

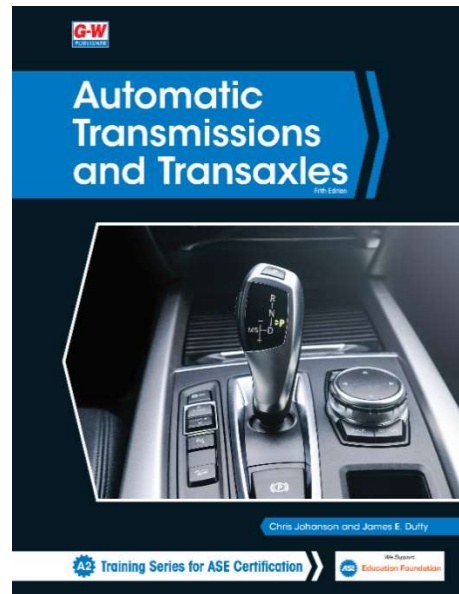
**Correlation of
Automatic Transmissions and Transaxles, Johanson and Duffy
(Goodheart-Willcox Publisher ©2021)**

**to the
2022 ASE Education Foundation Master Automobile Service Technology (MAST) Task
List**

The following chart correlates the *Automatic Transmissions and Transaxles* textbook and shop manual (©2021) to the 2022 ASE Education Foundation Master Automobile Service Technology (MAST) Task List.

The correlation below lists the ASE Education Foundation Master Automobile Service Technology Tasks, priority levels, corresponding page numbers from the *Automatic Transmissions and Transaxles* textbook, and corresponding job numbers from the *Automatic Transmissions and Transaxles Shop Manual*.

For more information on the ASE Education Foundation standards, please visit www.aseeducationfoundation.org.



AUTOMATIC TRANSMISSION AND TRANSAXLE.

For every task in Automatic Transmission and Transaxle, the following safety requirement must be strictly enforced:

- Comply with personal and environmental safety practices associated with clothing; eye protection; hand tools; power equipment; proper ventilation; and the handling, storage, and disposal of chemicals/materials in accordance with local, state, and federal safety and environmental regulations.

Task Number and Description	Priority	G-W Content
II. AUTOMATIC TRANSMISSION AND TRANSAXLE A. General		
1. Research vehicle service information such as fluid type, vehicle service history, service precautions, technical service bulletins, and recalls including vehicles equipped with advanced driver assistance systems (ADAS).	P-1	Textbook: pg. 66–70, 113-115, 312, 364-365 Shop Manual Jobs 1, 2, 3

Task Number and Description	Priority	G-W Content
2. Identify automatic transmission and transaxle components and configurations.	P-1	Textbook: pg. 149-181, 185-202, 207, 232
3. Retrieve and record DTCs, OBD monitor status, and freeze frame data; clear codes and data when directed.	P-1	Textbook: pg. 64-65, 344-350, Shop Manual Job 4
4. Inspect transmission fluid condition; check fluid level; inspect for leaks on transmission or transaxle equipped with a dipstick.	P-1	Textbook: pg. 113-114, 364-365 Shop Manual Jobs 7, 12
5. Inspect transmission fluid condition; check fluid level; inspect for leaks on transmission or transaxle not equipped with a dipstick.	P-1	Textbook: pg. 113-114, 365 Shop Manual Jobs 7, 12
6. Diagnose transmission/transaxle gear reduction/multiplication concerns using driving, driven, and held member (power flow) principles.	P-1	Textbook: pg. 159-177, 319 Shop Manual Job 7
7. Diagnose pressure concerns in a transmission using hydraulic principles (Pascal's Law).	P-1	Textbook: pg. 120-127, 325-335 Shop Manual Jobs 7, 8
8. Identify and interpret transmission/transaxle concerns, differentiate between engine performance and transmission/transaxle concerns; determine needed action.	P-1	Textbook: pg. 310-314, 323-325 Shop Manual Job 7
9. Diagnose fluid loss and condition concerns; determine needed action.	P-1	Textbook: pg. 316-317, 364-365 Shop Manual Job 7
10. Perform stall test; determine needed action.	P-2	Textbook: pg. 155-157, 330 Shop Manual Job 7
11. Perform lock-up converter system tests; determine needed action.	P-2	Textbook: pg. 330, 335, 345 Shop Manual Job 7
12. Perform pressure tests on transmissions/transaxles equipped with electronic pressure control; determine needed action.	P-1	Textbook: pg. 325-335 Shop Manual Jobs 7, 8
13. Diagnose electronic transmission/transaxle control systems using appropriate test equipment and service information.	P-1	Textbook: pg. 64-65, 146, 340-360, Shop Manual Jobs 16, 20
14. Diagnose noise and vibration concerns; determine needed action.	P-2	Textbook: pg. 323 Shop Manual Job 7
II. AUTOMATIC TRANSMISSION AND TRANSAXLE		
B. In-Vehicle Transmission/Transaxle		
1. Inspect, adjust, and/or replace external manual valve shift linkage, transmission range sensor/switch, and/or park/neutral position switch.	P-1	Textbook: pg. 321-322, 352-353, 366-369 Shop Manual Jobs 7, 13
2. Drain and replace fluid and filter(s); use proper fluid type per manufacturer specification.	P-1	Textbook: pg. 364-365, 373 Shop Manual Job 12
3. Perform relearn procedures.	P-2	Textbook: 445-446 Shop Manual Job 4

Task Number and Description	Priority	G-W Content
4. Inspect, replace/or and align powertrain mounts.	P-1	Textbook: pg. 398–399 Shop Manual Jobs 5, 6
5. Inspect for leakage; replace external seals, gaskets, and bushings.	P-2	Textbook: pg. 317, 322–323, 380–381 Shop Manual Jobs 7, 12
6. Inspect, test, adjust, repair, and/or replace electrical/electronic components and circuits.	P-1	Textbook: pg. 340–360, 368–370 Shop Manual Jobs 4, 16
II. AUTOMATIC TRANSMISSION AND TRANSAXLE		
C. Off-Vehicle Transmission and Transaxle		
1. Describe the operational characteristics of a continuously variable transmission (CVT).	P-2	Textbook: pg. 16, 230–232 Shop Manual Job 28
2. Describe the operational characteristics of a hybrid vehicle drive train.	P-2	Textbook: pg. 30, 32 Shop Manual Job 28
3. Remove and reinstall transmission/transaxle and torque converter; inspect engine core plugs, rear crankshaft seal, dowel pins, dowel pin holes, and mounting surfaces.	P-2	Textbook: pg. 386–399 Shop Manual Jobs 13, 18, 19, 26, 27
4. Inspect, leak test, flush, and/or replace transmission/transaxle oil cooler, lines, and fittings.	P-1	Textbook: pg. 320, 330, 405 Shop Manual Job 14
5. Inspect converter flex (drive) plate, converter attaching bolts, converter pilot, converter pump drive surfaces, converter end play, and crankshaft pilot bore.	P-2	Textbook: pg. 318, 389, 396–397, 419 Shop Manual Jobs 18, 20, 23, 24
6. Disassemble, clean, and inspect transmission/transaxle.	P-2	Textbook: pg. 402–416 Jobs 20, 23
7. Inspect, measure, clean, and replace valve body (includes surfaces, bores, springs, valves, switches, solenoids, sleeves, retainers, brackets, check valves/balls, screens, spacers, and gaskets).	P-2	Textbook: pg. 374–378 Shop Manual Jobs 20, 21, 23, 24
8. Inspect servo and accumulator bores, pistons, seals, pins, springs, and retainers; determine needed action.	P-2	Textbook: pg. 378–380 Shop Manual Jobs 21, 24
9. Assemble transmission/transaxle.	P-2	Textbook: pg. 416–420 Shop Manual Jobs 22, 25
10. Inspect, measure, and reseal oil pump assembly and components.	P-2	Textbook: pg. 412–414 Shop Manual Jobs 20, 21, 23, 24
11. Measure transmission/transaxle end play and/or preload; determine needed action.	P-2	Textbook: pg. 402, 417 Shop Manual Jobs 20, 23
12. Inspect, measure, and/or replace thrust washers and bearings.	P-2	Textbook: pg. 414–415 Shop Manual Jobs 20, 21, 23, 24
13. Inspect oil delivery circuits, including seal rings, ring grooves, and sealing surface areas, feed pipes, orifices, and check valves/balls.	P-2	Textbook: pg. 376, 405, 414–415 Shop Manual Jobs 20, 21, 23, 24

Automatic Transmissions and Transaxles—ASE Education Foundation MAST Task List Correlation Chart—page 4

Task Number and Description	Priority	G-W Content
14. Inspect bushings; determine needed action.	P-2	Textbook: pg. 50-52, 412-413 Shop Manual Jobs 20, 21, 23, 24.
15. Inspect and measure planetary gear assembly components; determine needed action.	P-2	Textbook: pg. 406–407 Shop Manual Jobs 20, 21, 23, 24
16. Inspect case bores, passages, bushings, vents, and mating surfaces; determine needed action.	P-2	Textbook: pg. 405, 414–415 Shop Manual Jobs 20, 23
17. Diagnose and inspect transaxle drive, link chains, sprockets, gears, bearings, and bushings; determine needed action.	P-2	Textbook: pg. 403, 406, 414–415 Shop Manual Job 23
18. Inspect measure, repair, adjust, or replace transaxle final drive components.	P-2	Textbook: pg. 424–432 Shop Manual Jobs 9, 10, 11
19. Inspect clutch drum, piston, check-balls, springs, retainers, seals, friction plates, pressure plates, and bands; determine needed action.	P-2	Textbook: pg. 407–411 Shop Manual Jobs 20, 21, 23, 24
20. Measure clutch pack clearance; determine needed action.	P-2	Textbook: pg. 410–411 Shop Manual Jobs 21, 22, 23, 24
21. Air test operation of clutch and servo assemblies.	P-2	Textbook: pg. 330–331, 411, 418 Shop Manual Jobs 21, 22, 24, 25
22. Inspect one-way clutches, races, rollers, sprags, springs, cages, retainers; determine needed action.	P-2	Textbook: pg. 407-409, 412 Shop Manual Jobs 20, 23