

## Documents

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### **Teaching programming to millennials, from paper to digital**

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### **Abstract**

In this article we show the development process to create a programming course for the first-year students. These young people are very prompt to be influenced by technology, they are constantly immersed in smartphones, connected 24/7. This raises the question; how can we interest a well-connected student to learn programming? Some years ago, we used to have paper and pencil to teach 'algorithms' while trying to bring a quick start to programming activities on basic science and engineering. Nowadays this approach is not viable, we need to use the same tools and platforms used by the students to access social media and the Internet in general, we need to use the computer directly to show them a programming language and simple tools for development. This paper describes the main goal of this course, bring the tools a student needs from simple to complex stage, based in case study methodology. In the first sessions, students are being monitored and guided by the teacher at all times. Later on, and progressively reaching the end of the course, the students will have less time with the teachers and more independence in order to develop self-learning skills. © 2019 IEEE.

### **Index Keywords**

Computer programming, Curricula, E-learning, Teaching, Virtual reality, Visualization; Basic science, Case study methodologies, Development process, First year students, Programming activities, Programming course, Self-learning, Teaching programming; Students; Computers, Development, Engineering, Interest, Paper, Processes, Technology, Tools

### **References**

- Chaudhary, V., Agrawal, V., Sureka, P., Sureka, A.  
**An experience report on teaching programming and computational thinking to elementary level children using lego robotics education kit**  
(2016) *2016 IEEE Eighth International Conference on Technology for Education (T4E)*, pp. 38-41.  
IEEE, Dec.
- Deterding, S., Dixon, D., Khaled, R., Nacke, L.  
**From game design elements to gamefulness: Defining "gamification"**  
*Proceedings of the 15th International Academic MindTrek Conference: Envisioning Future Media Environments, MindTrek '11*, pp. 9-15.  
ACM, New York, NY, USA, 2011. event-place: Tampere, Finland
- A. f. C. M. A. Joint Task Force on Computing Curricula and I. C. Society.  
Computer Science Curricula 2013: Curriculum Guidelines for Undergraduate Degree Programs in Computer Science. ACM, New York, NY, USA, 2013

- Linn, M.C., Clancy, M.J.  
**The case for case studies of programming problems**  
(1992) *Commun. Acm*, 35 (3), pp. 121-132.  
Mar.
- Malik, S.I., Coldwell-Neilson, J.  
**A model for teaching an introductory programming course using ADRI**  
(2017) *Education and Information Technologies*, 22 (3), pp. 1089-1120.  
May
- Perez, F., Granger, B.E.  
**Ipython: A system for interactive scientific computing**  
(2007) *Computing in Science & Engineering*, 9 (3), pp. 21-29.
- Watson, C., Li, F.W.  
**Failure rates in introductory programming revisited**  
*Proceedings of the 2014 Conference on Innovation & Technology in Computer Science Education*, pp. 39-44.  
ITiCSE '14 ACM, New York, NY, USA, 2014. event-place: Uppsala, Sweden

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