**Tentative Class Schedule**

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| **Week** | **Date** | **Topics** | **Activity** | **Readings** | **Notes** |
| W1 | 01/24 | Introduction/Course Overview |  |  |  |
| W1 | 01/26 | Quality System Overview | CMMI,  Six-Sigma Video: <https://www.youtube.com/watch?v=ecwEMY7RJCs> |  |  |
| W2 | 01/31 | Measurement and Metrics Fundamentals-1 | Clarify the Differences Between Measurement and Metrics | Chemuturi, M. (2013). Measurement and Metrics. In Requirements Engineering and Management for Software Development Projects (pp. 139-152). Springer New York. |  |
| W2 | 02/02 | Measurement and Metrics Fundamentals-2 |  | Basili et al. Goal Question Metric (GQM) Approach |  |
| W3 | 02/07 | Software Metrics | Project Team Registration, or Claiming Work Independently | Fenton, N. E., & Neil, M. (2000, May). Software metrics: roadmap. In Proceedings of the Conference on the Future of Software Engineering (pp. 357-370). ACM. |  |
| W3 | 02/09 | Customer Satisfaction/Product Engineering Metrics |  | Kekre, S., Krishnan, M. S., & Srinivasan, K. (1995). Drivers of customer satisfaction for software products: implications for design and service support. Management science, 41(9), 1456-1470. |  |
| W4 | 02/14 | Usability and |  | Seffah, A., Donyaee, M., Kline, R. B., & Padda, H. K. (2006). Usability measurement and metrics: A consolidated model. Software Quality Journal, 14(2), 159-178. |  |
| W4 | 02/16 | Requirement and Quality |  | Ozkaya, I., Bass, L., Sangwan, R. S., & Nord, R. L. (2008). Making practical use of quality attribute information. IEEE Software, 25(2), 25-33. |  |
| W5 | 02/21 | Activity and Project Management Metrics |  |  | 1-Page Proposal Due before the class |
| W5 | 02/23 | **Proposal Presentation** | The instructor will provide live feedback. |  |  |
| W6 | 02/28 | Test Fundamentals | Student paper presentation registration |  | Midterm Release |
| W6 | 03/02 | Exploratory and Acceptance Testing |  | Exploratory Testing Explained: <http://www.satisfice.com/articles/et-article.pdf> |  |
| W7 | 03/07 | Behavioral Driven Development |  | BDD: https://dannorth.net/introducing-bdd/ | Midterm Due |
| W7 | 03/09 | Test Driven Development | Try TDD with EasyMock: http://easymock.org/ | Nagappan, N., Maximilien, E. M., Bhat, T., & Williams, L. (2008). Realizing quality improvement through test driven development: results and experiences of four industrial teams. Empirical Software Engineering, 13(3), 289-302. |  |
| W8 | 03/14 | Spring Break-No Class |  |  |  |
| W8 | 03/16 | Spring Break-No Class |  |  |  |
| W9 | 03/21 | Crowdsourcing for Quality Engineering | Guest Speaker - Yang Feng (UCI) | Feng, Y., Chen, Z., Jones, J. A., Fang, C., & Xu, B. (2015, August). Test report prioritization to assist crowdsourced testing. In Proceedings of the 2015 10th Joint Meeting on Foundations of Software Engineering (pp. 225-236). ACM. | We will have a guest speak to discuss his research on crowdsourcing for software quality. Yang will visit RIT in person. |
| W9 | 03/23 | Code Inspection (incl. Pull-Request Model) | Student Paper Presentation-1 (Part of the classroom session) | Gousios, G., Pinzger, M., & Deursen, A. V. (2014, May). An exploratory study of the pull-based software development model. In Proceedings of the 36th International Conference on Software Engineering (pp. 345-355). ACM. | (W9-W10)Students should schedule meeting with instructor to discuss final project progress |
| W10 | 03/28 | Regression Testing | Student Paper Presentation-2 (Part of the classroom session) | Elbaum, S., Rothermel, G., & Penix, J. (2014, November). Techniques for improving regression testing in continuous integration development environments. In Proceedings of the 22nd ACM SIGSOFT International Symposium on Foundations of Software Engineering (pp. 235-245). ACM. |  |
| W10 | 03/30 | Mutation Testing | Student Paper Presentation-3 (Part of the classroom session) | Jia, Y., & Harman, M. (2011). An analysis and survey of the development of mutation testing. IEEE transactions on software engineering, 37(5), 649-678. |  |
| W11 | 04/04 | Continous Integration | Student Paper Presentation-4 (Part of the classroom session) | Holck, J., & Jørgensen, N. (2003). Continuous integration and quality assurance: A case study of two open source projects. Australasian Journal of Information Systems, 11(1). |  |
| W11 | 04/06 | Quality Engineering for Large Scale Internet Software-1 |  | Feitelson, D. G., Frachtenberg, E., & Beck, K. L. (2013). Development and deployment at facebook. IEEE Internet Computing, 17(4), 8-17. |  |
| W12 | 04/11 | Quality Engineering for Large Scale Internet Software-2 |  | Ebert, C., Gallardo, G., Hernantes, J., & Serrano, N. (2016). DevOps. IEEE Software, 33(3), 94-100. | Additional: Vasilescu, B., Yu, Y., Wang, H., Devanbu, P., & Filkov, V. (2015, August). Quality and productivity outcomes relating to continuous integration in GitHub. In Proceedings of the 2015 10th Joint Meeting on Foundations of Software Engineering (pp. 805-816). ACM. |
| W12 | 04/13 | Human & Social Aspects of Quality Engineering-1 |  | Nagappan, N., Murphy, B., & Basili, V. (2008, May). The influence of organizational structure on software quality: an empirical case study. In Proceedings of the 30th international conference on Software engineering (pp. 521-530). ACM. |  |
| W13 | 04/18 | Human & Social Aspects of Quality Engineering-2 |  | Bird, C., Nagappan, N., Devanbu, P., Gall, H., & Murphy, B. (2009). Does distributed development affect software quality?: an empirical case study of Windows Vista. Communications of the ACM, 52(8), 85-93. |  |
| W13 | 04/23 | Data Science for Quality Engineering | Guest Speaker - Dongmei Zhang (Tsinghua & MSRA) | Zhang, D., Han, S., Dang, Y., Lou, J. G., Zhang, H., & Xie, T. (2013). Software analytics in practice. IEEE software, 30(5), 30-37. | Should be online via Skype. |
| W14 | 04/28 | No Class | Working on Final Project |  |  |
| W15 | 05/02 | Future Research Trends of Quality Engineering |  |  |  |
| W15 | 05/04 | **Final Project Presentation** | Each Team/Individual Student should prepare 15 min presentation. |  |  |
| W16 | 05/09 | No Class | Working on Final Exam and Project Report |  | The instructor will be in CHI 2017 in Denver. |
| W16 | 05/11 | No Class | Working on Final Exam |  | **Final Project Report Due 05/11** |
| W17 |  | Exam Week |  |  | **Final Exam Due 05/15** |