BACKstage Exam
Curriculum Guide and Resources

Topics included in the exam are:

Audio (Sound Reinforcement)

Counterweight Rigging and General Rigging

Costume Design, Wardrobe and Construction

Lighting and Electrics

Scenic Construction

Venues

Theatre Safety (applied to each area)

Audio

1. Utilization of sound reinforcement equipment
   a. terminology
   b. mixing board functionality
   c. microphone types/functionality/usage
   d. speaker types and placement
   e. audio principles and theory
   f. wireless technologies and theory
   g. troubleshooting
   h. safe practice

2. Sound Design
   a. terminology
   b. editing software
   c. sound creation
   d. historical musical styles/periods
   e. script analysis

Counterweight Rigging and General Rigging

1. Counterweight rigging (types)
   a. terminology
   b. single purchase
   c. double purchase
   d. loads, ratios and physics
   e. system components
   f. system functionality
   g. rigging inspections
   h. safe practice

2. Automated Rigging
   a. terminology
   b. types (fully automated, hybrid, custom)

      c.   functionality
      d.   rigging inspections
      e.   safe practice

3. General Rigging
   a. terminology
   b. terminations (knots, wire rope clips, compression sleeves)
   c. wire rope
   d. natural rope/synthetic rope
   e. safe working loads
   f. design factor (5:1, 8:1, 10:1)
   g. computation of design factor, de-rated terminations and other factors
   h. safe practice

Costume Design and Construction

1. Types of Costumes
   a. terminology
   b. gender
   c. style period/historical period
   d. fabrics
   e. sketching

2. Costume fabrication
   a. terminology
   b. construction materials, tools and hardware
   c. construction techniques
   d. actor fittings
   e. finishing techniques including dyeing and painting
   f. repairs
   g. general costume maintenance
   h. repurposing exiting garments/costumes
   i. safe practice

Lighting and Electrics

1. Design
   a. terminology
   b. image research
   c. script analysis
   d. fixture types and functionality
   e. color theory
   f. color temperature
   g. rendering
   h. drafting the plot/paperwork
   i. creating a shop order

2. Reading and hanging the plot
   a. terminology
   b. Interpreting paperwork (plot/instrument schedule/channel hookup, etc.)
   c. hanging fixtures
   d. focus
   e. electrical cable and cable management

      f.   accessories (color frame/gobo/iris/top hat, etc.)

3. Electricity
   a. terminology
   b. dimming
   c. power distribution
   d. electrical theory and computation (West Virginia formula, etc.)
   e. connectors commonly used in theatre
   f. wiring connectors and plugs
   g. NFPA 70: National Electrical Code ®
   h. safe practice

4. Communication Protocols
   a. terminology
   b. AMX, DMX512a
   c. Ethernet
   d. connectors

5. Multi-Parameter Fixtures (moving lights, LED, etc.)
   a. terminology
   b. types of fixtures
   c. programming (fixture, board)
   d. power requirements
   e. communication protocols

Personnel

1. Front of House
   a. House Management
   b. Box Office
   c. Producer

2. Production Personnel
   a. Director
   b. Stage Manager
   c. Choreographer
   d. Cast
   e. Dance Captian
   f. Lighting Designer
   g. Scenic Designer
   h. Sound Designer
   i. Master Electrician
   j. Head Carpenter
   k. Technical Director
   l. Stage Crew (Running Crew)
   m. Wardrobe/Costuming
   n. Wardrobe Mistress (Master, Head)
   o. Stitchers

Scenic Construction

1. Design
   a. terminology
   b. research
   c. sketching
   d. 3D rendering (Sketchup, etc.)
   e. model making
   f. drafting
   g. tools
   h. construction materials

2. Construction
   a. terminology
   b. reading blueprints
   c. measurement
   d. construction materials
   e. tools
      1. hand
      2. power
   f. joinery
   g. safe practice

Stage Management

1. terminology
2. safe practice
3. tools
4. organizational strategies
   a. communications
   b. calendars/schedules
5. taping out stage
6. rehearsal/blocking notation
7. calling show
8. event safety strategies/compliance

Venue

1. The stage
   a. areas (deck, wings, backstage, pit, etc.)
   b. components (curtains, rigging, etc.)

2. Front of House
   a. technical areas (catwalks, control booth)
   b. administrative/audience areas (box office, lobby, audience seating, etc.)

3. Administration and Personnel (Front of House)
   a. non-technical (house manager, box office manager, ushers, agents, etc.)
   b. technical (light board operator, sound board operator, crew)

4. Administration and Personnel (Stage)
   a. artistic director
   b. director

      c. stage manager
      d. technical director
      e. crew

5. Safety
      a. audience safety (crowd control, evacuation procedures, etc.)
      b. crew and performers (evacuation procedures, safe operation of systems, signage, fall arrest, fall protection)

Resources:

Audio

Practical Technical Theatre "Audio for Theatre", 2nd Edition by David Eisenhauer, Robin Weatherall, and Robert Fowler
ISBN-13 #: 978-1-934607-14-5
(AVAILABLE IN DVD/CD-ROM FORMAT, OR THROUGH YEARLY SUBSCRIPTION)
PUBLISHER: INTERACTIVE EDUCATIONAL VIDEO, LLC

Sound Console Manuals

The Sound Reinforcement Handbook (2nd Edition) by Gary Davis, Ralph Jones
Publisher: Yamaha; 2nd Edition (January 1, 1988)
ISBN-10: 0881889008
ISBN-13: 978-0881889000

Theatrical Design and Production: An Introduction to Scene Design and Construction, Lighting, Sound, Costume, and Makeup 7th Edition by J. Michael Gillette
Publisher: McGraw-Hill Education; 7th Edition (October 1, 2012)
ISBN-10: 0073382221
ISBN-13: 978-0073382227

Costuming

Costume Designer's Handbook: A Complete Guide for Amateur and Professional Costume Designers 2nd Revised ed. Edition by Rosemary Ingham, Liz Covey
Publisher: Heinemann Drama; 2nd Revised ed. edition (November 2, 1992)
ISBN-10: 0435086073
ISBN-13: 978-0435086077

Costuming for the Theatre by Terry McGonigle
ISBN-13 #: 978-1-934607-12-1
(AVAILABLE IN DVD/CD-ROM FORMAT, OR THROUGH YEARLY SUBSCRIPTION)
PUBLISHER: INTERACTIVE EDUCATIONAL VIDEO, LLC

Theatrical Design and Production: An Introduction to Scene Design and Construction, Lighting, Sound, Costume, and Makeup 7th Edition by J. Michael Gillette
Publisher: McGraw-Hill Education; 7th Edition (October 1, 2012)
ISBN-10: 0073382221
ISBN-13: 978-0073382227

USITT Publications available for purchase/download at usitt.org

Projects for Teaching Costume Design Vol. 1
Practical Projects for Teaching Costume Design Vol. 2

Counterweight Rigging

E1.4 (2016) **ANSI**/ESTA **E1.4**-1 : Entertainment Technology - Manual Counterweight Rigging Systems
www.esta.org

Operations manuals for counterweight systems
http://jrclancy.com/reference.php

Rigging 101
http://www.jrclancy.com/downloads/JRC_Cntrwt_Rigging.pdf

Stage Rigging Handbook (3rd Edition), Jay Glerum
Publisher: Southern Illinois University Press; 3rd edition (April 18, 2007)
ISBN-10: 0809327414
ISBN-13: 978-0809327416

Lighting Design and Electricity

The Automated Lighting Programmer's Handbook 3rd Edition by Brad Schiller
Publisher: Focal Press; 3rd edition (October 5, 2016)
ISBN-10: 1138926248
ISBN-13: 978-1138926240

Designing with Light: An Introduction to Stage Lighting (Film) 6th Edition
By J. Michael Gillette, Michael McNamara
Publisher: McGraw-Hill Education; 6th Edition (January 22, 2013)
ISBN-10: 0073514233
ISBN-13: 978-0073514239

Electricity for the Entertainment Electrician & Technician 2nd Edition
By Richard Cadena
Publisher: Focal Press; 2 edition (February 13, 2014)
ISBN-10: 0415714834
ISBN-13: 978-0415714839

Lighting Console Manuals

Lighting Design (2006) by Robert Fowler
(ISBN # 978-1-934607-06-0)
(AVAILABLE IN DVD/CD-ROM FORMAT, OR THROUGH YEARLY SUBSCRIPTION)
PUBLISHER: INTERACTIVE EDUCATIONAL VIDEO, LLC

Lighting for Theatre (2006) by Robert Fowler
(ISBN # 978-1-934607-10-7)
(AVAILABLE IN DVD/CD-ROM FORMAT, OR THROUGH YEARLY SUBSCRIPTION)
PUBLISHER: INTERACTIVE EDUCATIONAL VIDEO, LLC

NFPA 70: National Electrical Code (NEC), 2014 Edition.

Scene Design and Stage Lighting 10th Edition by R. Craig Wolf, Dick Block
ISBN-13: 978-0495501909
ISBN-10: 0495501905
Wadsworth Publishing (March 26, 2013)

Theatrical Design and Production: An Introduction to Scene Design and Construction, Lighting, Sound,
Costume, and Makeup 7th Edition by J. Michael Gillette
Publisher: McGraw-Hill Education; 7th Edition (October 1, 2012)
ISBN-10: 0073382221
ISBN-13: 978-0073382227

USITT RP-2, Recommended Practice for Theatrical Lighting Design Graphics - (2006).
http://www.dolphin.upenn.edu/pacshop/RP-2_2006.pdf

USITT Publications available for purchase/download at usitt.org

Practical Projects for Teaching Lighting Design Vol.1
Practical Projects for Teaching Lighting Design Vol. 2

Safety

NFPA 70: National Electrical Code (NEC), 2014 Edition.

Occupational Safety and Health Administration: OSHA 10/General Entertainment Safety Training

NFPA 101: Life Safety Code®
http://www.nfpa.org/codes-and-standards/all-codes-and-standards/list-of-codes-and-
standards/detail?code=101

Power Tool Operation and Safety
http://www.powertoolinstitute.com/

Scenic Design and Construction

Basic Set Construction and Theatre Safety by Robert Fowler
(ISBN 13 # 978-1-934607-09-1)
(AVAILABLE IN DVD/CD-ROM FORMAT, OR THROUGH YEARLY SUBSCRIPTION)
PUBLISHER: INTERACTIVE EDUCATIONAL VIDEO, LLC

Power Tool Operation and Safety
http://www.powertoolinstitute.com/

Scene Design and Stage Lighting 10th Edition by R. Craig Wolf, Dick Block
ISBN-13: 978-0495501909
ISBN-10: 0495501905
Wadsworth Publishing (March 26, 2013)

Set Design by Robert Fowler
(ISBN 13 # 978-1-934607-05-3)
(AVAILABLE IN DVD/CD-ROM FORMAT, OR THROUGH YEARLY SUBSCRIPTION)
PUBLISHER: INTERACTIVE EDUCATIONAL VIDEO, LLC

Stock Scenery Construction Handbook Perfect Paperback – September 15, 2015
By Bill Raoul, Mike Monsos
Publisher: Broadway Press; Third edition (September 15, 2015)
ISBN-10: 0911747435
ISBN-13: 978-0911747430

Theatrical Design and Production: An Introduction to Scene Design and Construction, Lighting, Sound, Costume, and Makeup 7th Edition by J. Michael Gillette
Publisher: McGraw-Hill Education; 7th Edition (October 1, 2012)
ISBN-10: 0073382221
ISBN-13: 978-0073382227

USITT Publications available for purchase/download at usitt.org

Practical Projects for Teaching Scene Design Vol. 1
Practical Projects for Teaching Scene Design Vol. 2

USITT Scenic Design and Technical Production Graphic Standard – (1999).
http://www.dolphin.upenn.edu/pacshop/usitt92.pdf

Stage Management

The Back Stage Guide to Stage Management, 3rd Edition: Traditional and New Methods for Running a Show from First Rehearsal to Last Performance 3rd Revised, Expanded ed. Edition
Publisher: Back Stage Books; 3rd Revised, Expanded ed. edition (June 16, 2009) by Thomas A. Kelly
ISBN-10: 0823098028
ISBN-13: 978-0823098026

Business and House Management (2004) by Lana Hagan, Marti Fowler, and Robert Fowler
(ISBN 13 # 978-1-934607-07-7)
(AVAILABLE IN DVD/CD-ROM FORMAT, OR THROUGH YEARLY SUBSCRIPTION)
PUBLISHER: INTERACTIVE EDUCATIONAL VIDEO, LLC

The Stage Manager's Toolkit: Templates and Communication Techniques to Guide Your Theatre Production from First Meeting to Final Performance (The Focal Press Toolkit Series) 1st Edition
By Laurie Kincman
Publisher: Focal Press; 1st edition (April 13, 2013)
ISBN-10: 0415663199
ISBN-13: 978-0415663199

Stage Management (2nd Edition) (2012) by Jason Daunter and Tom Martin
(ISBN 13 # 978-1-934607-13-8)
(AVAILABLE IN DVD/CD-ROM FORMAT, OR THROUGH YEARLY SUBSCRIPTION)
PUBLISHER: INTERACTIVE EDUCATIONAL VIDEO, LLC

General Resource and Reading

eSET Lexicon. App available for download from iTunes and Google Play

Technical Theatre Textbooks

Backstage Handbook: An Illustrated Almanac of Technical Information / Edition 3 by Paul Charter ISBN-13; 2900911747392 Publisher: Broadway Press Publication date: 11/01/1994

Careers in Theatre (2012) by Marti and Robert Fowler
(ISBN 13 # 978-1-934607-11-4)
(AVAILABLE IN DVD/CD-ROM FORMAT, OR THROUGH YEARLY SUBSCRIPTION)
PUBLISHER: INTERACTIVE EDUCATIONAL VIDEO, LLC
Introduction to Technical Theatre (2006) by Marti and Robert Fowler
(ISBN 13 # 978-1-934607-08-4)
(AVAILABLE IN DVD/CD-ROM FORMAT, OR THROUGH YEARLY SUBSCRIPTION)
PUBLISHER: INTERACTIVE EDUCATIONAL VIDEO, LLC

NFPA 70: National Electrical Code (NEC), 2014 Edition.

Occupational Safety and Health Administration: OSHA 10/General Entertainment Safety Training

NFPA 101: Life Safety Code®
http://www.nfpa.org/codes-and-standards/all-codes-and-standards/list-of-codes-and-standards/detail?code=101