St. Lawrence-Lewis BOCES
Board of Education Presentation
Educational Services Center
June 8, 2017 – 5:30 p.m.

Program Re-Approval 2016-2017

A. Program Information

NYSED approval of three CTE programs; **Automotive Technologies, Building Trades and Graphic Communications** will expire on June 30, 2017.

Program of Study	Credits Approved	Yr. Approved Re-approved	Program Review	Re-approval Date
Automotive Technology CIP #47.0604 Non-trad -Female	1 Unit Integrated Math 1 Unit Integrated Science	20012-2013	4/5/2017	9/2017
Building Trades CIP #46.9999 Non-trad - Female	1 Unit Integrated Math 1 Unit Integrated Science	20012-2013	4/5/2017	9/2017
Graphic Communications CIP #10.0399 Non-trad - Female	1 Unit Integrated Math 1 Unit Specialized Science	20012-2013	4/5/2017	9/2017

Approval by New York State Education Department allows students to receive Technical Endorsement. They must be re-approved by NYSED this spring in order to be offered to our students as approved programs in September 2017.

Automotive Technology and Building Trades is offered at all the CTE Centers.

Graphic Communications is offered only at Northwest and Southwest CTE Centers.

B. Achievements

Program Achievements Since 2012-2013 (Does not include 2016-2017 school year statistics)				
CTE Program of Study	Students Completing since 2010-2011	Students Completing with Special Education Services	Students receiving Technical Endorsement	Percentage of students receiving Technical Endorsement
Automotive Technology	172	60	98	57%
Building Trades	135	40	101	75%
Graphic Communications	38	11	28	74%

C. Program Content

Curricular changes have been communicated to the component districts through:

- Superintendents CTE Sub Committee
- Secondary Principal Meetings hosted in districts throughout the BOCES
- Guidance Counselor meetings
- Math and Science teachers from the component districts received online access via Rubicon Atlas to curriculum materials in advance of the external review meeting held at Northwest CTE Center on April 5, 20157. The teachers attended the External Review meeting, spoke with students, and concluded their day with a meeting with the CTE Math and Science Consultant teachers, and were able to visit the classrooms and participate in reviewing student presentations.
- Math and Science Integration Support Document Review Meetings included certified Science and Math teachers from component districts; Ogdensburg City School, Heuvelton, and Lisbon Central Schools.

D. Work-Based Learning

All students completing the programs since approval have participated in work-based learning.

- On-Site projects
- Career Exploration Internship Program (CEIP)

E. Employability Profile

- The 21st century skills that refer to a broad set of knowledge, skills, work habits and character traits that are critically important to success in collegiate programs, contemporary careers and workplaces.

    - Creativity
    - Collaboration/Communication
    - Creativity & Innovation
    - Critical Thinking
    - Personal Management Skills
    - Interpersonal Skills
    - Technology Skills

- Course Competencies that are specific to each program of study and have been updated along with the curriculum.

- Will be generated from School Tool beginning in fall 2017

F. Technical Assessment (three parts)

- **Written and Practical:**
    - **Automotive Technologies** - National Occupational Competency Testing Institute (NOCTI): #4309 – Automotive Technician Core

- **Building Trades** - National Occupational Competency Testing Institute (NOCTI): #4115 Carpentry

- **Graphic Communications** - National Occupational Competency Testing Institute (NOCTI): #2425 – Visual Communications and Multimedia Design

- **Senior Project** – Designed by instructors with students and assessed by instructors through the use of a rubric

G. Articulated Credit and Dual Enrollment Agreements:

Students benefit with college credit and advanced standing at post-secondary institutions:

- **Automotive Technologies**
  - SUNY Canton
  - North Country Community College
  - Alfred State College
  - University of Northwest Ohio
  - Bryant and Stratton

- **Building Trades**
  - Alfred State College
  - Bryant and Stratton
  - Fulton Montgomery Community College

- **Graphic Communications**
  - SUNY Canton
  - Fulton Montgomery Community College
  - Mohawk Valley Community College
  - SUNY Cobleskill
  - Bryant and Stratton

H. Faculty and External Review Committee

- Mid and End of the Year Evaluation Meetings
- Program Indicators
- Self-study meetings conducted
- Advisory Committee Meetings for all programs
- External Review Meeting – April 5, 2017

I. Teacher Certification

Staff are highly qualified and hold NYS teacher certification in the academic content area(s) for which academic credit is being offered.

J. Staff Development (2013-2017)

- Comprehensive Behavior Management with Dr. Thomas Glanton of the Education Company.
- Understanding and Dealing with Challenging Students
- Effective Teaching
- Common Core State Standards Training (TCTW)
- Assessment Training (TCTW)
- Technology In-Service (Peer Presented-ongoing)
- Standards Shifts (Peer Presented-ongoing)
- Regional Visitations/Networking – program specific
- Project Based Learning with Marty Sugerik from SREB (Southern Regional Education Board)
- Project Based Learning Coach Training with Marty Sugerik from SREB (Southern Regional Education Board)
- Google Classroom and Google Drive

Request for Board Approval

Programs requesting St. Lawrence-Lewis BOCES BOE approval for 2016-2017.

- Automotive Technologies (SATC, NWT, & SWT)
- Building Trades (SATC, NWT, & SWT)
- Graphic Communications (NWT & SWT)

Programs scheduled for approval / re-approval 2017-2018:

- Culinary Arts (SATC, NWT & SWT)
- Metalworking Technologies (SATC, NWT & SWT)
- Heating, Ventilation & Air Conditioning/Refrigeration (SATC)

Automotive Technology-Year One
St. Lawrence-Lewis BOCES CTE Centers

Unit of Study	Unit Hours	Math Hours	Science Hours
I. Introduction to Automotive Technology	**80**		
A. Shop Operation		**4**	**1.5**
B. General Automotive Skills		**9**	**3.5**
C. Safety		**1.5**	**3**
D. Hazard Communication/Right-to-Know Laws		**1**	**1**
E. Measurement		**11**	**.5**
F. Hand Tools		**2**	
G. Power and Specialized Tools and Equipment			
H. Gas Metal Arc Welding (MIG)			**1**
I. Oxyacetylene Operations			
J. Reference Materials		**8**	
K. Fasteners			
II. Introduction to Engines	**75**		
A. Gasoline Engine Introduction, Seals and Lubrications		**10.5**	**3.5**
B. Cylinder Head and Valve Train Diagnosis and Repair		**4**	
C. Short Block Diagnosis and Repair			**2**
D. Engine Completion and Start-Up Procedures		**3**	**4**
E. Lubrication and Cooling System Diagnosis and Repair		**6.5**	**8.5**
III. Brakes Fundamentals	**96**		
A. Diagnosis and Repair Hydraulic Systems		**10**	**19**
B. Diagnosis and Repair Drum Brakes		**1**	
C. Diagnosis and Repair Disc Brakes		**2**	**.5**
D. Diagnosis and Repair Power Assist Brakes		**1.5**	**1**
IV. Steering and Suspension	**93**		
A. Steering Systems			
B. Diagnosis and Repair Front Suspension Systems		**1**	
C. Diagnosis and Repair Rear Suspension Systems			**.5**
D. Tire and Wheel Alignment Diagnosis and Repair		**7**	**7.5**
V. Drive Trains and Axles	**81**		
A. Clutch Diagnosis and Repair		**2.5**	
B. Manuel Transmission/Transaxle Diagnosis and Repair		**4.5**	**.5**

Unit of Study	Unit Hours	Math Hours	Science Hours
C. Drive Shaft, CV Joint, and FWD Bearings, Diagnosis and Repair		2	.5
D. Differential Diagnosis and Repair			1.5
E. Four-Wheel Drive Diagnosis and Repair			
F. In-Car Transmission and Transaxle Diagnosis and Repair			
G. Out-Of-Vehicle Transmission and Transaxle Repair			
VI. Career Planning	**25**		
A. Interest and Aptitudes			
B. Career Planning Key Terms			.5
C. Forming the Career Plan			
D. Career and Financial Management			.5
E. Participation in CTE Annual Calendar of Events for Career Planning			
F. Job Seeking Skills			
G. Job Keeping Skills			
H. Leadership			
I. Meetings/Procedures			
J. Entrepreneurship		3	
K. Consumer Education			
L. Communication Skills			
TOTAL HOURS	**450**	**95**	**60.5**

Automotive Technology-Year Two
St. Lawrence-Lewis BOCES CTE Centers

	Unit of Study	Unit Hours	Math Hours	Science Hours
I.	**Introduction to Automotive Technology-Review**	**43**		
	A. Shop Operation		**1**	**8**
	B. General Automotive Skills			
	C. Safety			
	D. Hazard Communication/Right-to-Know Laws		**1**	**1**
	E. Measurement			
	F. Hand Tools			
	G. Power and Specialized Tools and Equipment			
	H. Gas Metal Arc Welding (MIG)			
	I. Oxyacetylene Operations			
	J. Reference Materials			
	K. Fasteners			
II.	**New York State Inspection**	**25**		
	A. New York State License		**1**	**.5**
III.	**Automotive Electrical**	**150**		
	A. General Electrical System Diagnosis		**7.5**	**27.5**
	B. Battery Diagnosis and Service		**.5**	**5**
	C. Lighting System Diagnosis and Repair			**6**
	D. Starting System Diagnosis and Repair		**.5**	**1**
	E. Charging System Diagnosis and Repair			
	F. Ignition Systems			
	G. Restraints			
IV.	**Engine Performance, Fuel and Emissions**	**125**		
	A. Fuel and Emissions Systems		**2**	**9**
	B. Introduction to Onboard Diagnostics I (OBD-I)			
	C. Introduction to Onboard Diagnostics II (OBD-II)		**2**	**.5**
V.	**Automotive Air Conditioning**	**32**		
	A. Air Conditioning		**4.5**	**3**
	B. Heater Systems			
VI.	**Career Planning**	**25**		
	A. Interest and Aptitudes			

Unit of Study	Unit Hours	Math Hours	Science Hours
B. Career Planning Key Terms			
C. Forming the Career Plan			
D. Career and Financial Management			
E. Participation in CTE Annual Calendar of Events for Career Planning			
F. Job Seeking Skills			
G. Job Keeping Skills			
H. Leadership			
I. Meetings/Procedures			
J. Entrepreneurship			
K. Consumer Education			
L. Communication Skills			4
VII. Internship	**50**		
A. Students meeting qualifications and having available sites will work with an employer in the automotive technology field for a set period of time			
TOTAL HOURS	**450**	**20**	**65.5**

Building Trades – Year One
St. Lawrence-Lewis BOCES CTE Centers

Unit of Study		Unit Hours	Math Hours	Science Hours
I.	**Introduction**	**35**		
	A. Orientation			
	B. Safety		**3**	**12**
	C. Ladder and Scaffolding		**1**	**1**
II.	**Building Materials**	**35**		
	A. Dimensional Lumber		**8**	**10**
	B. Sheet Products		**4**	**6**
	C. Fasteners			**2**
	D. House wrap and vapor barriers			
III.	**Tools**	**75**		
	A. Hand Tools		**10**	**4**
	B. Power Tools		**2**	**2**
	C. Stationary Power Tools			**3**
IV.	**Plans/Specifications and Codes**	**20**		
	A. Drawings		**6**	
	B. Symbols and line types			**1**
	C. Schedules and specifications			**1**
	D. Building codes			**1**
V.	**Roofing**	**10**		
	A. Fall Protection			
	B. Asphalt shingle installation		**6**	**2**
	C. Ways for doing valleys			
VI.	**Window Installation**	**5**		
	A. Types of windows			
	B. Window Codes			**3**
	C. Window installation			
VII	**Site Layout**	**20**		
	A. Choosing the site			**2**
	B. Set up and operate leveling tools		**4**	
	C. Squaring methods		**4**	
	D. Set up and use better boards			
VIII	**Floor Framing**	**30**		
	A. Parts			
	B. Girder Construction			
	C. Engineered Lumber			
	D. Mudsill Installation			

	Unit of Study	Unit Hours	Math Hours	Science Hours
	E. Layouts – 16", 19.2", 24 on center			
	F. Floor Joists		2	
	G. Floor openings			
	H. Bridging			
	I. Estimations		3	
IX.	**Insulation**	30		
	A. Insulation Basics		2	6
	B. Types of insulation, installation and R-values		2	3
	C. Vapor Barriers			1
	D. Ventilation			3
X.	**Foundations**	30		
	A. Concrete		3	6
	B. Types of Foundations			1
XI.	**Interior Trim and Millwork**	40		
	A. Equipment Used; Safety, Operation and set up			
	B. Making		2	
	C. Finishing			
XII.	**Interior Finish**	25		
	A. Drywall installation		2	
	B. Drywall finish		1	
	C. Underlayment			
XIII.	**Wall Framing**	30		
	A. Layout a wall		8	2
	B. Construct a wall			
XIV.	**Roof Framing**	30		
	A. Roofs			
	B. Roof Sheathing		3	
	C. Roof Framing Methods		8	2
XV.	**Exterior Finish**	35		
	A. Vinyl Soffit and Fascia Installation			
	B. Install Vinyl siding accessories			
	C. Install vinyl siding		1	
	D. Bend coil stock		2	
	E. House Wrap			1
XVI.	**Career & College**	Integrated		
	A. Interest and Aptitudes			
	B. Career Planning Key Terms			
	C. Forming the Career Plan			
	D. Career and Financial Management			

Unit of Study	Unit Hours	Math Hours	Science Hours
E. Participation in CTE Annual Calendar of Events for Career Planning			
Total Hours	**450**	**87**	**75**

Building Trades – Year Two
St. Lawrence-Lewis BOCES CTE Centers

	Unit of Study	Unit Hours	Math Hours	Science Hours
I.	**Introduction – Review Year One**	**12**		
	A. Orientation			
	B. Safety		**1**	**2**
II.	**Safety Refresher**	**18**		
	A. Hand and Power Tools			
	B. Ladder and Scaffolding			
	C. Fall Protection			
	D. Air Tool safety			
III.	**Site Layout**	**10**		
	A. Diagonals		**1**	
	B. Squaring		**2**	
	C. Elevations		**1**	**2**
IV.	**Floor Framing**	**25**		
	A. Plans, Specifications and Code			**1**
	B. Construction Techniques		**12**	**2**
V.	**Wall Framing**	**25**		
	A. Plans, Specifications and Code			
	B. Construction Techniques		**8**	**.5**
VI.	**Stairs**	**15**		
	A. Plans, specifications and Codes			
	B. Parts, Types and Code			**.5**
	C. Construction Techniques		**5**	
	D. Railings			
VII.	**Roof Framing**	**25**		
	A. Plans, Specifications and Codes			
	B. Slope and Pitch		**2**	
	C. Rafter Layout		**5**	
	D. Constructing a Trussed roof		**5**	
VIII.	**Roofing**	**15**		
	A. Plans, Specifications and Codes			
	B. Safety			
	C. Underlayments		**1**	
	D. Installation of shingles			
	E. Flashing and venting		**2**	**3**
IX.	**Exterior Finish**	**20**		
	A. Vinyl Trim Accessories			
	B. Exterior Doors			
	C. Windows			

	Unit of Study	Unit Hours	Math Hours	Science Hours
X.	**Plumbing**	**35**		
	A. DWV Systems		**2**	**6**
	B. Potable water systems			
	Provisional topics			
	- Site selection			*1*
	- Septic systems			*2*
XI.	**Residential Wiring**	**100**		
	A. Plans, Specifications, Code and Safety		**4.5**	**20**
	B. Rough in			
	C. Service Entrances			**1.5**
	D. Devices			**14**
XII.	**Interior Finish**	**30**		
	A. Drywall Installation		**1**	**2**
	B. Drywall Finish			
	C. Priming and Painting		**5**	**5**
	D. Texturing ceilings			
XIII.	**Interior Trim**	**40**		
	A. Trim installation		**3**	
	B. Closet systems			
	C. Installation of interior doors		**2**	
	D. Installing T&G pine			
XIV.	**Cabinets**	**20**		
	A. Kitchen design & blueprints			
	B. Installing		**3**	
	C. Countertop construction			
	D. Installing ceramic tile			
XV.	**Electrical and Plumbing Fixtures**	**10**		
	A. Electrical Devices and Fixtures			
	B. Plumbing Fixtures			
XVI.	**Internship**	**50**		
	A. Students meeting qualifications and having available sites will work with an employer in the building trades field for a set period of time.			
	B. Students may complete their internship working on the House Project.			
XVII.	**Career Planning**	**Integrated**		
	A. Interest and Aptitudes			
	B. Career Planning Key Terms			
	C. Forming the Career Plan			
	D. Career and Financial Management		**3**	

Unit of Study	Unit Hours	Math Hours	Science Hours
E. Participation in CTE Annual Calendar of Events for Career Planning.			
Total Hours	**450**	**68.5**	**59.5**

Graphic Communications – Year One
St. Lawrence-Lewis BOCES CTE Centers

Unit of Study	Unit Hours	Math Hours	Science Hours
I. Orientation and Classroom Safety	**8**	**1**	**5**
II. A. Communication Theory – PC	**36**		
A. Basic Computer Operations		**2**	
B. Communication Concepts		**1**	**6**
C. Evolution of Communication Media			**6**
D. Electronic Spectrum/Telecommunications		**3**	**3**
II. B. Communication Theory – MAC	*36*		
A. Basic Computer Operations		*2*	
B. Communication Concepts		*1*	*6*
C. Evolution of Communication Media			*6*
D. Electronic Spectrum/Telecommunications		*3*	*3*
III. Presentations/Public Speaking	**50**		
A. Power Point		**2**	**8**
B. Google Slides			
C. Prezi and Other Online Platforms			
D. Effective Public Speaking Skills			
IV. 2D Animations	**70**		
A. New Movie Set UP		**9**	**6**
B. Interface & Tools			
C. Timeline			
D. Layers			
E. Drawing, Painting & Shape Tools			
F. Tweening			
G. Importing Graphics to Library			
H. Planning & Designing a Story			
I. Preview, Test, Optimize, Publish & Export			
V. 3D Animation	**71**		
A. Drawing, Painting and Shading tools		**22**	**8**
B. Tracing Modes			
C. Texture Maps			
D. Camera views			
E. Lighting			
F. Animation			
G. Rendering			
VI. Intro to the Internet/Web page design	**50**		
A. Intro to Web Pages and HTML Basics			
B. Using Tags			
C. Text/Body Attributes			

Unit of Study	Unit Hours	Math Hours	Science Hours
D. Graphical Elements/Images			
E. Linking Pages			
F. Using Tables			
G. Using Frames			
H. Interactive forms			
I. Cascading Style Sheets			
J. Drag & Drop Free Web Programs			
VII. Digital Video Production	**93**		
A. Video Production Theory			
B. Planning a movie		**2**	**5**
C. Editing			
VIII. Intro to Desktop Publishing	**47**		
A. Navigation, Interface & Workspace		**1**	**5**
B. Basic Tools			
C. Layout and Design principles			
D. Typography			
E. Panels			
F. Images			
IX. Career and College Preparation	**25**		
A. Word Processing		**5**	**2**
B. CTE Annual Calendar of Events for Career Planning			
TOTAL HOURS	**450**	**48**	**54**

Graphic Communications – Year Two
St. Lawrence-Lewis BOCES CTE Centers

	Unit of Study	Unit Hours	Math Hours	Science Hours
I.	**Orientation and Classroom Safety**	**10**		
	A. Curriculum & Grading Review		**1**	
	B. Safety & Emergency Procedures		**2**	**4**
	C. Code of Conduct/Classroom and School Policies			
	D. Network File Server (NWT Only)			
II.	**Typography**	**15**		
	A. History of Type		**1**	
	B. Font Type Definitions			
	C. Categories of Type			
	D. Type Anatomy			
	E. Type Layout			
	F. Type Measurement			
	G. Type Design			
III.	**Vector Drawing & Graphics with Adobe Illustrator**	**40**		
	A. Intro to computer drawing			
	B. Paths			**2**
	C. Transforming Objects			
	D. Fills and Strokes			
	E. Text features			
	F. Special Graphic Features			
	G. Logo Design			
IV.	**Color Theory**	**17**		
	A. Emotional and psychological effects of color		**1**	**7.5**
	B. Color Harmony and Color Schemes			
	C. The Color Wheel			
	D. Color Processes			
V.	**Desktop Publishing**	**160**		
	A. New Document Setup		**30**	**8**
	B. Interface			
	C. Objects			
	D. Color			
	E. Type			
	F. Images			
	G. Preflight & Packaging			
VI.	**Digital Photography**	**37**		
	A. Essential components of digital cameras		**3**	**20.5**
	B. Camera Settings & Modes			

	Unit of Study	Unit Hours	Math Hours	Science Hours
	C. ISO, Aperture, Shutter Speed			
	D. Composition			
	E. Lighting exposure theory and techniques			
	F. Image organization			
	G. Preparing and planning of photo shoots			
VII.	**Publishing Theory**	**42**		
	A. Copyright			
	B. Printing Customs		**1**	
	C. Printing Cycle/Training Processes		**1**	**2**
	D. History and Evolution of Printing			**2**
	E. Printing Services			**4**
	F. Print Shop Organization			
	G. Printing Methods			
	H. Cost Estimation		**6**	
VIII.	**Image Editing**	**60**		
	A. File Formats		**7**	
	B. New Document Setup and Navigation		**3**	
	C. Tools			
	D. Layers			
	E. Color modes			
	F. Image Adjustment & Advanced Editing			
	G. Working with Type			
IX.	**Design Theory**	**20**		
	A. Design Process		**4**	
	B. Design Principles & Concepts			
	C. Design Elements			
	D. Drawing to Scale			
X.	**College and Career Readiness**	**39**		
	A. Internship and Work Shadowing			
	B. Career Planning		**3**	
	C. The Career Selection Process			
	D. Career Success			
	E. Portfolio			
XI.	**Marketing/Advertising (MAC)**	**10**		
	A. Magazine/Newspaper Advertising			
	B. Propaganda & Persuasion			
	C. Photojournalism			
	D. Package Design			
	E. Mass Media Advertising			**4**
	F. Advertising Psychology			
TOTAL HOURS		**450**	**63**	**54**