

Department of Computer Science (SF)

Value Added Course

19UCSV02-Embedded System for Daily Life

Course Objective

To introduce students to the modern embedded systems and to show how to understand and use them in daily life, such systems using a concrete platform built around.

Course Outcomes (CO)

At the end of this course, students should be able to:

- 1) Describe the differences between the general computing system and the embedded system
- 2) Different design platforms used for an embedded systems application
- 3) Understand the concepts of sensors used in various fields
- 4) Foster ability to understand the role of embedded systems in industry.
- 5) Foster ability to understand the design concept of embedded systems.

Syllabus

Unit I (10 Hours)

Introduction to embedded systems, embedded computer, Examples of embedded systems-digital camera, automotive embedded system, home security system, automatic washing machine, personal digital assistant, Industrial robots, Automated teller machine, calculator.

Unit II (10 Hours)

Embedded system in biomedical field- Preventive care through biomedical sensors, Telemedicine, Biomedical sensors, Pacemakers, Glucose monitoring, Fitness trackers, clinical care through embedded system, smart hospital beds, clinical monitoring, Remote patient monitoring

Unit III (10 Hours)

Embedded system in Defence - Intelligence gathering operations, embedded computing, cyber security, vehicle electronics, Futures of embedded system-Machine learning, UI design, board bring up, Data mining, Embedded systems with IOT.

Text Books:

- 1) “Embedded Systems: A Contemporary Design Tool – James K. Peckol”, John Wiley India Pvt. Ltd, 2009.
- 2) “Embedded system architecture, Programming and design”, Raj Kamal, 2nd Edition, Tata Mc’Graw Hill, 2011.
- 3) “Embedded Systems Architecture A Comprehensive Guide for Engineers and Programmers”, Tammy Noergaard, Elsevier, 2nd edition, 2013.

Reference Books:

- 1) K.V. Shibu, Introduction To Embedded Systems, Tata McGraw, 2017.
- 2) Peter Barry and Patric Crowley, Modern Embedded Computing: Designing Connected, Pervasive, Media-Rich Systems, publisher: Morgan Kaufmann, 2012.



PRINCIPAL

Dr. R. MUTHUKUMARAN,
M.A., M.Phil., B.Ed., Ph.D.,
PRINCIPAL
N.G.M. College, Pollachi - 642 001
Coimbatore District



HOD SIGNATURE

Dr. M.SAKTHI, M.Sc., M.Phil., Ph.D.,
Associate Professor & Head
PG Department of Computer Science
NGM College, Pollachi - 642 001.



NALLAMUTHU GOUNDER MAHALINGAM COLLEGE (AUTONOMOUS)

Re-Accredited by NAAC & ISO 9001:2015 Certified
Affiliated to Bharathiar University, Coimbatore, Pollachi, Tamilnadu,

VALUE ADDED COURSE

Certificate of Completion

This is to certify that Mr. **Arunagiri.M (17-CE-01)**, **Department of B.Sc (CS)**, of Nallamuthu Gounder Mahalingam College (Autonomous), Pollachi, has successfully completed Value Added Course entitled **EMBEDDED SYSTEM FOR DAILY LIFE** during Feb 2020 to May 2020.

M.S. [Signature]

HOD

[Signature]

Principal



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VALUE ADDED COURSE

Certificate of Completion

This is to certify that Mr. **Dhinakaran.B (17-CE-05)**, **Department of B.Sc (CS)**, of Nallamuthu Gounder Mahalingam College (Autonomous), Pollachi, has successfully completed Value Added Course entitled **EMBEDDED SYSTEM FOR DAILY LIFE** during Feb 2020 to May 2020.

M.S. [Signature]

HOD

[Signature]

Principal



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VALUE ADDED COURSE

Certificate of Completion

This is to certify that Mr. **Prakash Raj.A (17-CE-18)**, **Department of B.Sc (CS)**,
of Nallamuthu Gounder Mahalingam College (Autonomous), Pollachi, has successfully completed
Value Added Course entitled **EMBEDDED SYSTEM FOR DAILY LIFE** during Feb 2020 to May 2020.

M.S.

HOD

Principal →

Principal



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VALUE ADDED COURSE

Certificate of Completion

This is to certify that Ms. **Archana.R (17-CE-28)**, **Department of B.Sc (CS)**, of Nallamuthu Gounder Mahalingam College (Autonomous), Pollachi, has successfully completed Value Added Course entitled **EMBEDDED SYSTEM FOR DAILY LIFE** during Feb 2020 to May 2020.

M. S. ...

HOD

[Signature]

Principal



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VALUE ADDED COURSE

Certificate of Completion

This is to certify that Ms. **Christy.L (17-CE-31)**, **Department of B.Sc (CS)**, of Nallamuthu Gounder Mahalingam College (Autonomous), Pollachi, has successfully completed Value Added Course entitled **EMBEDDED SYSTEM FOR DAILY LIFE** during Feb 2020 to May 2020.

M.S.

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[Signature]

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VALUE ADDED COURSE

Certificate of Completion

This is to certify that Ms. **Jamunapriya.G (17-CE-36)**, **Department of B.Sc (CS)**,
of Nallamuthu Gounder Mahalingam College (Autonomous), Pollachi, has successfully completed
Value Added Course entitled **EMBEDDED SYSTEM FOR DAILY LIFE** during Feb 2020 to May 2020.

M.S.

HOD

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VALUE ADDED COURSE

Certificate of Completion

This is to certify that Ms. **Malathy.S (17-CE-44)**, **Department of B.Sc (CS)**, of Nallamuthu Gounder Mahalingam College (Autonomous), Pollachi, has successfully completed Value Added Course entitled **EMBEDDED SYSTEM FOR DAILY LIFE** during Feb 2020 to May 2020.

M.S.

HOD



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VALUE ADDED COURSE

Certificate of Completion

This is to certify that Ms. **Manjula Devi.M (17-CE-45)**, **Department of B.Sc (CS)**,
of Nallamuthu Gounder Mahalingam College (Autonomous), Pollachi, has successfully completed
Value Added Course entitled **EMBEDDED SYSTEM FOR DAILY LIFE** during Feb 2020 to May 2020.

M.S.

HOD

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VALUE ADDED COURSE

Certificate of Completion

This is to certify that Ms. **Preethi.S (17-CE-49)**, **Department of B.Sc (CS)**, of Nallamuthu Gounder Mahalingam College (Autonomous), Pollachi, has successfully completed Value Added Course entitled **EMBEDDED SYSTEM FOR DAILY LIFE** during Feb 2020 to May 2020.

M.S.

HOD



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VALUE ADDED COURSE

Certificate of Completion

This is to certify that Ms. **Vinu Dharsana.V (17-CE-60)**, **Department of B.Sc (CS)**, of Nallamuthu Gounder Mahalingam College (Autonomous), Pollachi, has successfully completed Value Added Course entitled **EMBEDDED SYSTEM FOR DAILY LIFE** during Feb 2020 to May 2020.

M.S. [Signature]

HOD

[Signature]

Principal



Nallamuthu Gounder Mahalingam College

Department of Computer Science (SF)



Value Added Course 2019 -2020

19UCSV02 "Embedded System for Daily Life"

Duration : 30 Hours

Course Objective

To introduce students to the modern embedded systems and to show how to understand and use them in daily life, such systems using a concrete platform built around.

Dr.M.Sakthi
HoD

Module 1

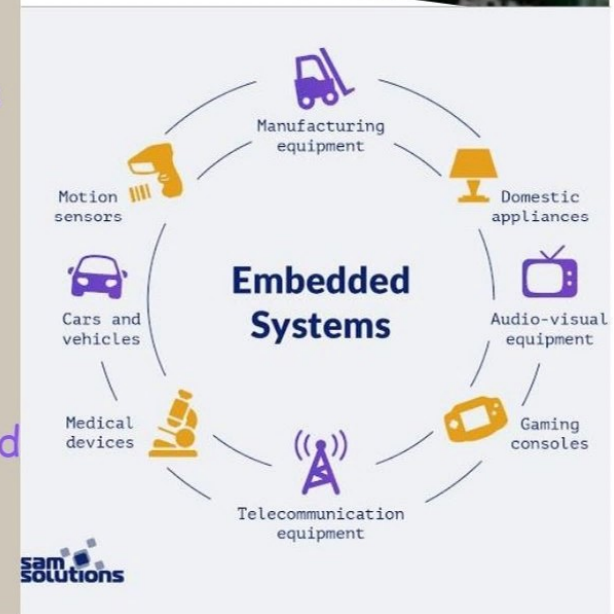
Introduction, Embedded Computer, Examples

Module 2

Embedded system in Biomedical Field, Fitness trackers, Remote patient monitoring

Module 3

Embedded system in Defense, vehicle electronics, Embedded systems with IoT.



Dr.S. Saravanababu
Dean - Academic

Dr.P.M.Palanisamy
Principal