Definitions:

- dynamical system, orbit, invariant set (Ch 13)
- omega-limit set (Ch 13)
- topologically conjugate dynamical systems (Ch 13)
- orbital derivative (Ch 14)
- Jordan curve, line segment (Ch 15)
- transversal (Ch 15)
- absolutely continuous function (Ch 16)
- Carathéodory conditions, AC solutions (Ch 16)
- domain of controllability (Ch 18)
- Kalman matrix of A, B (Ch 18)
- observability (Ch 18)
- regular point, point of bifurcation (Ch 19)
- invariant manifold, property (INV) (Ch 20)

   Theorems (short proof):

- characterization of omega-limit set (Lm 13.1)
- properties of omega-limit set (Th 13.1)
- flow-box near transversal (Lm 15.1)
- monotonicity of transversal intersections (Lm 15.2)
- on intersection of transversal and omega-limit set (Lm 15.3)
- Bendixson-Dulac theorem (Th 15.2)
- measurability of continuous and Carath. function (Lm 16.1)
- integral formulation of AC solution (Lm 16.2)
- generator set of matrix powers (Lm 18.1)
- existence of feedback for nonlinear problem (Th 18.5)
- on controllability set with bounded controls (Th 18.6)
- existence of time optimal control (Th 18.8)
- on product of solutions to adjoint systems (Lm 18.3)
- division lemma (Lm 19.1)
- saddle-node bifurcation in 1d (Th 19.1)
- equivalence of (INV) and (RED) (Lm 20.1)

   Theorems (long proof):

- rectification lemma (Th 13.3)
- La Salle's invariance principle (Th 14.1)
- Poincaré-Bendixson theorem (Th 15.1)
- generalized Banach contraction theorem (Th 16.1)
- generalized Picard theorem (Th 16.2)
- Kalman theorem (Th 18.1)
- local controllability theorem (Th 18.3)
- global controllability for bounded controls (Th 18.7)
- Bang-bang principle (Th 18.9)
- Pontryagin maximum principle for optimal time (Th 18.10)
- Pontryagin maximum principle for Bolza's problem (Th 18.11)
- transcritical bifurcation in 1d (Th 19.2)
- Hopf bifurcation in 2d (Th 19.4)
- invariance of cone, stability of shadow (Lm 20.4)
- tracking property of centre manifold (Th 20.2)

   Theorems without proof:

- characterization of compact omega-limit sets (Th 13.2)
- duality of observability and controllability (Th 18.2)
- construction of matrix with given char. poly. (Lm 18.2)
- existence of feedback for linear problem (Th 18.4)
- Banach-Alaoglu theorem (Ch 18)
- Krein-Milman theorem (Ch 18)
- pitchfork bifurcation in 1d (Th 19.3)
- existence of centre manifold (Th 20.1)
- approximation of centre manifold (Th 20.3)