LOCKSMITHING 101
COURSE SYLLABUS AND LESSON PLAN

19 Instruction Hours ♦ 45 Study Hours ♦Self-paced—completed within 1 to 12 Months
No Prerequisites ♦ Certificate in Locksmith Theory ♦ Distance Education only; Online Only

COURSE DESCRIPTION: The Locksmith Course gives students a broad understanding of the Locksmith trade. Students will study everything from Locksmith theory and the Associated Locksmiths of America (ALOA) standards and the skills and tasks outlined in the Federal Wage System Job Grading Standard for Locksmithing. Students learn the tools of the trade and critical safety procedures. All common Locksmith components are demonstrated including such items as types of locks, key systems, installation in residential, commercial, and even mobile environments. The course also includes Locksmith device rekeying, troubleshooting, and repair. This course prepares students for non-licensed, entry-level work as a Locksmith. Students study and complete the course at a pace they control. Students must study with sufficient retention of the knowledge to pass their exams with a score of 80% or higher.

COURSE OBJECTIVE: Upon successful completion, this course results in trade knowledge certification for entry-level Locksmith trade workers, and do-it-yourself home and business owners. This Locksmith Course prepares an individual to enter employment in positions involving Locksmith, Locksmith Assistance and the Locksmith work involved in Installation, Maintenance, and Repair positions. *(See Standard Occupational Classifications* 49-9094 Idaho Department of Labor.)

- ***This course is NOT intended to lead to becoming a Licensed Locksmith.***
- *Certificates of this School do not qualify an individual to work as a licensed Locksmith.*
- *Licensure varies from state to state. Most states and many municipalities strictly control who can call themselves a locksmith. Generally, a "locksmith" is defined as any person who sells, services, installs, or maintains mechanical security devices, including deadbolts and locks, and advertises or offers services to the public or represents to the public that the person is a locksmith.*
- *The general eligibility requirements to obtain a locksmith license (individual or company):*
  - *Minimum 18 years of age*
  - *Criminal background check by the Department of Justice and the FBI*
  - *Not have been arrested, charged indicted, entered into any pre-trial intervention, or convicted of any Class A misdemeanor or felony unless a full pardon has been granted*
  - *Not have been arrested, charged, indicted, entered into any pre-trial intervention, or convicted of any Class B misdemeanor within the last five (5) years*
  - *Mentally competent*
  - *Not be alcohol or drug dependent*
  - *If in the Armed Services, must have been Honorably Discharged*
- *To obtain a locksmith license, the student may be required to qualify in either of two options.*
  - ***Two-year experience** as locksmith, or*

- *Locksmith training, pass a locksmith proficiency test and document 1-year full time locksmith work experience.*

EQUIPMENT AND MATERIALS USED IN THIS COURSE: Equipment and materials used in this course include: An internet-capable computer, internet connection, web browser, online examinations.

VIDEO INSTRUCTION: *Professional Locksmith Course*. Director Gene Kelly, Producer Keith Hezmalhalch, DVD. Accelerated Technical Training Institute (ATTI), 2003.

INSTRUCTIONAL MODE: Distance education not in real time. All instruction is provided via pre-recorded video lessons and online examinations.

FREQUENCY OF LESSONS: Lessons occur at a time and location determined by the student.

METHOD OF INSTRUCTION: This course is taught in pre-recorded video instruction; however, the students can access instructors whenever they have technical questions or need assistance with completing the coursework. Students submit their questions by email to ***faculty@atitradeschools.com,*** after which they will receive an email reply and/or a telephone call from a Student Support Specialist.

TESTING AND CERTIFICATE REQUIREMENTS: When you complete the video instruction in the Locksmith Course, you will take an online examination to test your knowledge. You may optionally complete an end-of-chapter quiz. Quizzes are optional study tools to support passing your final exam. Exams are online, not timed, and are open book, open video. Once started, an online exam may be suspended but must be completed within 60 days. When you pass your final exam with a score of 80% or higher, you will receive a Locksmith Theory Certificate.

GRADING SYSTEM: Students are graded on a pass/fail basis.

Passing Grade: A passing grade is given to a student who achieves a score of 80% or higher on all examinations in the Locksmith Course.

Failing Grade: A failing grade is given to a student who has failed to achieve a score of 80% or higher on all examinations in the Locksmith Course.

Locksmith Course Lesson Plan

Watch all video instruction for the following segments:	✓In Progress	✓Completed
Module One: Lock Basics		
Module One: Section 1 - Introduction		
1. Introduction		

a. What is Covered in course b. Locks for Automobile and House. c. Making Keys d. Picking Locks e. Re-keying locks 2. **The basic history of locks** When the first pin tumbler locks were invented		
Module One: Section 2 - Keys		
3. Four kinds of keys a. Cylinder key b. Flat key c. Bit and barrel keys (barrel key variation of bit key) d. High security keys 4. **The Basic Key Blank Catalog** a. catalog and the basic types of keys) b. Two levels of key blank manufacturers i. Original lock manufacturers ii. Duplicate key blank manufacturers c. Catalog and how to use it i. Numerical index by key ii. Listing of maufacturers iii. Key blank conversion tables 5. **Key Identification** a. Matching cylinder key blanks i. check blade length ii. compare grooves iii. check groove length iv. five kinds of grooves 1. square 2. round 3. right angle 4. left angle 5. V groove 6. **Using the Pro lok key check device** **7. Matching Flat key blanks** a. Compare length, thickness, width, and tip 8. **How to duplicate Flat Keys**		

a. two duplication methods i. hand method ii. machine method b. hand method i. smoke the cut key ii. line up the two keys iii. put in vise c. proper filing methods i. one direction ii. 90 degrees iii. right angles iv. one cut at a time v. check and file height if necessary **9. Flat keys, machine method** **10. Bit key comparison** Length, post, bit profile, bit size, tip length 11. **To learn how to duplicate bit keys** a. Duplicating a bit key (by hand) b. Check bit/barrel key measurements c. File tip d. File front of bit e. File back of bit f. File height of bit g. Measure and make ward cuts and or groove h. Measure and make tumbler cuts b. Machine cutting a bit key 12. **Duplicating a cylinder key by hand** a. Smoke the key b. Clamp keys together c. Start from the center of the cut nearest the shoulder d. File one direction, slowly e. Show results of short choppy strokes f. Show results of side to side wandering g. Put small flat on sharp points 13. **Duplicating a cylinder key on a machine** (manual) a. Set up b. How to use		

14. Duplicating a cylinder key on a machine (auto) **15. Decoding and Code cutting keys** a. How to decode b. Blue Punch c. Hand cutters d. Machine method using code keys		
Module One: Section 3 – Warded Locks		
16. **Warded Lock Construction** a. How They Work b. Identify parts of a warded lock (use diagram similar to figure A on lesson 6, page 2) c. Laminated type warded lock d. Other cheap types 17. **Making by keys impression for Warded Locks** a. Hand Filing b. Impression with smoke or wax 18. **Picking Warded locks**		
Module One: Section 4 – Lever Locks		
19. **Lever Tumbler Lock Construction, picking and key impressions** **a.** How they work **b.** Making key by impression c. 2 lever d. 4 lever e. Picking lever locks (introduction to true picking and pick devices)		
Module One: Section 5 – Wafer/Disc Locks		
20. **Wafer/Disc Tumbler Lock Construction, key impressioning** a. How they work b. Making keys from impression 21. **Fitting Keys by the Reading Method for Disc**		

Tumbler Locks (to learn how to make keys for disc tumbler a. locks by reading the height of the disc and making the key fit the lock) **22. Picking wafer/disc locks** a. Identify picking tools and show application of each b. Tension wrench c. Raker pick d. Feeler pick e. Show picking procedures and methods 23. **Double bitted wafer/disc locks** (to learn the construction of double bitted cam locks, how they operate and making **a.** the original and duplicate key for one) b. How they work c. Making keys from impression d. picking.		
Module One: Section 6 – Pin Tumblers		
24. The Pin Tumbler design (use diagrams and cutaways to explain the design and operation of pin tumbler lock mechanisms) a. The parts of a pin tumbler lock mechanism 1. The plug 2. The bottom pins 3. The top pins 4. The springs b. The shear line and how it works **25. Show basic method of picking pin tumbler locks** (Using the cutaway, show basics of picking) **26. Pin Tumbler Pad Locks** (introduce a variety of pin tumbler style pad locks and cover: design, Construction and operation.) We show the ABUS, American & Best removable core padlocks as well as Master and other NON-removable core padlocks) 27. **Fitting Keys** (show how to code cut a key for a pin		

tumbler pad lock) 28. **Re-Keying pin tumbler pad locks** (show the methods, tools and techniques for re-keying pin tumbler padlocks, both for new keys and for an existing key.) **29. Drilling Padlocks** 1. Drill a non-removable core padlock 2. Drill an ABUS recorable padlock using Prolok jig) 3. Drill a recorable disc padlock (use Prolok disc buster) 4. Drill the nut off a bottom recorable padlock (using Prolok jig adapter) **30. Additional Tips** (show how ball latch works and how to use bolt cutters)		
Module One: Section 7 - Antique and Collectible Lock Mechanisms		
31. Pad locks (show variety including story locks and push key locks, discuss design and operation) **32. Safe banks** (show both keyed and combination style miniature safe banks, discuss design and operation) **33. Handcuffs** (show evolution of handcuffs from early to modern style, discuss design and operation) **34. How to collect** (discuss various aspects of collecting, including how to judge condition, authenticity, pricing, collectors organizations and where you can shop/find rare locks)		
Module Two: Residential and Commercial Locks		
Module Two: Section 1 - Review of Pin-Tumbler Lock		
35. Pin Tumbler Construction (review the design and operation of a pin tumbler lock using the cutaway)		
Module Two: Section 2 Residential Locks		
36. Key-in-knob locks: a. "wafer-type" lock system i. design and construction		

ii. how they work iii. how to pick them iv. how to drill them b. General pin tumbler types c. Show different types, how they work (disassembly/assembly) i. Dexter, Weiser, Kwikset, Schlage, Defiant, Raylock, Kwikset-Titan, etc. d. Discuss Lock selection (how to help the customer select the proper lock) e. Show how to re-pin each type f. Servicing (show different adjustments, cleaning and lubrication) g. Show how to drill or break each lock type for use when you are unable to pick the lock. 37. Combination-type locks (deadbolt/key-in-knob with pull) a. design differences and construction b. how they work c. changing pin codes d. drilling e. servicing 38. Deadbolts a. Single sided (how they work, assembly/disassembly, rekeying) b. Double sided (how they work, assembly/disassembly, rekeying) c. Drilling **d.** Servicing		
Module Two: Section 3 - Commercial Locks		
39. Schlage, Commercial Key- in-knob lock system a. design/construction b. assembly/disassembly c. re-pinning d. picking e. drilling 40. Commercial Screw-in Type lock system a. design/construction		

b. assembly/disassembly c. re-pinning d. picking e. drilling 41. Commercial IC-Core lock system a. Design/construction b. assembly/disassembly c. How they work (concept of the control key and second shear line) d. How to pin them (how to use the formulas)		
Module Two: Section 4 - Installing Locksets in Doors		
42. Installing Residential/Commercial Locks (install different types into miniature doors, including: key-in-knob, combination, and cylinder type) show: a. layout of holes b. drilling/cutting holes c. drilling latch hole d. chiseling/punching latch relief e. fitting and installing lock system f. performing function checks		
Module Two: Section 5 - The Master Key System		
43. The Pin Tumbler Master Key System (use the cutaway to show how a master-key system works using different keys) 44. Setting up a Master Key system (learn the purpose of the master key system and how to set up a system on paper before working on the locks) 45. Master keying pin tumbler Locks (create an actual master-key system using 3 pin-tumbler locks by following the master key system learned earlier)		
Module Two: Section 6 - Impressioning Pin Tumbler Locks		
46. Impression System for Pin Tumbler Locks (to learn how to make original keys for pin tumbler locks		

47. without taking them apart and how to file the key blank using the impression marks as a guide) a. File method b. code cutting method c. b. Blade method		
Module Two: Section 7 - Picking Pin Tumbler Locks		
48. Picking Pin Tumbler Locks (show the different methods of picking open pin-tumbler locks and the design and function of special pick-resistant pins). Demonstrate the following devices/methods: 49. Manual picking (show different pick styles in the cutaway) a. Key gun b. Electric picks c. Reverse spinners		
Module Two: Section 8 - Forced Entry of Buildings		
50. Forced Entry of buildings (to learn the methods used by locksmiths to enter buildings when it is not practical or possible to use conventional locksmith methods) a. hacksaw blade tool 1. latches facing towards you 2. latches facing away from you 3. bolt latches 4. window latches (double hung) 5. deadbolts b. rod tools 1. for chain latches 2. for window latches (double hung) 3. for double hung windows (with drilling) c. Kwikset core removal tool d. drilling		
Module Two: Section 8 - High Security Locks		
51. BEST Locks **a.** How they work **b.** Removable core locks **c.** Changing pins lock codes 52. Add-on devices a. Making & using lockout keys		

i. How they are made ii. How they work 53. Padlocks a. Junken-American “ball locking” padlock i. How it works ii. How to pick iii. How to drill b. Sargent Greenlee key-control padlocks i. How it works ii. How to pick iii. How to drill 54. Cabinet/vending machine locks a. The Chicago “ace” locks i. How they work ii. How to pick them iii. Drilling them 55. Master-keying ace locks Door lock systems (both key-in-knob and deadbolt style) 56. Emhart interlocking pin tumbler a. How it works b. Picking techniques and methods c. Drilling 57. Medeco locks a. How they work b. Picking techniques and methods c. Drilling 58. Schlage Primus system 59. Schlage Everest system 60. Miscellaneous high security lock/key designs a. Abloy b. 777 c. Eagle		

61. Electronic locks a. Residential b. Commercial i. Videx interactive/programmable system ii. Card key access		
Module Three: Automotive Locks		
Module Three: Section 1 – Types of Locks		
62. Auto Locks Wafer/Disk Type **a.** Review of how they work **b.** Code cutting **c.** Changing codes **d.** Review of picking **63. Auto Locks Pin Tumbler Type** **a.** How they work **b.** Code cutting **c.** Changing codes **d.** Picking locks **e.** Try out keys **64. Sidebar Wafer Lock Construction** (construction of the side bar wafer lock, how it works and how to change the combination) Use diagrams to show construction and function a. Dash mounted **b.** Column mounted **c.** How they work **d.** Code cutting **e.** Changing pins **f.** Try out keys **g.** Picking **65. Vats and Transponder type key systems** a. how they work **b.** how to program a transponder or vats key		
Module Three: Section 2		
66. Lubricating locks w/o disassembly (show different types of sq etc.) 67. Drilling locks to open or remove 68. Adjusting lock mechanisms		

69. Making Keys a. Determinator b. Impressioning		
Module Three: Section 3		
70. **Car opening and Lockouts** (to learn car opening without keys and the use of care opening tools) a. Show tools and purposes and techniques for each using tools and diagrams b. Show how to use on actual cars on our set (take off side panels so we can watch inside the door) c. Show how to get notes on opening techniques for different cars d. Wrecking Yard walk-thru opening doors and trunks, etc.		
Module Three: Section 4		
71. **Automotive Lock and Cylinder removal** (how auto locks work in a car, removal, disassembly/reassembly) **a. Non-Airbag Vehicles:** i. GM, Ford & Chrysler ignition lock removal ii. GM, Ford & Chrysler glove compartment iii. GM, Ford & Chrysler door lock removal iv. GM, Ford & Chrysler rear deck lock removal v. GM, Ford & Chrysler trunk lock vi. GM, Ford & Chrysler glove compartment vii. Ford & Mercury compact and intermediate models viii. Japanese & European ignition locks ix. Japanese & European door locks x. Japanese & European trunk and hatch locks *b.* **Airbag Vehicles:** i. GM, Ford & Chrysler ignition lock removal ii. Ford & Mercury compact and intermediate models iii. Japanese & European ignition locks		
Module Four: Advanced Locksmithing		
Module Four: Section 1 - Combination Padlocks		

72. **Combination Locks** (construction of combination padlocks) Use diagrams to teach construction and function a. How they work b. Demonstrate techniques for opening without combination c. Demonstrate techniques and procedures for finding combination (codes, etc) d. Drilling locks **73. Master 1525 Key Controlled Combination Padlock**		
Module Four: Section 2 - Resettable Padlocks		
74. Resettable Padlock Construction Use procedures/diagra lesson 9 to show construction/function a. How they work b. How to change combination c. How to drill d. Sargent 8088 key control combination padlock		
Module Four: Section 3 – Safe and Vault Locks		
75. Safe and Vault Locks a. Basic methods of opening **b.** Nomenclature & function of: dial, spindle, dial ring, tube, drive cam, spline key, bolt, wheel pack, cover, tension wa spacing washer, retaining washer **76. Basic Operating Principles** a. single wheel operation b. rotating parts c. relationship of combination number with the wheel d. lining up the gates e. mesh wheel identification f. lock disassembly g. mesh combination changes. **77. Hole-type combination changes** a. types of hole change locks b. wheel identification c. square spindle function d. changing combinations e. selecting the new combinations f. dial reading g. alternate method of combination changing (find the alternate combination mathematically).		

78. Key change Combination a. mechanism of the key change wheel b. dialing procedure c. changing the combination d. function of the dialing mark e. function of the changing index mark f. dialing to the new combination . **79. Combination Lock Theory** a. possible combinations b. determining the possible combinations c. drop-in point d. combination numbers not to use: on any number, on the last combination number e. drive cam gating and location f. setting combination numbers to one or two numbers g. broken spline removal h. relocking devices and their uses i. gear-driven locks: theory of manipulation, reasons for lockouts.		
Module Four: Section 4 - Resettable Padlocks		
80. Safe Deposit Locks a. uses of deposit boxes b. who is authorized to open deposit boxes c. the guard key function d. the customer key function e. authorization for opening deposit boxes f. when to duplicate a deposit box key g. reasons for servicing deposit box locks h. types of deposit box locks i. double nose locks ii. single nose locks iii. lever lock construction iv. basic principles of operation. **81. Methods of opening safe deposit boxes** a. which method to use b. deposit box "nests" c. principles of picking d. saw tooth levers		

e. poor mechanical conditions f. factors that aid picking g. drilling the screws h. transposing measurements i. drilling hinge screws j. measuring for drilling template k. cutting the hinges l. pulling the nose (nose pulling tools) i. drilling for the gate and fence window ii. picking through the fence window.		
Module Five: Locksmithing Business		
Module Five: Section 1 – Operation		
82. **How to Operate a Locksmith Business** (get you started in a profitable fulltime/part-time locksmith business) 83. **Course wrap up** (whats been covered, important reminders, etc.)		