KLE Technological University

SCHOOL OF ELECTRONICS ENGINEERING

Course Content

Course Code: 18EECE406	Course Title: AUTOSAR and Infotainment Systems	
L-T-P : 3-0-0-0	Credits: 3	Contact Hrs: 3 Hours
ISA Marks: 50	ESA Marks: 50	Total Marks: 100
Teaching Hrs: 40		Exam Duration: 3

Content	Hrs
Unit – 1	
Chapter No. 1: AUTOSAR Fundamentals Evolution of AUTOSAR – Motivations and Objectives AUTOSAR consortium – Stake holders – work Packages, AUTOSAR Partnership, Goals of the partnership, Organization of the partnership, AUTOSAR specification, AUTOSAR Current development status, BSW Conformance classes: ICC1, ICC2, ICC3, and Drawbacks of AUTOSAR.	8 hrs
Chapter No. 2: AUTOSAR layered Architecture AUTOSAR Basic software, Details on the various layers , Details on the stacks Virtual Function Bus (VFB) Concept Overview of AUTOSAR Methodology , Tools and Technologies for AUTOSAR AUTOSAR Application Software Component (SW-C) ,Types of SW-components AUTOSAR Run Time Environment (RTE): RTE Generation Process: Contract Phase, Generation Phase, MCAL, IO HW Abstraction Layer, Partial Networking, Multicore, J1939 Overview, AUTOSAR Ethernet, AUTOSAR E2E Overview , AUTOSAR XCP, Metamodel , From the model to the process , Software development process.	7 hrs
Unit – 2	
Chapter No. 3: Methodology of AUTOSAR and Communication in AUTOSAR CAN Communication, CAN FD, CAN in Automation, CANape, Application Layer and RTE, intra and inter ECU communication, Client-Server Communication, Sender-Receiver, Communication, CAN Driver, Communication Manager (ComM), Overview of Diagnostics Event and Communication Manager	10 hrs
Chapter No. 4: BSW Development and Integration BSW Constituents: Memory layer, COM and Services layer, ECU abstraction, AUTOSAR, Operating system, Interfaces: Standard interface, AUTOSAR standardized interface, BSW-RTE interface,(AUTOSAR interface), BSW-ECU hardware interface, Complex device drivers and BSW module configuration, AUTOSAR Integration.	5 hrs
Unit – 3	
Chapter No. Chapter 5: Infotainment Systems in Automobiles Infotainment Systems Fundamentals: Radio, Multimedia, and Navigation: Introduction to In Vehicle Infotainment (IVI) systems, Use of operating systems in IVI , GENIVI Alliance, Tuner: AM/FM, XM/Sirrus, DAB/DMB, Software Defined Radio; Concepts of HD, radio, Ensemble, Traffic Announcements, Spread Spectrum, d. Multimedia: Types of Media; Music, Video, Podcasts, etc. Media management; Playback, Track Control, Metadata, Playlists, Categories, Trick play, Audio/Video Source Management, Navigation: Points of Interests, Routes, Waypoints, Dead Reckoning position, Traffic Info, GLONASS, GNSS, RTK, GPS, and SBAS/GBAS,INS f. Media types: CD, DVD, CDDA,	5 hrs

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USB, SDCARD, Media Formats:MP3, WMV, RealAudio/Video, QTP, Architecture – Design Patterns - Proxies, Adaptors, Interfaces, Singleton, Factory method	
Chapter No. Chapter 6: Communication Systems in Automobiles Automotive & Consumer Electronic Communication Systems: Introduction to Bluetooth – Pairing, HFP, A2DP, PAN, PBAP, DUN, Concepts of MOST network, DLNA, AVB, Concepts of TCP/IP, Ethernet, WiFi, WiFi Direct, MyWiFi and CAN, Mirror link, Tethering	5 hrs

Electronics & Communication Engg
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Course Feedback

(To be filled by each Student at the time of Course Completion)

Dear Students,

Please give us your views on this Course so that the course quality can be improved. You are encouraged to be frank and constructive in your comments.

Course Teacher

Department SOECE Name of the Teacher V. f. Mane

Course Title AUTOSAR Course code: 20EC6DE06 Semester VI

a. The design of the course	Strongly agree	Agree	Uncertain	Disagree	Strongly Disagree
The course objectives were clear	✓				
The course contents met with your expectation	✓				
The course work load was manageable	✓				
The lecture sequence was well planned to meet learning outcomes	✓				
The contents were illustrated with adequate examples	✓				
The course exposed you to new knowledge and practice	✓				
The level of the course was moderate	✓				

b. The conduct of the course	Strongly agree	Agree	Uncertain	Disagree	Strongly Disagree
The lectures were easy to understand & ideas and concepts presented clearly	✓				
The teaching aids were effectively used	✓				
The course material handed out was adequate	✓				
Were objectives of the course realized?	✓				
The overall environment in the class was conducive to learning	✓				

c. Learning Resources	Strongly agree	Agree	Uncertain	Disagree	Strongly Disagree
Learning materials (Lesson Plans, Course Notes etc.) were relevant and useful		✓			
Recommended reading Books etc. were relevant and appropriate		✓			
The provision of learning resources in the library was adequate and appropriate		✓			

d. Assessment	Strongly agree	Agree	Uncertain	Disagree	Strongly Disagree
The method of assessment were reasonable	✓				
Feedback on CIE assessment was timely	✓				
Feedback on CIE assessment was helpful	✓				

Suggestions for improvement:

Overall rating of the course: (√ tick mark the appropriate)

90% -100% [✓] 80% - 90% [ ] 70% - 80% [ ] 60% - 70% [ ] 50% - 60% [ ] Below 50% [ ]

Date: 30/01/21 Signature

KLE Society's

KLE Technological University, Hubli

Course Feedback

(To be filled by each Student at the time of Course Completion)

Dear Students,

Please give us your views on this Course so that the course quality can be improved. You are encouraged to be frank and constructive in your comments.

Course Teacher

Department _____ Name of the Teacher V. R. Hane

Course Title AUTOSAR Course code: 20EEC0406 Semester VII

a. The design of the course	Strongly agree	Agree	Uncertain	Disagree	Strongly Disagree
The course objectives were clear	✓				
The course contents met with your expectation	✓				
The course work load was manageable	✓				
The lecture sequence was well planned to meet learning outcomes	✓				
The contents were illustrated with adequate examples	✓				
The course exposed you to new knowledge and practice	✓				
The level of the course was moderate	✓				

b. The conduct of the course	Strongly agree	Agree	Uncertain	Disagree	Strongly Disagree
The lectures were easy to understand & ideas and concepts presented clearly	✓				
The teaching aids were effectively used	✓				
The course material handed out was adequate	✓				
Were objectives of the course realized?	✓				
The overall environment in the class was conducive to learning	✓				

c. Learning Resources	Strongly agree	Agree	Uncertain	Disagree	Strongly Disagree
Learning materials (Lesson Plans, Course Notes etc.) were relevant and useful	✓				
Recommended reading Books etc. were relevant and appropriate	✓				
The provision of learning resources in the library was adequate and appropriate	✓				

d. Assessment	Strongly agree	Agree	Uncertain	Disagree	Strongly Disagree
The method of assessment were reasonable	✓				
Feedback on CIE assessment was timely	✓				
Feedback on CIE assessment was helpful	✓				

Suggestions for improvement:

Overall rating of the course: (√ tick mark the appropriate)

90% -100% [✓] 80% - 90% [ ] 70% - 80% [ ] 60% - 70% [ ] 50% - 60% [ ] Below 50% [ ]

Date: 30/01/21

VRH
Signature

KLE Society's

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Course Feedback

(To be filled by each Student at the time of Course Completion)

Dear Students,

Please give us your views on this Course so that the course quality can be improved. You are encouraged to be frank and constructive in your comments.

Course Teacher

Department SoECE Name of the Teacher V.R. Mane

Course Title Autosar Course code: 20EC06E6 Semester VIA

a. The design of the course	Strongly agree	Agree	Uncertain	Disagree	Strongly Disagree
The course objectives were clear	✓				
The course contents met with your expectation	✓				
The course work load was manageable	✓				
The lecture sequence was well planned to meet learning outcomes	✓				
The contents were illustrated with adequate examples	✓				
The course exposed you to new knowledge and practice	✓				
The level of the course was moderate	✓				

b. The conduct of the course	Strongly agree	Agree	Uncertain	Disagree	Strongly Disagree
The lectures were easy to understand & ideas and concepts presented clearly		✓			
The teaching aids were effectively used		✓			
The course material handed out was adequate		✓			
Were objectives of the course realized?		✓			
The overall environment in the class was conducive to learning		✓			

c. Learning Resources	Strongly agree	Agree	Uncertain	Disagree	Strongly Disagree
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Suggestions for improvement:

Overall rating of the course: (✓ tick mark the appropriate)

90% -100% [✓] 80% - 90% [ ] 70% - 80% [ ] 60% - 70% [ ] 50% - 60% [ ] Below 50% [ ]

Date: 30/9/21 Signature

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Course Feedback

(To be filled by each Student at the time of Course Completion)

Dear Students,

Please give us your views on this Course so that the course quality can be improved. You are encouraged to be frank and constructive in your comments.

Course Teacher

Department SoECE Name of the Teacher V.R. Mane

Course Title Autosar Course code: 21ECE6406 Semester VI

a. The design of the course	Strongly agree	Agree	Uncertain	Disagree	Strongly Disagree
The course objectives were clear	✓				
The course contents met with your expectation	✓				
The course work load was manageable	✓				
The lecture sequence was well planned to meet learning outcomes	✓				
The contents were illustrated with adequate examples	✓				
The course exposed you to new knowledge and practice	✓				
The level of the course was moderate	✓				

b. The conduct of the course	Strongly agree	Agree	Uncertain	Disagree	Strongly Disagree
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The method of assessment were reasonable	✓				
Feedback on CIE assessment was timely	✓				
Feedback on CIE assessment was helpful	✓				

Suggestions for improvement:

Overall rating of the course: (✓ tick mark the appropriate)

90% -100% [✓] 80% - 90% [ ] 70% - 80% [ ] 60% - 70% [ ] 50% - 60% [ ] Below 50% [ ]

Date: 30/04/24 Signature

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Course Feedback

(To be filled by each Student at the time of Course Completion)

Dear Students,

Please give us your views on this Course so that the course quality can be improved. You are encouraged to be frank and constructive in your comments.

Course Teacher

Department SoECE Name of the Teacher V.R. Mane

Course Title AUTOSAR Course code: 20ECE406 Semester VII

a. The design of the course	Strongly agree	Agree	Uncertain	Disagree	Strongly Disagree
The course objectives were clear	✓				
The course contents met with your expectation		✓			
The course work load was manageable	✓				
The lecture sequence was well planned to meet learning outcomes	✓				
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Overall rating of the course: (√ tick mark the appropriate)

90% -100% ☑ 80% - 90% ☐ 70% - 80% ☐ 60% - 70% ☐ 50% - 60% ☐ Below 50% ☐

Date: 30/01/21 Signature

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KLE Society's
B V Bhoomaraddi College of
Engineering & Technology, Hubli

Alumni Survey Form

Dear proud alumni ,

The following are the list of skills and competencies that engineering graduates should have. We seek your participati in the Alumni Survey conducted to know your satisfaction with the *level of competency* you have achieved as a result your education at the Institution and also able to practice the same. For each question, indicate your answer with symbol "A" in the appropriate column/box. All individual responses will be kept confidential. Only statistically analyze results from the entire population will be shared.

Regards,
Head of the department/School

S.No	Competencies	Level of Competency			
		Completely Dissatisfied	Dissatisfied	Satisfied	Completely S
1	Engineering knowledge :				
	Ability to apply the knowledge of mathematics, science, engineering fundamentals, and engineering specialization for the solution of engineering problems			A	
2	Problem analysis:				
	Ability to identify, characterize and formulate a solution plan for solving engineering problems				A
	Ability to execute a solution process and analyse results				A
3	Design/Development of Solutions:				
	Ability to design components, systems or processes that meet specified needs, following appropriate engineering design process			A	
	Conduct investigations of complex problems:				
	Ability to conduct investigations or tests through design of experiments to understand and solve engineering problems				A
	Ability to critically analyse and interpret data to reach valid conclusions				A
5	Modern tool usage:				
	Ability to identify / create and use appropriate modern engineering and IT tools, techniques and resources to solve engineering problems				A

Alumni Survey Form

6	**The engineer and society:**				
	Demonstrate an understanding of professional engineering regulations, legislation and standards				A
7	**Environment and sustainability:**				
	Ability to understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development				A
8	**Ethics:**				
	Ability to apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice				A
9	**Individual and team work:**				
	Ability to function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings				A
10	**Communication:**				
	Ability to comprehend technical literature and prepare effective reports and design documents				A
	Demonstrate competence in listening, speaking, and presentation				A
11	**Project management and finance:**				
	Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments				A
12	**Life-long learning:**				
	Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change			A	
13	**Modeling and Design**				
	An ability to apply mathematical foundations, algorithmic principles, and computer science theory in the modeling and design of computer-based systems in a way that demonstrates comprehension of the tradeoffs involved in design choices.			A	
14	**Construction of software system**				
	An ability to apply design and development principles in the construction of software systems of varying complexity.			A	

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Alumni Survey Form

Indicate your Answer with symbol "A" in the appropriate box.

1) How would you rate your overall satisfaction with your preparation to become an engineer?

Not Satisfied		Little Satisfied		Satisfied	A	Very Satisfied	

2) In general, the department has provided a _____ quality academic program?

Poor		OK		Good	A	Very Good	

Name: Anita G. H.	Branch: E&C
e-mail id: 12anitagh@gmail.com	Batch: 2015-2019
Name of the company:	
Correspondence Address: Plot no. 51, Shanti Nagar, Bagalkot, 587101	
Signature: Anita	

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Regards,
Head of the department/School

S.No	Competencies	Level of Competency			
		Completely Dissatisfied	Dissatisfied	Satisfied	Completely Sa
1	**Engineering knowledge :**				
	Ability to apply the knowledge of mathematics, science, engineering fundamentals, and engineering specialization for the solution of engineering problems			✓	
2	**Problem analysis:**				
	Ability to identify, characterize and formulate a solution plan for solving engineering problems			✓	
	Ability to execute a solution process and analyse results			✓	
3	**Design/Development of Solutions:**				
	Ability to design components, systems or processes that meet specified needs, following appropriate engineering design process			✓	
4	**Conduct investigations of complex problems:**				
	Ability to conduct investigations or tests through design of experiments to understand and solve engineering problems			✓	
	Ability to critically analyse and interpret data to reach valid conclusions			✓	
5	**Modern tool usage:**				
	Ability to identify / create and use appropriate modern engineering and IT tools, techniques and resources to solve engineering problems			✓	

Alumni Survey Form

6	**The engineer and society:**				
	Demonstrate an understanding of professional engineering regulations, legislation and standards			✓	
7	**Environment and sustainability:**				
	Ability to understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development				✓
8	**Ethics:**				
	Ability to apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice		✓		
9	**Individual and team work:**				
	Ability to function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings				✓
10	**Communication:**				
	Ability to comprehend technical literature and prepare effective reports and design documents				✓
	Demonstrate competence in listening, speaking, and presentation			✓	
11	**Project management and finance:**				
	Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments			✓	
12	**Life-long learning:**				
	Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change			✓	
13	**Modeling and Design**				
	An ability to apply mathematical foundations, algorithmic principles, and computer science theory in the modeling and design of computer-based systems in a way that demonstrates comprehension of the tradeoffs involved in design choices.			✓	
14	**Construction of software system**				
	An ability to apply design and development principles in the construction of software systems of varying complexity.			✓	

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Alumni Survey Form

Indicate your Answer with symbol "A" in the appropriate box.

1) How would you rate your overall satisfaction with your preparation to become an engineer?

Not Satisfied ☐ Little Satisfied ☐ Satisfied ☑ Very Satisfied ☐

2) In general, the department has provided a _____ quality academic program?

Poor ☐ OK ☐ Good ☑ Very Good ☐

Name: Yash. Deepak. Khokale	Branch: E&C
e-mail id: yashkhokale@gmail.com	Batch: 4th
Name of the company: Reliance Jio Infocomm Limited (RJIL)	
Correspondence Address: Ragati Colony, near diamond hotel, Khokale Mala, Sangli, Maharashtra.	
Signature: Khokale	

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Alumni Survey Form

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Regards,
Head of the department/School

S.No	Competencies	Level of Competency			
		Completely Dissatisfied	Dissatisfied	Satisfied	Completely
1	Engineering knowledge :				
	Ability to apply the knowledge of mathematics, science, engineering fundamentals, and engineering specialization for the solution of engineering problems			A	
2	Problem analysis:				
	Ability to identify, characterize and formulate a solution plan for solving engineering problems			A	
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	Ability to design components, systems or processes that meet specified needs, following appropriate engineering design process			A	
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	Ability to conduct investigations or tests through design of experiments to understand and solve engineering problems			A	
	Ability to critically analyse and interpret data to reach valid conclusions				A
5	Modern tool usage:				
	Ability to identify / create and use appropriate modern engineering and IT tools, techniques and resources to solve engineering problems			A	

Alumni Survey Form

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	Demonstrate an understanding of professional engineering regulations, legislation and standards				A
7	Environment and sustainability:				
	Ability to understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development			A	
8	Ethics:				
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9	Individual and team work:				
	Ability to function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings			A	
10	Communication:				
	Ability to comprehend technical literature and prepare effective reports and design documents				A
	Demonstrate competence in listening, speaking, and presentation				A
11	Project management and finance:				
	Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments			A	
12	Life-long learning:				
	Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change			A	
13	Modeling and Design				
	An ability to apply mathematical foundations, algorithmic principles, and computer science theory in the modeling and design of computer-based systems in a way that demonstrates comprehension of the tradeoffs involved in design choices.			A	
14	Construction of software system				
	An ability to apply design and development principles in the construction of software systems of varying complexity.			A	

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Alumni Survey Form

Indicate your Answer with symbol "A" in the appropriate box.

1) How would you rate your overall satisfaction with your preparation to become an engineer?

Not Satisfied ☐ Little Satisfied ☐ Satisfied ☑ Very Satisfied ☐

2) In general, the department has provided a _____ quality academic program?

Poor ☐ OK ☑ Good ☐ Very Good ☐

Name: SONAL. M. PRASAD	Branch: ECE
e-mail id: sonal.nitchu@gmail.com	Batch: 2015-19
Name of the company: NA	
Correspondence Address: H.No: 01/11, JSW Township, P.O. Vidyanagar, ~~For~~ Vidyanagar, Toranagallu, Ballari 583275	
Signature:	

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Alumni Survey Form

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Regards,
Head of the department/School

S.No	Competencies	Level of Competency			
		Completely Dissatisfied	Dissatisfied	Satisfied	Completely S
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	Ability to apply the knowledge of mathematics, science, engineering fundamentals, and engineering specialization for the solution of engineering problems				A
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5	**Modern tool usage:**				
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Alumni Survey Form

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	Demonstrate an understanding of professional engineering regulations, legislation and standards				A
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	Ability to understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development			A	
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	Ability to comprehend technical literature and prepare effective reports and design documents			A	
	Demonstrate competence in listening, speaking, and presentation			A	
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	An ability to apply mathematical foundations, algorithmic principles, and computer science theory in the modeling and design of computer-based systems in a way that demonstrates comprehension of the tradeoffs involved in design choices.			A	
14	**Construction of software system**				
	An ability to apply design and development principles in the construction of software systems of varying complexity.			A	

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Alumni Survey Form

Indicate your Answer with symbol "A" in the appropriate box.

1) How would you rate your overall satisfaction with your preparation to become an engineer?

Not Satisfied [ ] Little Satisfied [ ] Satisfied [A] Very Satisfied [ ]

2) In general, the department has provided a _____ quality academic program?

Poor [ ] OK [ ] Good [ ] Very Good [A]

Name: VARSHA HOSAMANI	Branch: EC
mail id: varsha.vmh@gmail.com	Batch: 2015 - 2019
Name of the company: PricewaterhouseCoopers.	
Correspondence Address: 25, Anugraha, Vijaynagar, Sadhankeri Dharwad.	
Signature: Varsh	

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		Completely Dissatisfied	Dissatisfied	Satisfied	Completely S
	Engineering knowledge :				
	Ability to apply the knowledge of mathematics, science, engineering fundamentals, and engineering specialization for the solution of engineering problems				A
2	**Problem analysis:**				
	Ability to identify, characterize and formulate a solution plan for solving engineering problems			A	
	Ability to execute a solution process and analyse results			A	
3	**Design/Development of Solutions:**				
	Ability to design components, systems or processes that meet specified needs, following appropriate engineering design process				A
	Conduct investigations of complex problems:				
	Ability to conduct investigations or tests through design of experiments to understand and solve engineering problems				A
	Ability to critically analyse and interpret data to reach valid conclusions				A
5	**Modern tool usage:**				
	Ability to identify / create and use appropriate modern engineering and IT tools, techniques and resources to solve engineering problems			A	

Alumni Survey Form

6	The engineer and society:				
	Demonstrate an understanding of professional engineering regulations, legislation and standards				A
7	Environment and sustainability:				
	Ability to understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development				A
8	Ethics:				
	Ability to apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice				A
9	Individual and team work:				
	Ability to function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings			A	
10	Communication:				
	Ability to comprehend technical literature and prepare effective reports and design documents			A	
	Demonstrate competence in listening, speaking, and presentation				A
11	Project management and finance:				
	Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments				A
12	Life-long learning:				
	Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change				A
13	Modeling and Design				
	An ability to apply mathematical foundations, algorithmic principles, and computer science theory in the modeling and design of computer-based systems in a way that demonstrates comprehension of the tradeoffs involved in design choices.			A	
14	Construction of software system				
	An ability to apply design and development principles in the construction of software systems of varying complexity.			A	

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Alumni Survey Form

Indicate your Answer with symbol "A" in the appropriate box.

1) How would you rate your overall satisfaction with your preparation to become an engineer?

Not Satisfied [ ] Little Satisfied [ ] Satisfied [ ] Very Satisfied [✓]

2) In general, the department has provided a _____ quality academic program?

Poor [ ] OK [ ] Good [✓] Very Good [ ]

Name: Shweta Prahlad Mujumdar	Branch: Electronics and Communication
E-mail id: shweta.mujumdar24@gmail.com	Batch: 2015 - 2019
Name of the company: Price Waterhouse Coopers (PWC)	
Correspondence Address: Service Delivery Center (SDC), Challaghatta, Bangalore.	
Signature:	

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Engineering & Technology, Hubli

Employers Feedback form

Dear Sir/Madam,

We seek your kind participation in this process of collecting feedback about our graduates serving in your organization. Your inputs will be helping us to make required modifications in the existing curriculum, pedagogy to enhance the competencies of the graduating engineers. For each question, indicate your opinion with a tick mark in the appropriate column. All individual responses will be kept confidential. Only statistically analyzed results from the entire population will be shared.

Regards,

Head of the Department/School

Please rank the following qualities: 5 = excellent, 4 = high, 3 = good, 2 = average, 1 = low, NA= Not Applicable

S.No.	Qualities	1	2	3	4	5	NA
1	Ability to apply the knowledge of mathematics, science, engineering fundamentals, and engineering specialization for the solution of engineering problems					✓	
2	Ability to identify, characterize and formulate a solution plan for solving engineering problems					✓	
3	Ability to execute a solution process and analyze results					✓	
4	Ability to design components, systems or processes that meet specified needs, following appropriate engineering design process			✓			
5	Ability to conduct investigations or tests through design of experiments to understand and solve engineering problems					✓	
6	Ability to critically analyse and interpret data to reach valid conclusions				✓		
7	Ability to identify / create and use appropriate modern engineering and IT tools, techniques and resources to solve engineering problems				✓		
8	Demonstrate an understanding of professional engineering regulations, legislation and standards				✓		
9	Ability to understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development				✓		

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Employers Feedback form

10	Ability to apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice					✓	
	Qualities	1	2	3	4	5	NA
11	Ability to function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings					✓	
12	Ability to comprehend technical literature and prepare effective reports and design documents				✓		
13	Demonstrate competence in listening, speaking, and presentation					✓	
14	Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments				✓		
15	Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change				✓		
16	An ability to apply mathematical foundations, algorithmic principles, and computer science theory in the modeling and design of computer-based systems in a way that demonstrates comprehension of the tradeoffs involved in design choices.				✓		
17	An ability to apply design and development principles in the construction of software systems of varying complexity.				✓		

Space for comments:

Name of the organization: JUNIPER NETWORKS INDIA PVT LTD

Address: Etnath - Exora Business Park, Amane Belandure Khane Village, Marathalli Outer Ring Road Bangalore 103

Name of the contact person: Onkar Naik Dessai

e-mail id: odessai@juniper.net

Signature & seal:

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Employers Feedback form

Dear Sir/Madam,

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Head of the Department/School

Please rank the following qualities: 5 = excellent, 4 = high, 3 = good, 2 = average, 1 = low, NA= Not Applicable

S.No.	Qualities	1	2	3	4	5	NA
1	Ability to apply the knowledge of mathematics, science, engineering fundamentals, and engineering specialization for the solution of engineering problems			X			
2	Ability to identify, characterize and formulate a solution plan for solving engineering problems			X			
3	Ability to execute a solution process and analyze results			X			
4	Ability to design components, systems or processes that meet specified needs, following appropriate engineering design process			X			
5	Ability to conduct investigations or tests through design of experiments to understand and solve engineering problems		X				
6	Ability to critically analyse and interpret data to reach valid conclusions		X				
7	Ability to identify / create and use appropriate modern engineering and IT tools, techniques and resources to solve engineering problems				X		
8	Demonstrate an understanding of professional engineering regulations, legislation and standards						NA
9	Ability to understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development						NA

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10	Ability to apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice			X			
	Qualities	1	2	3	4	5	NA
11	Ability to function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings				X		
12	Ability to comprehend technical literature and prepare effective reports and design documents				X		
13	Demonstrate competence in listening, speaking, and presentation			X			
14	Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments			X			
15	Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change						NA
16	An ability to apply mathematical foundations, algorithmic principles, and computer science theory in the modeling and design of computer-based systems in a way that demonstrates comprehension of the tradeoffs involved in design choices.			X			
17	An ability to apply design and development principles in the construction of software systems of varying complexity.				X		

Space for comments: In general, students have prepared well for the interview and the test conducted, but when the scope changes they were not able to speed it up as the core or basic were missing instead end results are known as a standard or some steps are skipped to solve earlier.

Name of the organization: Cadence Design Systems

Address: Bangalore

Name of the contact person: Judis SA

e-mail id: judis@cadence.com.

Signature & seal:

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10	Ability to apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice				Ξ		
	Qualities	1	2	3	4	5	NA
11	Ability to function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings				Ξ		
12	Ability to comprehend technical literature and prepare effective reports and design documents				Ξ		
13	Demonstrate competence in listening, speaking, and presentation				Ξ		
14	Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments				Ξ		
15	Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change				Ξ		
16	An ability to apply mathematical foundations, algorithmic principles, and computer science theory in the modeling and design of computer-based systems in a way that demonstrates comprehension of the tradeoffs involved in design choices.					Ξ	
17	An ability to apply design and development principles in the construction of software systems of varying complexity.			Ξ			

Space for comments: I am pretty much happy with the Quality of the engineers hired from BVP College of Engg, Hubli.

Name of the organization: Central Engineering Applied Materials India Inventor 1st Floor, ITPB Whitefield Road, Bangalore 560066	
Name of the contact person: Hanish Kumar P K	
e-mail id: Hanish_Kumar@amat.com	Signature & seal:

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Dear Sir/Madam,

We seek your kind participation in this process of collecting feedback about our graduates serving in your organization. Your inputs will be helping us to make required modifications in the existing curriculum, pedagogy to enhance the competencies of the graduating engineers. For each question, indicate your opinion with a tick mark in the appropriate column. All individual responses will be kept confidential. Only statistically analyzed results from the entire population will be shared.

Regards,

Head of the Department/School:

Please rank the following qualities: **5** = excellent, **4** = high, **3** = good, **2** = average, **1** = low, NA= Not Applicable

S.No.	Qualities	1	2	3	4	5	NA
1	Ability to apply the knowledge of mathematics, science, engineering fundamentals, and engineering specialization for the solution of engineering problems					☑	
2	Ability to identify, characterize and formulate a solution plan for solving engineering problems					☑	
3	Ability to execute a solution process and analyze results				☑		
4	Ability to design components, systems or processes that meet specified needs, following appropriate engineering design process				☑		
5	Ability to conduct investigations or tests through design of experiments to understand and solve engineering problems				☑		
6	Ability to critically analyse and interpret data to reach valid conclusions			☑			
7	Ability to identify / create and use appropriate modern engineering and IT tools, techniques and resources to solve engineering problems					☑	
8	Demonstrate an understanding of professional engineering regulations, legislation and standards			☑			
9	Ability to understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development				☑		

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Please rank the following qualities: 5 = excellent, 4 = high, 3 = good, 2 = average, 1 = low, NA= Not Applicable

S.No.	Qualities	1	2	3	4	5	NA
1	Ability to apply the knowledge of mathematics, science, engineering fundamentals, and engineering specialization for the solution of engineering problems					✓	
2	Ability to identify, characterize and formulate a solution plan for solving engineering problems				✓		
3	Ability to execute a solution process and analyze results				✓		
4	Ability to design components, systems or processes that meet specified needs, following appropriate engineering design process				✓		
5	Ability to conduct investigations or tests through design of experiments to understand and solve engineering problems				✓		
6	Ability to critically analyse and interpret data to reach valid conclusions			✓			
7	Ability to identify / create and use appropriate modern engineering and IT tools, techniques and resources to solve engineering problems			✓			
8	Demonstrate an understanding of professional engineering regulations, legislation and standards					✓	
9	Ability to understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development				✓		

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10	Ability to apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice					✓	
	Qualities	1	2	3	4	5	NA
11	Ability to function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings				✓		
12	Ability to comprehend technical literature and prepare effective reports and design documents					✓	
13	Demonstrate competence in listening, speaking, and presentation				✓		
14	Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments				✓		
15	Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change				✓		
16	An ability to apply mathematical foundations, algorithmic principles, and computer science theory in the modeling and design of computer-based systems in a way that demonstrates comprehension of the tradeoffs involved in design choices.					✓	
17	An ability to apply design and development principles in the construction of software systems of varying complexity.				✓		

Space for comments: —

Name of the organization: SANKALP SEMICONDUCTOR PVT LTD

Address: NAVANAGAR, HUBLI – 580025

Name of the contact person: ASHWINI G

e-mail id: ashwini.gajaraan@sankalpsemi.com

Signature & seal:

Sankalp Semiconductor Pvt. Ltd. HUBLI

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Engineering & Technology, Hubli

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Head of the Department/School

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S.No.	Qualities	1	2	3	4	5	NA
1	Ability to apply the knowledge of mathematics, science, engineering fundamentals, and engineering specialization for the solution of engineering problems		✓				
2	Ability to identify, characterize and formulate a solution plan for solving engineering problems		✓	✓			
3	Ability to execute a solution process and analyze results						
4	Ability to design components, systems or processes that meet specified needs, following appropriate engineering design process			✓			
5	Ability to conduct investigations or tests through design of experiments to understand and solve engineering problems			✓			
6	Ability to critically analyse and interpret data to reach valid conclusions			✓			
7	Ability to identify / create and use appropriate modern engineering and IT tools, techniques and resources to solve engineering problems			✓			
8	Demonstrate an understanding of professional engineering regulations, legislation and standards				✓		
9	Ability to understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development				✓		

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Employers Feedback form

10	Ability to apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice			✓			
	Qualities	1	2	3	4	5	NA
11	Ability to function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings			✓			
12	Ability to comprehend technical literature and prepare effective reports and design documents			✓			
13	Demonstrate competence in listening, speaking, and presentation			✓			
14	Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments			✓			
15	Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change			✓			
16	An ability to apply mathematical foundations, algorithmic principles, and computer science theory in the modeling and design of computer-based systems in a way that demonstrates comprehension of the tradeoffs involved in design choices.				✓		
17	An ability to apply design and development principles in the construction of software systems of varying complexity.				✓		

Space for comments:

Name of the organization: Robert Bosch Engineering & Business Solutions Private Limited

Address:

Name of the contact person: Bharath. K

e-mail id: bharath.kalkaiah@in.bosch.com

Signature & seal:

KLE Technological University Mail

Placement Cell KLE TU,Hubballi -formerly BVBCET <placement@kletech.ac.in>

Request for "Employer Feedback" -- Continental

Thimmaiah S, Rithin <rithin.thimmaiah.s@continental-corporation.com> Tue, Jun 25, 2019 at 3:05 PM
To: "Placement Cell, KLE Technological University, Hubballi (formerly BVBCET)" <placement@kletech.ac.in>
Cc: "Panicker, Rajesh" <rajesh.panicker@continental-corporation.com>

Dear Kerure Sir,

We have received positive feedback in terms of the students' commitment and attitude. They have been able to cope well with our culture and have been performing well in the responsibilities that are assigned to them.

Regards

Rithin

[Quoted text hidden]

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Regards,

Head of the Department/School

Please rank the following qualities: 5 = excellent, 4 = high, 3 = good, 2 = average, 1 = low, NA= Not Applicable

S.No.	Qualities	1	2	3	4	5	NA
1	Ability to apply the knowledge of mathematics, science, engineering fundamentals, and engineering specialization for the solution of engineering problems						✓
2	Ability to identify, characterize and formulate a solution plan for solving engineering problems						✓
3	Ability to execute a solution process and analyze results					✓	
4	Ability to design components, systems or processes that meet specified needs, following appropriate engineering design process					✓	
5	Ability to conduct investigations or tests through design of experiments to understand and solve engineering problems					✓	
6	Ability to critically analyse and interpret data to reach valid conclusions				✓		
7	Ability to identify / create and use appropriate modern engineering and IT tools, techniques and resources to solve engineering problems					✓	
8	Demonstrate an understanding of professional engineering regulations, legislation and standards					✓	
9	Ability to understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development						✓

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Employers Feedback form

10	Ability to apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice					✓	
	Qualities	1	2	3	4	5	NA
11	Ability to function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings					✓	
12	Ability to comprehend technical literature and prepare effective reports and design documents					✓	
13	Demonstrate competence in listening, speaking, and presentation					✓	
14	Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments				✓		
15	Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change					✓	
16	An ability to apply mathematical foundations, algorithmic principles, and computer science theory in the modeling and design of computer-based systems in a way that demonstrates comprehension of the tradeoffs involved in design choices.					✓	
17	An ability to apply design and development principles in the construction of software systems of varying complexity.					✓	

Space for comments:

Name of the organization: INFORMATICA
Address: NO 66/1, BAGMANE COMMERZ Ø2
BAGMANE TECH PARK
C V RAMAN NAGAR, BENGALURU-560093

Name of the contact person: RAHUL KULKARNI

e-mail id: RKULKARNI@INFORMATICA.COM

Signature & seal:

INFORMATICA BUSINESS SOLUTIONS PVT. LTD. BANGALORE

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School of Electronics and Communication Engineering

FMTH0304 Rev. 2.1

Lesson Delivery Plan, Execution Status and Progress Monitoring

Name of the Staff Member: Mr. Venkatesh Mane Subject: **AUTOSAR & Infotainment systems** Year: 2019-20

Hrs required as per Syllabus: 40 Hrs available as per COE : 40 Additional Classes required (if any) : Nil

Lesson Delivery Plan		Execution Status		Progress Monitoring	
***Chapter No.* 1**	***Title:* AUTOSAR Fundamentals**				
Planned Start Date:	***Planned Completion Date:***			***Planned Hrs:* 6hrs**	***Engaged Hrs:***
Class No	*Portion to be covered per hour*	*Engaged Date*	*Extra*	*Experiences worth noting*	*Review (HOD)*
1	Introduction and overview of AUTOSAR.	19/8/19		Successfully completed on 1st Class. Read from examples of AUTOSAR Architecture was taught in class	
2	Need for AUTOSAR.	20/8/19			
3	AUTOSAR – Motivations and Objectives..	21/8/19			
4	AUTOSAR consortium – Stake holders – work Packages	26/8/19			
5	AUTOSAR Partnership, Goals of the partnership,.	27/8/19			
6	AUTOSAR specification,	28/8/19			
7	AUTOSAR Current development status	3/9/19			
8	BSW conformance classes	4/9/19			

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FMTH0304 Rev. 2.1

Lesson Delivery Plan, Execution Status and Progress Monitoring

Name of the Staff Member: Mr. Venkatesh Mane Subject: **AUTOSAR & Infotainment systems** Year : 2019-20

Hrs required as per Syllabus: 40 Hrs available as per COE : 40 Additional Classes required (if any) : Nil

***Chapter No. Title:* 2. AUTOSAR layered Architecture**

Planned Start Date: ***Planned Completion Date:*** ***Planned Hrs:*** : **5hrs** ***Engaged Hrs:***

Class No	*Portion to be covered per hour*	*Engaged Date*	*Extra*	*Experiences worth noting*	*Review (HOD)*
6	AUTOSAR Basic software.	9/9/19		Completed as problem	
7	AUTOSAR layers.	11/9/19			
8	Virtual Function Bus (VFB) Concept	16/9/19			
9	Overview of AUTOSAR Methodology , Tools and Technologies for AUTOSAR	17/9/19			
10	AUTOSAR Application Software Component (SW-C) ,Types of SW-components AUTOSAR Run Time Environment (RTE): RTE Generation Process: Contract Phase, Generation Phase,	18/9/19		AUTOSAR tools are discussed in class	
11	Partial Networking, Multicore, J1939 Overview, AUTOSAR Ethernet, AUTOSAR E2E Overview.	18/9/19			
12	AUTOSAR XCP, Software development process	18/9/19			

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FMTH0304 Rev. 2.1

Lesson Delivery Plan, Execution Status and Progress Monitoring

Name of the Staff Member: Mr. Venkatesh Mane subject: **AUTOSAR & Infotainment systems** Year : 2019-20

Hrs required as per Syllabus: 40 Hrs available as per COE : 40 Additional Classes required (if any) : Nil

***Chapter No. Title:* 3. Methodology of AUTOSAR and Communication in AUTOSAR**

Planned Start Date: ***Planned Completion Date:*** ***Planned Hrs:* : 5hrs** ***Engaged Hrs:***

Class No	*Portion to be covered per hour*	*Engaged Date*	*Extra*	*Experiences worth noting*	*Review (HOD)*
16	Methodology of AUTOSAR	30/9/19			
17	Communication in AUTOSAR	1/10/19			
18	CAN Communication	9/10/19		Completed as per plan. Communication protocols tools are not real time usage of the tools are discussed in class	
19	Application Layer and RTE	14/10/19			
20	intra and inter ECU communication	15/10/19			
21	Client-Server Communication	16/10/19			VCZ
22	Sender-Receiver Communication	21/10/19			
23	CAN Drivers	22/10/19			
24	Communication Manager (ComM)	23/10/19			
25	Overview of Diagnostics Event and Communication Manager	28/10/19			

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FMTH0304 Rev. 2.1

Lesson Delivery Plan, Execution Status and Progress Monitoring

Name of the Staff Member: Mr. Venkatesh Mane Subject: **AUTOSAR & Infotainment systems** Year : 2019-20

Hrs required as per Syllabus: 40 Hrs available as per COE : 40 Additional Classes required (if any) : Nil

***Chapter No. Title:* 4. BSW Development and Integration**

Planned Start Date: ***Planned Completion Date:*** ***Planned Hrs:*** : **5hrs** ***Engaged Hrs:***

Class No	*Portion to be covered per hour*	*Engaged Date*	*Extra*	*Experiences worth noting*	*Review (HOD)*
26	BSW Constituents	30/10/19		Completed successfully as per plan	
27	Memory layer, COM and Services layer	4/11/19			
28	ECU abstraction	5/11/19			
29	AUTOSAR Operating system	6/11/19			
30	Interfaces: Standard interface, AUTOSAR standardized interface, BSW-RTE interface,(AUTOSAR interface), BSW-ECU hardware interface, Complex device drivers and BSW module configuration, AUTOSAR Integration	6/11/19			

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Lesson Delivery Plan, Execution Status and Progress Monitoring

Name of the Staff Member: Mr. Venkatesh Mane Subject: **AUTOSAR & Infotainment systems** Year : 2019-20

Hrs required as per Syllabus: 40 Hrs available as per COE : 40 Additional Classes required (if any) : Nil

Chapter No. Title: **5. Infotainment Systems in Automobiles**

Planned Start Date: ***Planned Completion Date:*** ***Planned Hrs:*** **: 5hrs** ***Engaged Hrs:***

Class No	*Portion to be covered per hour*	*Engaged Date*	*Extra*	*Experiences worth noting*	*Review (HOD)*
31	Infotainment Systems Fundamentals: Radio, Multimedia, and Navigation	11/11/19			
32	Introduction to In Vehicle Infotainment (IVI) systems, Use of operating systems in IVI , GENIVI Alliance, Tuner: AM/FM, XM/Sirrus, DAB/DMB, Software Defined Radio;	12/11/19		Successfully completed as per plan	
33	Concepts of HD, radio, Ensemble, Traffic Announcements, Spread Spectrum, d. Multimedia: Types of Media; Music, Video, Podcasts, etc. Media management; Playback, Track Control, Metadata, Playlists, Categories, Trick play, Audio/Video Source Management	13/11/19			ok
34	Navigation: Points of Interests, Routes, Waypoints, Dead Reckoning position, Traffic Info, GLONASS, GNSS, RTK, GPS, and SBAS/GBAS,INS	18/11/19			
35	Media types: CD, DVD, CDDA, USB, SDCARD, Media Formats:MP3, WMV, RealAudio/Video, QTP, Architecture – Design Patterns - Proxies, Adaptors, Interfaces, Singleton, Factory method	19/11/19			

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KLE Technological University,
School of Electronics and Communication Engineering

Lesson Delivery Plan, Execution Status and Progress Monitoring

Name of the Staff Member: Mr. Venkatesh Mane Subject: **AUTOSAR & Infotainment systems** Year : 2019-20

Hrs required as per Syllabus: 40 Hrs available as per COE : 40 Additional Classes required (if any) : Nil

Chapter No. Title: **6. Communication Systems in Automobile**

Planned Start Date: ***Planned Completion Date:*** ***Planned Hrs:*** **: 5hrs** ***Engaged Hrs:***

Class No	*Portion to be covered per hour*	*Engaged Date*	*Extra*	*Experiences worth noting*	*Review (HOD)*
36	Introduction to Bluetooth – Pairing	20/11/19	0	Completed as per plan.	
37	HFP, A2DP, PAN, PBAP, DUN,	25/11/19			
38	Concepts of MOST network, DLNA, AVB	26/11/19			
39	Concepts of TCP/IP, Ethernet,	27/11/19			
40	WiFi, WiFi Direct, MyWiFi and CAN, Mirror link, Tethering	2/12/19			

Consolidated Report: → Microcontroller Abstraction layer concepts are to be brought in
→ More focus to be given to ECU Ab. layer
→ Network development an Analysis of CAN can be included.

No. of classes planned	No. of classes engaged
40	40

Signature of the staff member

KLE Society's

KLE Society's KLE Technological University

SCHOOL OF ELECTRONICS and COMMUNICATION ENGINEERING

LESSON -PLAN REVISION NOTE

Semester : VII

Course : UG

From: 19/8/19 To: 2/12/19 Subject & Code: AUTOSAR & Infotainment systems(**18EECE406**)

Year	*Change Summary*	*Author*	*Reviewed by*	*Approved by*	*Date*
2019-20	As per the feedback from technical experts from BOSCH and KPIT 1.Microcontroller Abstraction layer concepts are to be included to give the MCAL driver development experience. 2. More focus to be given on ECU abstraction modules to give an experience about driver development for the external peripheral interface to the core. 3. Network development and Analysis of CAN and tool sets V-model of development 4. Infotainment topics are to be dropped as there are no takeaway for this topics from industry side	Venkatesh Mane	Dr. Nalini C Iyer	Dr. Nalini C Iyer	2/12/19

Reference Documents (Tick √):

Lesson Plan Review Report ☐√

Previous Lesson Plan ☐√

Syllabus ☐√

Results ☐√

Any other (Give details) ☐

(V.R. Mane)

School of Electronics and Communication

1.4.1 Structured feedback for design and review of Syllabus

Course: AUTOSAR **Course code: 20EECE406**

Consolidated Report based on feedback taken from stake holders (employers, alumni, teachers and students) and analysis

Employers Feedback:

- There is a huge demand for AUTOSAR in automotive Industry.
- Enhance ability to apply design principles in the development of hardware and software systems of varying complexity, using state of art tools for the development of electronic systems.
- Ability for effective communication, problem solving, conflict resolution and leadership skills.

Teachers Feedback (Pre-BoS MoM):

- The course AUTOSAR and Infotainment is to be revised to AUTOSAR as the course AUTOSAR and Infotainment covers two wider domains.
- There is a need to focus on depth of one domain as there is a huge demand for AUTOSAR in automotive Industry.
- Collaboration with industry is required for design and hands-on for AUTOSAR.
- Formulation of application oriented examples.

Students Feedback:

- To focus on latest technological trends and development.
- Formulation of application oriented examples.

Alumni Feedback:

Recommended for co-delivery by industry experts.

Head of School
Electronics & Communication Engg
KLE Technological University

School of Electronics & Communication Engineering

KLE Tech University

BVBCET Campus, Hubballi –31

Pre - Board of Studies Meeting

of

School of Electronics and Communication Engineering

Hubballi, Karnataka

14th May 2020

KLE Technological University

(Established under Karnataka Act No.22, 2013)

Head of School
Electronics & Communication Engg
KLE Technological University

School of Electronics & Communication Engineering

KLE Tech University

BVBCET Campus, Hubballi –31

Action Report based on feedback analysis in Pre-boS

The following are the action items proposed during Pre - Board of Studies meeting of SoECE, KLE Technological University, Hubballi which was held on 14th May 2020.

Item No	Description	Action Taken
Pre-BoS	**Faculty Discussion**: Based on the discussions regarding the inputs from all stake holders, following action item as agreed upon by everyone were finalized and the same was circulated to all the faculty members on 14th May 2020. Persons responsible for these action items have already initiated the actions, which will be shared in the BoS meeting. ***Action Item No.1:Suggested course*** *with Project based learning emphasis* 1) AUTOSAR	Based on the feedback from Stake holders and discussion it is proposed to revise the course from **AUTOSAR and Infotainment** to **AUTOSAR** to cover depth in one domain only w.r.t MCAL and ECU abstraction layer for building applications to support the vehicle functions. Course prepares students to be industry ready with hands on using standard tools and industry mentored projects.

Dr.Nalini C Iyer

Chairperson, BoS, SoECE

Head of School
Electronics & Communication Engg
KLE Technological University

School of Electronics & Communication Engineering

KLE Tech University

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Action taken for AUTOSAR:

Minutes of BoS (Approval):

In the BOS meeting it was resolved to revise the course from AUTOSAR and Infotainment to AUTOSAR only with contents change focusing one one domain.

Enclosure: Minutes of BOS meeting.

Head of School
Electronics & Communication Engg
KLE Technological University

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Minutes

6th Board of Studies Meeting

of

School of Electronics and Communication Engineering

Hubballi, Karnataka

30th May 2020

KLE Technological University

(Established under Karnataka Act No.22, 2013)

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School of Electronics & Communication Engineering
KLE Tech University
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The following are the minutes of the Board of Studies meeting of SoECE, KLE Technological University, Hubballi which was held on 30th May 2020 at 10:30 am in MS Teams.

The following members were present.

Sl No	Name	Designation	Position
1.	Dr. Nalini C.Iyer	Head of School, SoECE	Chairperson
2.	Dr. R M Bankar	Professor, SoECE	Member
3.	Dr. Uma Mudengudi	Professor, SoECE	Member
4.	Dr. Priyatamkumar	Professor, SoECE	Member
5.	Dr. Saroja S	Professor, SoECE	Member
6.	Dr. Ujwala Patil	Associate Professor, SoECE	Member
7.	Dr. D. Manjunath	Professor, Department of EC,IIT Bombay	Member
8.	Dr.Mahadevprasanna	Professor, Department of EC,IIT Dharwad	Member
9.	Dr. Chetan Parekh	Professor, Department of EC,IIIT Bangalore	Member
10.	Mr. Praveen B P	Samsung India, Bangalore	Member
11.	Mr. Gurumurthy A	RBEI, Bangalore	Member
12.	Mr. Sumit Bhat	Design Lead, Sankalp Semiconductor	Member
13.	Dr. Sujata S Kotabagi	Professor, SoECE	Member
14.	Dr. R B Shettar	Professor, SoECE	Member
15.	Prof. Suneeta V B	Professor, SoECE	
16.	Prof. P. C. Nissimgoudar	Associate Professor, SoECE	
17.	Prof. R. M. Shet	Assistant Professor, SoECE	
18.	1. UG: Deepti H 2. UG: Aditya O 3. PG1 :Mandakini 4. PG2: Gangotri 5. PhD: Suhas Shirol		Student Members

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Agenda

Sl No	Particulars	Page No.
6.1	To welcome the BoS Members and present department achievements & initiatives	
6.2	To read and confirm the minutes of 5th BoS meeting held on 13th April 2019	
6.3	To confirm the action taken report on the minutes of the previous meeting held on 13th April 2019	
6.4	To consider the Schemes and Syllabi of the undergraduate program B.E in Electronics & Communication and approve the same. a) Scheme approval of I to VIII Semester (2020-24) b) Syllabus approval of I / II Semester, Basic Electronics for Mechanical and Electrical stream course (2020-24) c) Scheme approval of III to VIII Semester (2019-23) d) Syllabus approval of III to VIII Semester (2019-23) e) Scheme approval of V to VIII Semester (2018-22) f) Syllabus approval of V to VIII Semester (2018-22) g) Scheme approval of VII and VIII Semester (2017-21) h) Syllabus approval of V and VIII Semester (2017-21) i) Scheme approval: Scheme 2019-23 in Minor Program j) Scheme approval: Scheme 2018-22 in Minor Program k) Syllabus approval: Scheme 2018-22 in Minor Program	
6.5	To consider the Schemes and Syllabi of the postgraduate program M.Tech in Digital Electronics and approve the same. a) Scheme approval of I to IV Semester (2020-22) b) Syllabus approval of I/II Semester (2020-22) c) Modification of Scheme of III/IV Semester (2019-21) d) Syllabus approval of III/IV Semester (2019-21)	
6.6	To consider the Schemes and Syllabi of the postgraduate program M.Tech in VLSI Design & Embedded Systems and approve the same. a) Scheme approval of I to IV Semester (2020-22) b) Syllabus approval of I/II Semester (2020-22) c) Modification of Scheme of III/IV Semester (2019-21) d) Syllabus approval of III/IV Semester (2019-21)	
6.7	Question Paper review and Discussion on attainment of POs and PSOs	
6.8	Vision, Mission, POs, PSOs of School of ECE and CAM and PAM	
6.9	Any other matter for discussion with the permission of the chair	

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HUBBALLI-580 031

School of Electronics & Communication Engineering
KLE Tech University
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BoS 6.1	To welcome the BoS Members and present department achievements & initiatives

Resolution 5.1: The BoS members appreciated the initiatives of SoECE and lauded its achievements.

BoS 6.2	To read and confirm the minutes of 5th BoS meeting held on 13th April 2019

The following are the minutes of the Board of Studies meeting of SoECE, KLE Technological University, Hubballi, which was held on 13th April 2019 at 10:30 am at the Senate Hall of the University.

The following members were present.

BoS 5.2	To read and confirm the minutes of 5th BoS meeting held on 13th April 2019

The following are the minutes of the Board of Studies meeting of SoECE, KLE Technological University, Hubballi, which was held on 13th April 2019 at 10:30 am at the Senate Hall of the University.

The following members were present.

Sl No	Name	Designation	Position
1.	Dr. Nalini C.Iyer	Head of School, SoECE	Chairperson
2.	Dr. R M Bankar	Professor, SoECE	Member
3.	Dr. Uma Mudengudi	Professor, SoECE	Member
4.	Dr. Priyatamkumar	Professor, SoECE	Member
5.	Dr. Saroja S	Professor, SoECE	Member
6.	Prof. Ujwala Patil	Associate Professor, SoECE	Member
7.	Dr. D. Manjunath	Professor, Department of EC,IIT Bombay	Member
8.	Dr. Chetan Parekh	Professor, Department of EC,IIIT Bangalore	Member
9.	Mr. Praveen B P	Samsung India, Bangalore	Member
10.	Mrs. Padmini Navalgund	RBEI, Bangalore	Member
11.	Mr. Sumit Bhat	Design Lead, Sankalp Semiconductor	Member
12.	Mr. Shivakumar Turmari	Tessolve Semiconductors, Bangalore	Member
13.	Dr. Sujata S Kotabagi	Professor, SoECE	Member
14.	Dr. R B Shettar	Professor, SoECE	Member
15.	Prof. Suneeta V B	Professor, SoECE	
16.	Prof. P. C. Nissimgoudar	Associate Professor, SoECE	
17.	Prof. R. M. Shet	Assistant Professor, SoECE	
18.	UG: Pranav K UG: Niveditha J PG1 :Vijaylakshmi PG2: Saiarpita PhD: Suhas Shirol		Student Members

Item No	Description
BoS 5.1	To welcome the BoS Members and present department achievements & initiatives and discussed about the inputs from all stake holders **(Annexure 6.1)** **Resolution 5.1:** The BoS members appreciated the work done towards recognition of KLE Technological University as a State private University effective from 2015.
BoS 5.2	To read and confirm the minutes of 5th BoS meeting held on 13th April 2019 **Resolution 5.2: Minutes of the last meeting were read and confirmed by BoS.**
BoS 5.3	To confirm the action taken report on the minutes of the previous meeting held on 13th April 2019

REGISTRAR
KLE Technological University
HUBBALLI-580 031

	Resolution 5.3: BoS confirmed the action taken report on the minutes of the previous meeting held on 13th April 2019 and suggestions were implemented.
BoS 5.4	To consider the Schemes and Syllabi of the undergraduate program B.E in Electronics & Communication and approve the same. 1. Scheme of I to VIII Semester (2019-23) Batch 2. Syllabus approval of I / II Semester, Basic Electronics for Mechanical and Electrical stream course (2019-23) Batch 3. Scheme of III to VIII Semester (2018-22) Batch 4. Syllabus of III to VIII Semester (2018-22) Batch 5. Scheme of V to VIII Semester (2017-21) Batch 6. Syllabus of V to VIII Semester (2017-21) Batch 7. Scheme of VII and VIII Semester (2016-20) Batch 8. Syllabus of VIII Semester (2016-20) Batch 9. Scheme for Minor program in electronics for (2018-22) Batch 10. Scheme for Minor program in electronics for (2017-21) Batch 11. Scheme for Minor program in electronics for (2017-21) Batch **Discussion**: Based on the discussions following action items as agreed upon by everyone were finalized and the same were circulated to all the members on 13th April 2019. Persons responsible for these action items have already initiated the actions, which will be shared in the next BoS meeting. The details of discussion are in ***Annexure 6.4*** ***Action Item No.1: Suggested new elective courses:*** *with Industry Collaboration for design and delivery* 1. CMOS ASIC design 2. Physical design analog 3. Introduction to deep learning ***Action Item No.2: Integrated approach with hands on:*** *Revised courses* 1. CMOS VLSI Circuits, 2. Internet of Things, 3. Information Theory and coding 4. Signals and System **Resolution 5.4: Resolved to approve the Schemes and Syllabi of the undergraduate program B.E in Electronics & Communication subject to implementation of action points listed above:** **1. Scheme of I to VIII Semester (2019-23) Batch** **2. Syllabus of I / II Semester, Basic Electronics course for Mechanical and Electrical streams for (2019-23) Batch** **3. Scheme of III to VIII Semester (2018-22) Batch** **4. Syllabus of III to VIII Semester (2018-22) Batch** **5. Scheme of V to VIII Semester (2017-21) Batch** **6. Syllabus of V to VIII Semester (2017-21) Batch** **7. Scheme of VII and VIII Semester (2016-20) Batch** **8. Syllabus of V and VIII Semester (2016-20) Batch** **9. Scheme for Minor program in electronics for (2018-22) Batch** **10. Scheme for Minor program in electronics for (2017-21) Batch** **11. Modification of Scheme of VII and VIII Semester (2015-19)** **12. Syllabus approval of VII and VIII Semester (2015-19)** **13. Scheme for Minor program in electronics for (2017-21) Batch** **14. Scheme for Minor program in electronics for (2016-20) Batch** **15. Syllabus for Minor program in electronics for (2016-20) Batch**

REGISTRAR
KLE Technological University
HUBBALLI-580 031

BoS 5.5	To consider the Schemes and Syllabi of the postgraduate program M. Tech in Digital Electronics and approve the same. a) Scheme of I to IV Semester (2019-21) Batch b) Syllabus of I/II Semester (2019-21) Batch c) Modification of Scheme of III/IV Semester (2018-20) d) Syllabus of III/IV Semester (2018-20) Batch **Discussion:** Based on the discussions following action items as agreed upon by everyone were finalized and the same were circulated to all the members on 13th April 2019. Persons responsible for these action items have already initiated the actions, which will be shared in the next BoS meeting. ***Action Item No.1: Suggested new core courses*** *to strengthen basic concepts and programming* 1. Automotive electronics and Communication **Resolution 5.5: Resolved to approve the following Schemes and Syllabi of the postgraduate program M. Tech in Digital Electronics subjected to implementation of action points listed above.** **a) Scheme of I to IV Semester (2019-21) Batch** **b) Syllabus of I/II Semester (2019-21) Batch** **c) Modification of Scheme of III/IV Semester (2018-20) Batch** **d) Syllabus of III/IV Semester (2018-20) Batch**
BoS 5.6	To consider the Schemes and Syllabi of the postgraduate program M. Tech in VLSI Design and Embedded Systems and approve the same. a) Scheme of I to IV Semester (2019-21) Batch b) Syllabus of I/II Semester (2019-21) Batch c) Modification of Scheme of III/IV Semester (2018-20) d) Syllabus of III/IV Semester (2018-20) Batch **Discussion:** Based on the discussions following action items as agreed upon by everyone were finalized and the same were circulated to all the members on 13th April 2019. Persons responsible for these action items have already initiated the actions, which will be shared in the next BoS meeting. ***Action Item No.1: Suggested new core courses*** *to strengthen basic concepts and programming* 1. Automotive electronics and Communication 2. AUTOSAR and Infotainment **Resolution 5.6: Resolved to the Schemes and Syllabi of the postgraduate program M. Tech in in VLSI Design and Embedded Systems subjected to implementation of action points listed above.** **a) Scheme of I to IV Semester (2019-21) Batch** **b) Syllabus of I/II Semester (2019-21) Batch** **c) Modification of Scheme of III/IV Semester (2018-20) Batch** **d) Syllabus of III/IV Semester (2018-20) Batch**
BoS 5.7	Question Paper review **Discussion:** The Question Paper along with assessment patterns with respect to Bloom's Levels and PO-PSO-PI mapping was presented.
BoS 5.8	Vision, Mission, POs, PSOs of School of ECE and CAM , PAM of 2015-19 **Discussion:** The Vision, Mission, POs, PSOs and CAM, PAM of 2015-19 of School of ECE were presented.
BoS 5.9	Any other subject with the permission of the Chair

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KLE Technological University
HUBBALLI-580 031

	Nil.

Resolution 6.2: Resolved to confirm the minutes of its 5th BoS meeting held on 13th April 2019

BoS 6.3 To confirm the action taken report on the minutes of the previous meeting held on **on 13th April 2019**
Resolution: 5.3 Resolved to confirm the action taken report on the minutes of its 5th BoS meeting held on 13th April 2019. The BoS members appreciated the new initiatives taken by SoECE.

Item No	Description	Action Taken
BoS 5.1	To welcome the BoS Members and present department achievements & initiatives and discussed about the inputs from all stake holders **(Annexure 6.1)** **Resolution 5.1:** The BoS members appreciated the work done towards recognition of KLE Technological University as a State private University effective from 2015.	Noted
BoS 5.2	To read and confirm the minutes of 5th BoS meeting held on 13th April 2019 **Resolution 5.2: Minutes of the last meeting were read and confirmed by BoS.**	Noted
BoS 5.3	To confirm the action taken report on the minutes of the previous meeting held on 13th April 2019 **Resolution 5.3: BoS confirmed the action taken report on the minutes of the previous meeting held on 13th April 2019 and suggestions were implemented.**	Noted
BoS 5.4	To consider the Schemes and Syllabi of the undergraduate program B.E in Electronics & Communication and approve the same. 1. Scheme of I to VIII Semester (2019-23) Batch 2. Syllabus approval of I / II Semester, Basic Electronics for Mechanical and Electrical stream course (2019-23) Batch 3. Scheme of III to VIII Semester (2018-22) Batch 4. Syllabus of III to VIII Semester (2018-22) Batch 5. Scheme of V to VIII Semester (2017-21) Batch 6. Syllabus of V to VIII Semester (2017-21) Batch 7. Scheme of VII and VIII Semester (2016-20) Batch 8. Syllabus of VIII Semester (2016-20) Batch 9. Scheme for Minor program in electronics for (2018-22) Batch 10. Scheme for Minor program in electronics for (2017-21) Batch 11. Scheme for Minor program in electronics for (2017-21) Batch **Discussion**: Based on the discussions following action items as agreed upon by everyone were finalized and the same were circulated to all the members on 13th April 2019. Persons responsible for these action items have already initiated the actions, which will be shared in the next BoS meeting. The details of discussion are in ***Annexure 6.4***	The BoS members noted the progress of the School and recommended action items and timeline. ***Action Item No.1: Suggested new elective courses:*** *with Industry Collaboration for design and delivery* ***ATR:*** *Elective courses (3) are introduced in in verticals (identified by SoECE) VLSI, Embedded and Communication Systems in collaboration with Industry in respective domain.* *Specialized Courses in VLSI domain, one of the vertical of SoECE, introduced are* ***CMOS ASIC Design*** *and* ***Physical design analog*** *in collaboration with Sifive Bangalore and, Sankalp semiconductors Pvt. Ltd, Hubli respectively with focus on project based learning.* To gain complete chip design flow knowledge of *CMOS ASIC design* course with hands-on intensive covers

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		Action Item No.1: Suggested new elective courses: *with Industry Collaboration for design and delivery* 1. CMOS ASIC design 2. Physical design analog 3. Introduction to deep learning ***Action Item No.2: Integrated approach with hands on:*** *Revised courses* 1. CMOS VLSI Circuits, 2. Internet of Things, 3. Information Theory and coding 4. Signals and System **Resolution 5.4: Resolved to approve the Schemes and Syllabi of the undergraduate program B.E in Electronics & Communication subject to implementation of action points listed above:** **1. Scheme of I to VIII Semester (2019-23) Batch** **2. Syllabus of I / II Semester, Basic Electronics course for Mechanical and Electrical streams for (2019-23) Batch** **3. Scheme of III to VIII Semester (2018-22) Batch** **4. Syllabus of III to VIII Semester (2018-22) Batch** **5. Scheme of V to VIII Semester (2017-21) Batch** **6. Syllabus of V to VIII Semester (2017-21) Batch** **7. Scheme of VII and VIII Semester (2016-20) Batch** **8. Syllabus of V and VIII Semester (2016-20) Batch** **9. Scheme for Minor program in electronics for (2018-22) Batch** **10. Scheme for Minor program in electronics for (2017-21) Batch** **11. Modification of Scheme of VII and VIII Semester (2015-19)** **12. Syllabus approval of VII and VIII Semester (2015-19)** **13. Scheme for Minor program in electronics for (2017-21) Batch** **14. Scheme for Minor program in electronics for (2016-20) Batch** **15. Syllabus for Minor program in electronics for (2016-20) Batch**	and explore complete digital design flow of programmable ASIC through VLSI EDA tools. A course in the domain of analog VLSI to enhance teaching learning in Analog circuit design and layout, in turn build upon competency through mini minor and capstone projects. *Course on **Deep learning** is introduced in interaction with SRIB, Bangalore. with Project-based learning which involves dynamic classroom approach in which students acquire a deeper knowledge through active investigation of real-world challenges and problems. Changes are made according to the suggestions and will be presented during the next BoS.* ***Action Item No.2: Integrated approach with hands on:*** *Revised courses* ***ATR:*** *Integrated theory and lab approach is adapted to bridge the gap between understanding theoretical and realization the same with programming using EDA Tools and in the course **CMOS VLSI circuits** with separate credit structure* *Course on **Internet of Things (IoT)** is introduced in interaction with Bosch, Bangalore. Focusing on hands on* with separate credits for course project. *An elective course on **Information Theory and coding** also focuses on hands on with various coding techniques for performance analysis of communication channel, modelling and simulation using MATLAB/Simulink followed by a course project with separate credits for course project.* *Context based learning for the most fundamental course in communication domain **Signals and Systems** is introduced through Co-teaching with hands on for mapping Mathematical concepts with physical interpretation of signal processing towards better*

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			learning .
	BoS 5.5	To consider the Schemes and Syllabi of the postgraduate program M. Tech in Digital Electronics and approve the same. a) Scheme of I to IV Semester (2019-21) Batch b) Syllabus of I/II Semester (2019-21) Batch c) Modification of Scheme of III/IV Semester (2018-20) d) Syllabus of III/IV Semester (2018-20) Batch **Discussion:** Based on the discussions following action items as agreed upon by everyone were finalized and the same were circulated to all the members on 13th April 2019. Persons responsible for these action items have already initiated the actions, which will be shared in the next BoS meeting. ***Action Item No.1: Suggested new core courses** to strengthen basic concepts and programming* 1. Automotive electronics and Communication **Resolution 5.5: Resolved to approve the following Schemes and Syllabi of the postgraduate program M. Tech in Digital Electronics subjected to implementation of action points listed above.** **a) Scheme of I to IV Semester (2019-21) Batch** **b) Syllabus of I/II Semester (2019-21) Batch** **c) Modification of Scheme of III/IV Semester (2018-20) Batch** **d) Syllabus of III/IV Semester (2018-20) Batch**	**The BoS members noted the progress of the School and recommended action items and timeline.** ***Action Item No.1: Suggested new core courses** to strengthen basic concepts and programming* ***ATR:*** *A course on **Automotive electronics and Communication** is introduced with the focus on industry specific model based design approach and necessary communication protocols for inter and intra vehicular communication in collaboration with Bosch Bangalore.*
	BoS 5.6	To consider the Schemes and Syllabi of the postgraduate program M. Tech in VLSI Design and Embedded Systems and approve the same. a) Scheme of I to IV Semester (2019-21) Batch b) Syllabus of I/II Semester (2019-21) Batch c) Modification of Scheme of III/IV Semester (2018-20) d) Syllabus of III/IV Semester (2018-20) Batch **Discussion:** Based on the discussions following action items as agreed upon by everyone were finalized and the same were circulated to all the members on 13th April 2019. Persons responsible for these action items have already initiated the actions, which will be shared in the next BoS meeting. ***Action Item No.1: Suggested new core courses** to strengthen basic concepts and programming* 1. Automotive electronics and Communication 2. AUTOSAR and Infotainment **Resolution 5.6: Resolved to the Schemes and Syllabi of the postgraduate program M. Tech in in VLSI Design and Embedded Systems subjected to**	**The BoS members noted the progress of the School and recommended action items and timeline.** ***Action Item No.1: Suggested new core courses** to strengthen basic concepts and programming* ***ATR:*** *A course on **Automotive electronics and Communication** is introduced with the focus on industry specific model based design approach and necessary communication protocols for inter and intra vehicular communication in collaboration with Bosch Bangalore.* *A standardized interface for software components in the application layer for building applications including infotainment to support the vehicle functions is introduced in **AUTOSAR and Infotainment** in collaboration with Bosch, Bangalore.*

REGISTRAR
KLE Technological University
HUBBALLI-580 031

		implementation of action points listed above. **a) Scheme of I to IV Semester (2019-21) Batch** **b) Syllabus of I/II Semester (2019-21) Batch** **c) Modification of Scheme of III/IV Semester (2018-20) Batch** **d) Syllabus of III/IV Semester (2018-20) Batch**	
	BoS 5.7	Question Paper review **Discussion:** The Question Paper along with assessment patterns with respect to Bloom's Levels and PO-PSO-PI mapping was presented.	QP Pattern is incorporated in all the courses.
	BoS 5.8	Vision, Mission, POs, PSOs of School of ECE and CAM , PAM of 2015-19 **Discussion:** The Vision, Mission, POs, PSOs and CAM, PAM of 2015-19 of School of ECE were presented.	SoECE staff aligned to Vision, Mission, POs and PSOs .
	BoS 5.9	Any other subject with the permission of the Chair Nil.	
	Resolution: 6.3 Resolved to confirm the action taken report on the minutes of its 5th BoS meeting held on 13th April 2019. The BoS members appreciated the new initiatives taken by SoECE		
BoS 6.4	To consider the Schemes and Syllabi of the undergraduate program B.E in Electronics & Communication and approve the same. a) Scheme approval of I to VIII Semester (2020-24) b) Syllabus approval of I / II Semester, Basic Electronics for Mechanical and Electrical stream course (2020-24) c) Scheme approval of III to VIII Semester (2019-23) d) Syllabus approval of III to VIII Semester (2019-23) e) Scheme approval of V to VIII Semester (2018-22) f) Syllabus approval of V to VIII Semester (2018-22) g) Scheme approval of VII and VIII Semester (2017-21) h) Syllabus approval of V and VIII Semester (2017-21) i) Scheme approval: Scheme 2019-23 in Minor Program j) Scheme approval: Scheme 2018-22 in Minor Program k) Syllabus approval: Scheme 2018-22 in Minor Program l) Scheme approval :2020-24 in Bachelor of Electronics Engineering (Industrial Integrated) m) Syllabus approval of I / II /III trimester (2020-24) in Bachelor of Electronics Engineering (Industrial Integrated) **Discussion**: Based on the discussions following action items as agreed upon by everyone were finalized and the same were circulated to all the members on 30th May 2020. Persons responsible for these action items have already initiated the actions, which will be shared in the next BoS meeting. ***Action Item No.1:*** New courses added: Senior Design Project ***Action Item No.2:***Revised courses : Project Work , AUTOSAR **Resolution 6.4: Resolved to approve the Schemes and Syllabi of the undergraduate program B.E in Electronics & Communication:** **a) Scheme approval of I to VIII Semester (2020-24)** **b) Syllabus approval of I / II Semester, Basic Electronics for Mechanical and Electrical stream course (2020-24)** **c) Scheme approval of III to VIII Semester (2019-23)** **d) Syllabus approval of III to VIII Semester (2019-23)** **e) Scheme approval of V to VIII Semester (2018-22)**	

REGISTRAR
KLE Technological University
HUBBALLI-580 031

	f) Syllabus approval of V to VIII Semester (2018-22) **g) Scheme approval of VII and VIII Semester (2017-21)** **h) Syllabus approval of V and VIII Semester (2017-21)** **i) Scheme approval: Scheme 2019-23 in Minor Program** **j) Scheme approval: Scheme 2018-22 in Minor Program** **k) Syllabus approval of 2018-22 in Minor Program** **l) Scheme approval :2020-24 in Bachelor of Electronics Engineering (Industrial Integrated)** **m) Syllabus approval of I / II /III trimester (2020-24) in Bachelor of Electronics Engineering (Industrial Integrated)**
BoS 6.5	To consider the Schemes and Syllabi of the postgraduate program M.Tech in Digital Electronics and approve the same. a) Scheme approval of I to IV Semester (2020-22) b) Syllabus approval of I/II Semester (2020-22) *c)* Modification of Scheme of III/IV Semester (2019-21) *d)* Syllabus approval of III/IV Semester (2019-21) **Discussion:** Based on the discussions following action items as agreed upon by everyone were finalized and the same were circulated to all the members on 30th May 2020. Persons responsible for these action items have already initiated the actions, which will be shared in the next BoS meeting. **Resolution 6.5: Resolved to the Schemes and Syllabi of the postgraduate program M.Tech in Digital Electronics:** **a) Scheme approval of I to IV Semester (2020-22)** **b) Syllabus approval of I/II Semester (2020-22)** ***c)* Modification of Scheme of III/IV Semester (2019-21)** ***d)* Syllabus approval of III/IV Semester (2019-21)**
BoS 6.6	To consider the Schemes and Syllabi of the postgraduate program M.Tech in VLSI Design and Embedded Systems and approve the same. a) Scheme approval of I to IV Semester (2020-22) b) Syllabus approval of I/II Semester (2020-22) *c)* Modification of Scheme of III/IV Semester (2019-21) *d)* Syllabus approval of III/IV Semester (2019-21) **Resolution 6.6: Resolved to the Schemes and Syllabi of the postgraduate program M.Tech in in VLSI Design and Embedded Systems** **a) Scheme approval of I to IV Semester (2020-22)** **b) Syllabus approval of I/II Semester (2020-22)** ***c)* Modification of Scheme of III/IV Semester (2019-21)** ***d)* Syllabus approval of III/IV Semester (2019-21)**
BoS 6.7	Question Paper review **Discussion:** The Question Paper along with assessment patterns with respect to Bloom's Levels and PO-PSO-PI mapping were presented.
BoS 6.8	Vision, Mission, POs , PSOs, CAM and PAM of School of ECE **Discussion:** The Vision, Mission, POs and PSOs of School of ECE were presented.
BoS 6.9	Any other subject with the permission of the Chair Nil.

The Chairperson thanked all the members for the valuable contributions

Chairperson, BoS, SoECE
Dr. Nalini C Iyer

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HUBBALLI-580 031

Annexure 6.1

Discussion Item
Employers Feedback: • Students should be able to develop engineering solutions in societal and environmental contexts. • Ability for effective communication, problem solving, conflict resolution and leadership skills. • Enhance ability to apply design principles in the development of hardware and software systems of varying complexity, using state of art tools for the development of VLSI/Embedded/Communication systems. **Teachers Feedback (Pre-BoS MoM):** • Formulation of application oriented examples. • Focus on problem solving using programming skills and use of online platform. **Students Feedback:** • To focus on latest technological trends and development. • Formulation of application oriented examples. **Alumni Feedback:** Recommended for co-delivery by industry experts.

Annexure 6.4

Discussion Item	Course
BE (ECE)	
1. Theme based project with strong emphasis on design aspects in the domain of VLSI, Communication and Embedded with hardware and software integration for the desired functionality is introduced.	Senior Design Project-20EECW401 Added-New course
2. Industry/Research/Academic project with more emphasis on design aspects and real time constraints in the domain of VLSI, Communication and Embedded with hardware and software integration for the desired functionality is introduced.	Project Work-20EECW402 Revised- Delivery
3. A standardized interface for software components in the application layer and application software components for building applications to support the vehicle functions is introduced. Course prepares students to be industry ready with hands on using standard tools and industry mentored projects.	Autosar-20EECE406 Revised- Delivery
M.Tech Digital Electronics	
NIL	NIL
M.Tech VLSI Design and Embedded Systems	
NIL	NIL

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KLE Technological University
HUBBALLI-580 031

KLE Technological University

Creating Value
Leveraging Knowledge

Action Taken Report

6th Board of Studies Meeting

of

School of Electronics and Communication Engineering

Hubballi, Karnataka

30th May 2020

KLE Technological University

(Established under Karnataka Act No.22, 2013)

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KLE Technological University
HUBBALLI-580 031

The following are the action items proposed during 6rdBoard of Studies meeting of SoECE, KLE Technological University, Hubballi which was held on 30thMay 2020. The corresponding actions taken are also listed below.

Item No	Description	Action Taken
BoS 6.1	To welcome the BoS Members and present department achievements & initiatives and discussed about the inputs from all stake holders **(Annexure 6.1)** **Resolution 5.1:** The BoS members appreciated the work done towards recognition of KLE Technological University as a State private University effective from 2015.	Noted
BoS 6.2	To read and confirm the minutes of 5th BoS meeting held on 13th April 2019 **Resolution 5.2: Minutes of the last meeting were read and confirmed by BoS.**	Noted
BoS 6.3	To confirm the action taken report on the minutes of the previous meeting held on 13th April 2019 **Resolution 5.3: BoS confirmed the action taken report on the minutes of the previous meeting held on 13th April 2019 and suggestions were implemented.**	Noted
BoS 6.4	To consider the Schemes and Syllabi of the undergraduate program B.E in Electronics & Communication and approve the same. a) Scheme of I to VIII Semester (2020-24) batch. b) Syllabus of I / II Semester, Basic Electronics course for Mechanical and Electrical streams for (2020-24) batch. c) Scheme of III to VIII Semester (2019-23) batch. d) Syllabus of III to VIII Semester (2019-23) batch. e) Scheme of V to VIII Semester (2018-22) batch. f) Syllabus of V to VIII Semester (2018-22) batch. g) Scheme of VII and VIII Semester (2017-21) batch. h) Syllabus of V and VIII Semester (2017-21) batch. i) Scheme 2019-23 in Minor Program j) Scheme 2018-22 in Minor Program k) Scheme 2018-22 in Minor Program l) Scheme approval :2020-24 in Bachelor of Electronics Engineering (Industrial Integrated) m) Syllabus of I / II /III trimester (2020-24)in Bachelor of Electronics Engineering (Industrial Integrated) batch. **Discussion**: Based on the discussions following action, items as agreed upon by everyone were finalized and the same were circulated to all the members on 30th May 2020. Persons responsible for these action items have already initiated the actions, which will be shared in the next BoS meeting. The details of discussion are in ***Annexure 6.4.*** ***Action Item No.1: Suggested new core course*** *with strong focus on design aspects.* 1) Senior Design Project ***Action Item No.2: Suggested course*** *with Project based learning emphasis* 1) Project Work 2) AUTOSAR **Resolution 6.4: Resolved to approve the Schemes and Syllabi of the undergraduate program B.E in Electronics & Communication subject to implementation of action points listed above:** **a) Scheme of I to VIII Semester (2020-24) batch.**	**The BoS members noted the progress of the School and recommended action items and timeline.** ***Action Item No.1: Suggested new core course*** *focusing on project based learning* **ATR:** Theme based Research/Academic **senior design project** with strong emphasis on design aspects in the domain of VLSI, Communication and Embedded with hardware and software integration for the desired functionality is introduced. ***Action Item No.2: Suggested course*** *with Project based learning emphasis* ***ATR:*** • Industry/Research/Academic **project** with more emphasis on design aspects and real time constraints in the domain of VLSI, Communication and Embedded with hardware and software integration for the desired functionality is introduced. • A standardized interface for software components in the application layer and application software components for building applications to support the vehicle functions is introduced. **Autosar** prepares students to be industry ready with hands on using standard tools and industry mentored projects.

REGISTRAR
KLE Technological University
HUBBALLI-580 031

	b) Syllabus of I / II Semester, Basic Electronics for Mechanical and Electrical stream course (2020-24) batch. **c) Scheme of III to VIII Semester (2019-23) batch.** **d) Syllabus of III to VIII Semester (2019-23) batch.** **e) Scheme of V to VIII Semester (2018-22) batch.** **f) Syllabus of V to VIII Semester (2018-22) batch.** **g) Scheme of VII and VIII Semester (2017-21) batch.** **h) Syllabus of V and VIII Semester (2017-21) batch.** **i) Scheme 2019-23 in Minor Program** **j) Scheme 2018-22 in Minor Program** **k) Scheme 2018-22 in Minor Program** **l) Scheme approval :2020-24 in Bachelor of Electronics Engineering (Industrial Integrated)** **m) Syllabus of I / II /III trimester (2020-24)in Bachelor of Electronics Engineering (Industrial Integrated) batch.**	
BoS 6.5	To consider the Schemes and Syllabi of the postgraduate program M.Tech in Digital Electronics and approve the same. a) Scheme of I to IV Semester (2020-22) batch. b) Syllabus of I/II Semester (2020-22) batch. *c)* Modification of Scheme of III/IV Semester (2019-21) batch *d)* Syllabus of III/IV Semester (2019-21) batch. **Discussion:** Based on the discussions following action items as agreed upon by everyone were finalized and the same were circulated to all the members on 30th May 2020. Persons responsible for these action items have already initiated the actions, which will be shared in the next BoS meeting. **Resolution 6.5: Resolved to the Schemes and Syllabi of the postgraduate program M.Tech in Digital Electronics subject to implementation of action points listed above:** **a) Scheme of I to IV Semester (2020-22) batch.** **b) Syllabus of I/II Semester (2020-22) batch.** ***c)* Modification of Scheme of III/IV Semester (2019-21)** ***d)* Syllabus of III/IV Semester (2019-21) batch.**	**The BoS members noted the progress of the School and recommended action items and timeline.** ***ATR:*** *No major changes in scheme or content for 2020-21 and therefore to continue the same courses under the respective scheme*
BoS 6.6	To consider the Schemes and Syllabi of the postgraduate program M.Tech in VLSI Design and Embedded Systems and approve the same. a) Scheme of I to IV Semester (2020-22) batch. b) Syllabus of I/II Semester (2020-22) batch. *c)* Modification of Scheme of III/IV Semester (2019-21) batch. *d)* Syllabus of III/IV Semester (2019-21) batch. **Discussion:** Based on the discussions following action items as agreed upon by everyone were finalized and the same were circulated to all the members on 30th May 2020. Persons responsible for these action items have already initiated the actions, which will be shared in the next BoS meeting. **Resolution 6.6: Resolved to the Schemes and Syllabi of the postgraduate program M.Tech in in VLSI Design and Embedded**	**The BoS members noted the progress of the School and recommended action items and timeline.** ***ATR:*** *No major changes in scheme or content for 2020-21 and therefore to continue the same courses under the respective scheme*

	Systems subject to implementation of action points listed above: **a) Scheme of I to IV Semester (2020-22) batch.** **b) Syllabus of I/II Semester (2020-22) batch.** ***c)* Modification of Scheme of III/IV Semester (2019-21) batch.** ***d)* Syllabus of III/IV Semester (2019-21) batch.**	
BoS 6.7	Question Paper review **Discussion:** The Question Paper along with assessment patterns with respect to Bloom's Levels and PO-PSO-PI mapping was presented.	QP Pattern is incorporated in all the courses.
BoS 6.8	Vision, Mission, POs, PSOs of School of ECE and CAM , PAM of 2016-20 **Discussion:** The Vision, Mission, POs, PSOs and CAM, PAM of 2016-20of School of ECEwas presented.	SoECE staff aligned to Vision, Mission, POs and PSOs .
BoS 6.9	Any other subject with the permission of the Chair Nil.	

Dr.Nalini C Iyer
Chairperson, BoS, SoECE

REGISTRAR
KLE Technological University
HUBBALLI-580 031

FMTH0301/Rev.5.3

Course Plan

Semester: **7** Year: 2019-20

Course Title: **AUTOSAR**	Course Code: **20EECE406**
Total Contact hrs: 40	Duration of ESA:3
ISA Marks:50	ESA Marks:50

Course Content

Course Code: 20EECE406	Course Title: AUTOSAR	
L-T-P : 3-0-0-0	Credits: 3	Contact Hrs: 3 Hours
ISA Marks: 50	ESA Marks: 50	Total Marks: 100
Teaching Hrs: 40		Exam Duration: 3

Content	Hrs
Unit - 1	
Chapter No. 1: AUTOSAR Fundamentals Evolution of AUTOSAR – Motivations and Objectives AUTOSAR consortium – Stake holders – work Packages, AUTOSAR Partnership, Goals of the partnership, Organization of the partnership, AUTOSAR specification, AUTOSAR Current development status, BSW Conformance classes: ICC1, ICC2, ICC3, and Drawbacks of AUTOSAR.	8 hrs
Chapter No. 2: AUTOSAR layered Architecture AUTOSAR Basic software, Details on the various layers , Details on the stacks Virtual Function Bus (VFB) Concept Overview of AUTOSAR Methodology , Tools and Technologies for AUTOSAR AUTOSAR Application Software Component (SW-C) ,Types of SW-components AUTOSAR Run Time Environment (RTE): RTE Generation Process: Contract Phase, Generation Phase, MCAL, IO HW Abstraction Layer, Partial Networking, Multicore, J1939 Overview, AUTOSAR Ethernet, AUTOSAR E2E Overview , AUTOSAR XCP, Metamodel , From the model to the process , Software development process.	7 hrs
Unit - 2	
Chapter No. 3: Methodology of AUTOSAR and Communication in AUTOSAR CAN Communication, CAN FD, CANape, Application Layer and RTE, intra and inter ECU communication, Client-Server Communication, Sender-Receiver, Communication, CAN Driver, Communication Manager (ComM), Overview of Diagnostics Event and Communication Manager	10 hrs
Chapter No. 4: Overview about BSW constituents BSW Constituents: Memory layer, COM and Services layer, ECU abstraction, AUTOSAR, Operating system, Interfaces: Standard interface, AUTOSAR standardized interface, BSW-RTE interface,(AUTOSAR interface), BSW-ECU hardware interface, Complex device drivers and BSW module configuration, AUTOSAR Integration.	5 hrs

Head of School
Electronics & Communication Engg
KLE Technological University

Unit - 3	
Chapter 5: MCAL and ECU abstraction Layer Microcontroller Drivers, Memory drivers: on-chip and off chip drivers, IO drivers(ADC, PWM, DIO), Communication drivers: CAN driver, LIN drivers, Flexrfay	5 hrs
Chapter 6: Service Layer Diagnostic Event Manager, Function inhibits Manager, Diagnostic communication manager, Network management, Protocol data unit router, Diagnostic log and trace unit, COMM manager.	5 hrs

Head of School
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