MCZB039-17 Teoria Básica de Modelos

TPI 4-0-4

RECOMENDAÇÃO: Bases Matemáticas; Funções de Uma Variável; Grupos; Lógica Básica; (Teoria Axiomática de Conjuntos ou Teoria de Conjuntos)

OBJETIVOS:

EMENTA: Estudo da caracterização do conceito de estrutura e de certas propriedades sobre al- gumas estruturas matemáticas, estas últimas expressadas em linguagens de primeira-ordem, e.g.; por meio do conceito de sentenças verdadeiras; e, também, conjuntos definíveis, por fór- mulas e relativos a estruturas; análise dos conceitos e teoremas a respeito de definabilidade, de interpretabilidade, de isomorfismos (ou formas de morfismos), de categoricidade, de tipos (con- juntos, estruturas, e fórmulas), de ultraproduto e de saturação; método de eliminação de quan- tificadores; métodos de classificação de estruturas e de construção de modelos; caracterização da lógica de primeira-ordem; por exemplo, prova de teoremas de compacidade, de categorici- dade, de incompletude, Löwenheim-Skolem; jogos de Ehrenfefeucht-Fraïssé.

BIBLIOGRAFIA BÁSICA:

BADESA, C. The birth of model theory: Lowenheim's theorem in the frame of the theory of relatives. Princeton: Princeton University Press, 2004.

CORI, R.; LASCAR, D.; PELLETIER, D. H. Mathematical logic: recursion theory, Gödel’s theo- rems, set theory, model theory. Oxford: Oxford University Press, 2001.

DOETS, K. Basic model theory. Stanford, CA: Center for the Study of Language and Infor- mation, 1996.

HODGES, W. A shorter model theory. Cambridge: Cambridge University Press, 1997.

LEVY, A. Basic set theory. Mineola, NY: Dover Publications, 2002.

MANZANO, M. Model theory. Oxford: Oxford University Press, 1999.

MARKER, D. Model theory: an introduction. New York: Springer-Verlag, 2002.

TENT, K.; ZIEGLER, M. A Course in Model Theory. Cambridge: Association for Symbolic Log- ic/Cambridge University Press, 2012.

BIBLIOGRAFIA COMPLEMENTAR:

BAAZ, M.; PAPADIMITRIOU, C. H.; PUTNAM, H. W. et al.ii (Eds). Kurt Gödel and the founda- tions of mathematics: horizons of truth. Cambridge: Cambridge University Press, 2014.

BALDWIN, J. T. Categoricity. Providence, RI: American Mathematical Society, 2009.

BELL, J. L. Set theory: Boolean-valued models and independence proofs. 3rd ed. New York: Oxford University Press, 2005.

BELL, J. L.; SLOMSON, A. B. Models and ultraproducts: an introduction. Mineola, NY: Dover Publications, 1997.

BOURBAKI, N. Elements of mathematics: theory of sets. Berlin: Springer-Verlag, 2004.

CHANG, C. C.; KEISLER, H. J. Continuous model theory. Princeton: Princeton University Press, 1966.

CHANG, C. C.; KEISLER, H. J. Model theory. 3rd ed. Mineola, NY: Dover Publications, 2012.

DELZELL, C. N.; PRESTEL, A. Mathematical logic and model theory: a brief introduction. London: Springer Verlag, 2011.

DIACONESCU, R. Institution-independent model theory. Basel: Birkhäuser, 2008.

DROSTE, M.; GÖBEL, R. (Eds). Advances in algebra and model theory. Amsterdam: Gordon and Breach Science Publishers, 1997.

EBBINGHAUS, H. D.; FLUM, J. Finite model theory. 2nd ed. New York: Springer Verlag, 1999.

FRAÏSSÉ, R. Course of mathematical logic. Dordrecht: D. Reidel Publishing, 1974.

HALLETT, M. Cantorian set theory and limitation of size. Oxford: Oxford University Press, 1986.

HART, W. D. The evolution of logic. Cambridge: Cambridge University Press, 2010.

HEDMAN, S. A first course in logic: an introduction to model theory, proof theory, computability and complexity. Oxford: Oxford University Press, 2004.

HODGES, W. Model theory. Cambridge: Cambridge University Press, 1993.

JECH, T. Set theory. 3rd ed. Berlin: Springer-Verlag, 2011.

KANAMORI, A. The higher infinite: large cardinals in set theory from their beginnings. 2nd ed. Berlin: Springer Verlag, 2009.

KOSSAK, R.; SCHMERL, J. H. The structure of models of Peano arithmetic. Oxford: Oxford University Presss, 2006.

KUNEN, K. Set theory: an introduction to independence proofs. Amsterdam/New York: North-Holland, 2004.

LIBKIN, L. Elements of finite model theory. Toronto: Springer-Verlag, 2004.

MANGANI, P. (Ed). Model theory and applications. Berlin: Springer-Verlag, 2010.

MANIN, Y. I. A course in mathematical logic for mathematicians. New York: Springer-Verlag, 2010.

PILLAY, A. An introduction to stability theory. Mineola, NY: Dover Publications, 2008.

POIZAT, B. A course in model theory: an introduction to contemporary mathematical logic. New York: Springer-Verlag, 2000.

ROTHMALER, P. Introduction to model theory. New York: CRC Press, 2000.

SACKS, G. E. Saturated model theory. 2nd ed. New Jersey: World Scientific, 2010.

SHELAH, S. Around classification theory of models. Berlin: Springer-Verlag, 1986.

SHELAH, S. Cardinal arithmetic. Oxford: Oxford University Press, 1994.

SHELAH, S. Classification theory for abstract elementary classes. London: College Publications, 2009.

SMULLYAN, R. M.; FITTING, M. Set theory and the continuum problem. Mineola, NY: Dover Publications, 2010.

TARSKI, A. Logic, semantics, metamathematics. 2nd ed. Indianapolis, IN: Hackett Publishing, 1983 (J. Corcoran, ed.).

TARSKI, A.; MOSTOWSKI, A.; ROBINSON, R. M. Undecidable theories. Mineola, NY: Dover Publications, 2010.

WAGON, S. The Banach-Tarski paradox. Cambridge: Cambridge University Press, 1993.