Disciplina: CONTROLE TOLERANTE A FALHAS DE SISTEMAS A EVENTOS DISCRETOS

CTFSED	4 Créditos
Ementa:	Falhas em Sistemas a Eventos Discretos (SEDs); Classificação, tipos e exemplos de falhas; Diagnose de falhas; Diagnosticabilidade; Diagnosticador; Verificador; Mapeamento de sensores; Prognose de falhas; Prognosticabilidade; Diagnose segura; Controlabilidade segura; Diagnose online e implementação de diagnosticadores; Controle Tolerante a Falhas (CTF) de SEDs; Implementação da estrutura de CTF; Ferramentas de apoio à análise de falhas e síntese de CTF de SEDs; Introdução à diagnose e prognose estocásticas; Introdução à diagnose e prognose descentralizadas e ao CTF descentralizado.
Bibliografia:	C. G. Cassandras, and S. Lafortune, "Introduction to Discrete Event Systems", 3rd ed., Springer, 2021. J. C. Basilio, C. N. Hadjicostis, and R. Su, "Analysis and Control for Resilience of Discrete Event Systems: Fault Diagnosis, Opacity and Cyber Security", Foundations and Trends in Systems and Control: Vol. 8: No. 4, pp 285-443, 2021. C. Seatzu, M. Silva, and J. H. van Schuppen (Eds.), "Control of DiscreteEvent Systems: Automata and Petri Net Perspectives". Lecture Notes in Control and Information Sciences – LNCIS 433, Springer-Verlag, London, 2013. M. Sayed-Mouchaweh, "Discrete Event Systems: Diagnosis and Diagnosability", Springerbriefs in Electrical and Computer Engineering, Springer, 2014. M. Blanke, M. Kinnaert, J. Lunze, and M. Staroswieck, "Diagnosis and FaultTolerant Control", 3rd ed. Springer Berlin Heidelberg, 2016. J. C. Basilio, L. K. Carvalho, and M. V. Moreira. "Diagnose de Falhas em Sistemas a Eventos Discretos Modelados por Autômatos Finitos". Controle & Automação, v. 21, p. 510-533, 2010. J. Zaytoon, and S. Lafortune, "Overview of fault diagnosis methods for Discrete Event Systems". Annual Reviews in Control, Volume 37, Issue 2, pp. 308-320, 2013. A. T. Y. Watanabe, R. Sebem, A. B. Leal, and M. S. Hounsell, "Fault prognosis of discrete event systems: An overview". Annual Reviews in Control, v. 51, p. 100-110, 2021. R. Fritz, and P. Zhang, "Overview of fault-tolerant control methods for discrete event systems", IFAC-PapersOnLine, vol. 51, no. 24, pp. 88–95, 2018. T. Moor, "A discussion of fault-tolerant supervisory control in terms of formal languages", Annual Reviews in Control, vol. 41, pp. 159–169, 2016. M. Sampath, R. Sengupta, and S. Lafortune, "Diagnosability of discrete event systems", IEEE Transactions on Automatic Control, v. 40, pp. 1555- 1575, 1995. M. Sampath, R. Sengupta, and S. Lafortune, "Failure Diagnosis Using Discrete-Event Models", IEEE Transactions on Automatic Control Systems Technology, vol. 4, pp. 105-124, 1996.

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Dissertações de mestrado, teses de doutorado e artigos de revistas especializadas.