical Certificate Date 02/26/2016

Submitter [Signature] Dean [Signature] Date 9/27/16
Signature Signature (indicates "college" level approval)

Please provide a brief explanation & rationale for the proposed revision(s).

This program is an industry recognized curriculum leading to a certificate for work as an electrician on Rail Engine equipment.

Please provide in the space below a “before and after” picture of the program with the changes in the program noted. Attach appropriate Course Revision Forms. Please indicate changes by shading the appropriate cells.

PROPOSAL TITLE Diesel Technology – NARS Electrical Certificate

**Current Program listed
in 05-06 Catalog**

Course Prefix	#	Course Title	Credits
Total			

**Proposed Program
for 15-16 Catalog**

Course Prefix	#	Course Title	Gen-Ed Credits	Degree Credits
NARS	142	Locomotive Electricity		3
NARS	143	Low Horsepower Electrical		3
NARS	144	EMD Basic Electrical		3
NARS	145	GE Dash 8/9 Electrical Systems		3
Total				12

Additional instructional resources needed (including library materials, special equipment, and facilities). Please note: approval does not indicate support for new faculty or additional resources.

COURSE REVISION FORM

NEW X DROPPED _____ MAJOR REVISION _____ FOR INFORMATION ONLY _____

College Technical Sciences Program Area NARS - Electrical Certificate Date 2/26/2016

Submitter Steven Don. Dean [Signature] Date 9/27/16
Signature Signature (indicates "college" level approval)

Please provide a brief explanation & rationale for the proposed revision(s):

This is a new course proposed as part of the nationally recognized National Academy of Railroad Sciences (NARS) curriculum.

Please provide the following information:

College: College of Technical Sciences

Program Area: Diesel Technology - NARS

Date: 12/17/14

Course Prefix & No.: NARS 142

Course Title: Locomotive Electricity

Credits: 3

Required by: Locomotive Electrical Certificate

Selective in:

Elective in:

General Education:

Lecture: 3

Lecture/Lab:

Gradable Lab:

Contact hours lecture:

Contact hours lab:

Current Catalog Description (include all prerequisites):

NA

Proposed or New Catalog Description (include all prerequisites):

This course is an introductory course in Electrical Systems for locomotive equipment. It is one of four courses required for the Locomotive Electrical Certificate (RRT 142)

Course Outcome Objectives:

At the end of this course, students will be able to (from the NARS curriculum student book):

1. Explain the methods of generating electrical current.
2. Define electrical terms relating to Ohm's and Watt's laws.
3. Identify basic electrical schematic symbols
4. Explain direct current (DC) series, parallel, and combination circuits.
5. Discuss the basic principles of magnetism
6. Explain the operation of DC motors and generators.
7. Discuss the basic principles of alternating current (AC).
8. Define capacitor, inductor, and transformer.

Additional instructional resources needed (including library materials, special equipment, and facilities). Please note: approval does not indicate support for new faculty or additional resources.

A basic electrical/electronic lab with components and test equipment to construct test circuits and perform measurements to demonstrate the principles contained in the course objectives.

Updated 09/29/05

COURSE REVISION FORM

NEW X DROPPED _____ MAJOR REVISION _____ FOR INFORMATION ONLY _____

College Technical Sciences Program Area NARS - Locomotive Elect Certif Date 2/26/2016

Submitter Steven Dow Dean [Signature] Date 2/27/14
Signature (indicates "college" level approval)

Please provide a brief explanation & rationale for the proposed revision(s):

This is a new course proposed as part of the nationally recognized National Academy of Railroad Sciences (NARS) curriculum.

Please provide the following information:

College: College of Technical Sciences

Program Area: NARS - Locomotive Electrical Certificate

Date: 12/17/14

Course Prefix & No.: NARS 143

Course Title: Low Horsepower Electrical

Credits: 3

Required by: Locomotive Electrical Certificate

Selective in:

Elective in:

General Education:

Lecture: 3

Lecture/Lab:

Gradable Lab:

Contact hours lecture:

Contact hours lab:

Current Catalog Description (include all prerequisites):

NA

Proposed or New Catalog Description (include all prerequisites):

This course will cover specific areas of the low horsepower electrical system on an EMD locomotive, including theory, operation and troubleshooting. It is one of four courses required for the Locomotive Electrical Certificate (RRT 143)

Course Outcome Objectives:

At the end of this course, students will be able to (from the NARS curriculum student book):

1. Interpret EMD schematic diagrams
2. Explain the operation of the NW2 battery and lighting circuits.
3. Explain the operation of the NW2 propulsion system.
4. Explain the operation of the NW2 excitation system.
5. Explain the operation of the NW2 transition system.
6. Describe troubleshooting of the NW2 cooling system.
7. Interpret the schematics of the NW2 Wheelslip, Ground Relay, and motor Cut-out system.
8. Identify the components of the SW15 MU Control, Headlight Circuit, Fuel, Propulsion and Excitation Systems

9. List the steps in the voltage to current (E/I) Transition.

10. Identify electrical components in the E/I transition system.

Additional instructional resources needed (including library materials, special equipment, and facilities). Please note: approval does not indicate support for new faculty or additional resources.

A basic electrical/electronic lab with components and test equipment to construct test circuits and perform measurements to demonstrate the principles contained in the course objectives. EMD simulators and test equipment will be required.

Updated 09/29/05

COURSE REVISION FORM

NEW DROPPED MAJOR REVISION FOR INFORMATION ONLY

College Technical Sciences Program Area NARS – Electrical Certificate Date 2/26/2016

Submitter [Signature] Dean [Signature] Date 9/27/14
Signature (indicates "college" level approval)

Please provide a brief explanation & rationale for the proposed revision(s):
This is a new course proposed as part of the nationally recognized National Academy of Railroad Sciences (NARS) curriculum.

Please provide the following information:

College: College of Technical Sciences

Program Area: NARS – Electrical Certificate

Date: 12/17/14

Course Prefix & No.: NARS 144

Course Title: EMD Basic Electrical

Credits: 3

Required by: Locomotive Electrical Certificate

Selective in:

Elective in:

General Education:

Lecture: 3

Lecture/Lab:

Gradable Lab:

Contact hours lecture:

Contact hours lab:

Current Catalog Description (include all prerequisites):

NA

Proposed or New Catalog Description (include all prerequisites):

This course will cover specific systems on an EMD locomotive, including theory, operation and troubleshooting. One of four courses required for the Locomotive Electrical Certificate (RRT 144)

Course Outcome Objectives:

At the end of this course, students will be able to (from the NARS curriculum student book):

1. Describe basic electrical relationships and terminology as applied to locomotive electrical systems.
2. Interpret the schematic diagrams of the EMD Dash-2 electrical system.
3. Explain the operation of the fuel system, and identify components of the engine starting system.
4. Describe the operation of the Turbo-Lube and Engine Purge systems.
5. List the steps in the operation of the AC auxiliary generator and companion alternator.
6. Explain the reversing motor switchgear operation.
7. List the steps in setting up the EMD motor operation.
8. Explain the operation of the manual, lead axle, emergency and wheel slip sanders.

Additional instructional resources needed (including library materials, special equipment, and facilities). Please note: approval does not indicate support for new faculty or additional resources.

A basic electrical/electronic lab with components and test equipment to construct test circuits and perform measurements to demonstrate the principles contained in the course objectives. EMD simulators and test equipment will be required.

Updated 09/29/05

COURSE REVISION FORM

NEW X DROPPED _____ MAJOR REVISION _____ FOR INFORMATION ONLY _____

College Technical Sciences Program Area NARS – Electrical Certificate Date 2/26/2016

Submitter Steve Dan - Dean [Signature] Date 9/27/14
Signature Signature (Indicates "college" level approval)

Please provide a brief explanation & rationale for the proposed revision(s):

This is a new course proposed as part of the nationally recognized National Academy of Railroad Sciences (NARS) curriculum.

Please provide the following information:

College: College of Technical Sciences

Program Area: NARS – Electrical Certificate

Date: 12/17/14

Course Prefix & No.: NARS 145

Course Title: GE Dash 8/9 Electrical Systems

Credits: 3

Required by: Locomotive Electrical Certificate

Selective in:

Elective in:

General Education:

Lecture: 3

Lecture/Lab:

Gradable Lab:

Contact hours lecture:

Contact hours lab:

Current Catalog Description (include all prerequisites):

NA

Proposed or New Catalog Description (include all prerequisites):

This course will cover specific systems on the General Electric Dash 8/9 locomotive engine series, including theory, operation and troubleshooting. It is one of four courses required for the Locomotive Electrical Certificate (RRT 145)

Course Outcome Objectives:

At the end of this course, students will be able to (from the NARS curriculum student book):

1. Interpret GE Dash 8/9 schematic diagram.
2. Use microprocessor controls for CAB, EXC, AUX and DID.
3. Explain and troubleshoot the engine cranking system
4. Explain battery charging and auxiliary alternator control.
5. Demonstrate proper use of engine speed control.
6. Identify dynamic braking system components.
7. Describe wheel slip and explain corrective measures for it.
8. Demonstrate the proper operation of ground detection system.
9. Explain and troubleshoot the 74 VDC distribution and fuel pump circuit.

Additional instructional resources needed (including library materials, special equipment, and facilities). Please note: approval does not indicate support for new faculty or additional resources.

A basic electrical/electronic lab with components and test equipment to construct test circuits and perform measurements to demonstrate the principles contained in the course objectives. GE simulators and test equipment will be required.

Updated 09/29/05