## K.S.INSTITUTE OF TECHNOLOGY DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING (Approved by A.I.C.T.E affiliated to VTU Belgaum)

#14, Raghuvanahalli, kanakapura main road, Bangalore-560109

## Programme: U.G. (ECE)

New facilities created during the last three years for strengthening the curriculum and/or meeting the POs:

## ANNEXURE 6.2

| S<br>1<br>N<br>o | Na<br>me<br>of<br>the<br>Lab<br>orat<br>ory | Facili<br>ty<br>Name          | Details  | Reasoning(s)<br>for creating<br>facility  | Utili<br>zati<br>on                                 | Areas in<br>which<br>students<br>are<br>expected<br>to have<br>enhanced<br>learning | •                                 | by students using cilities |                        |                  |
|------------------|---|-------------------------------|--|---|---|---|-----------------------------------|----------------------------|------------------------|------------------|
| 1                | VLSI  | MATL<br>AB                    | Helps<br>researchers<br>and students to<br>develop<br>applications       | Provides<br>platform for<br>Researchers<br>and Students<br>to work on<br>Applications | Rese<br>arch<br>schol<br>ars,<br>UG<br>stud<br>ents | Helps<br>students to<br>ease the<br>application<br>developmen<br>t                  |                                   |                            |                        |                  |
|                  |   | Projec<br>tors<br>and<br>WiFi | EPSON<br>projectors and<br>Internet facitity<br>with speed of<br>50 Mbps | Teaching<br>Veracity  | Rese<br>arch<br>schol<br>ars,<br>UG<br>stud<br>ents | Better<br>presentatio<br>n and easy<br>Understand<br>ing.                           |                                   |                            |                        |                  |
|                  |   | Ardui<br>no                   | Arduino is an<br>open-source<br>electronics                              | Arduino<br>Education is<br>focused on   | Rese<br>arch<br>scho                                | Arduino<br>senses the<br>environmen   | Wireless notice<br>Bluetooth HC-0 | 0                          |                        |                  |
|                  |   |                               | platform based   | creating the<br>next generation   | lars,<br>UG   | t by  | 1KS20EC026                        | Eshwar Biradar             |                        |                  |
|                  |   |                               | on easy-to-use<br>hardware and   | of STEAM<br>programs —  | stud  | receiving<br>inputs from  | 1KS20EC048                        | Kiran Dev D                |                        |                  |
|                  |   |                               | software. It's   | integrating   | ents  | many  | 1KS20EC052                        | Kusuma VR                  |                        |                  |
|                  |   |                               | intended for<br>anyone making  | Science,<br>Technology,   |   | sensors,<br>and affects   | 1KS20EC055                        | Mahesh Biradar             |                        |                  |
|                  |   |                               | interactive<br>projects.   | Engineering,<br>Arts and Math<br>— while  | Engineering,<br>Arts and Math                       |   | its<br>ath surroundi              | its<br>surroundin          | IOT based auto<br>home | mation for smart |
|                  |   |                               |  | supporting the  |   | gs by<br>controlling  | 1KS20EC032                        | Harini k                   |                        |                  |
|                  |   |                               |  | needs of<br>teachers and  |   | lights,   | 1KS20EC034                        | Harshitha B L              |                        |                  |
|                  |   |                               |  | students<br>throughout the  |   | motors,<br>and other  | 1KS20EC035                        | Harshitha J                |                        |                  |
|                  |   |                               |  | educational<br>journey.   |   | actuators.  | 1KS20EC036                        | Harshitha N                |                        |                  |

|   |  | raspb<br>erry pi | Unlike<br>Arduino, Raspb<br>erry Pi has its<br>own operating<br>system and<br>thanks to that,<br>it can carry out<br>complex<br>operations like<br>robot control,<br>monitoring<br>weather and<br>many others.               | To learn<br>programming<br>skills, build<br>hardware<br>projects, do<br>home<br>automation,<br>implement<br>Kubernetes<br>clusters and<br>Edge<br>computing,<br>and even use<br>them in<br>industrial   | Rese<br>arch<br>scho<br>lars,<br>UG<br>stud<br>ents | Students<br>can control<br>electronic<br>component<br>s for<br>physical<br>computing<br>and explore<br>the Internet<br>of Things<br>(IoT).   | Home Automatic<br>person using vo<br>1KS20EC004<br>1KS20EC006<br>1KS20EC016<br>1KS20EC009<br>IOT based autor<br>home<br>1KS20EC032<br>1KS20EC034<br>1KS20EC035              |   |
|---|--|------------------|--|---|---|--|---|---|
| 2 | Adv<br>ance<br>d<br>Com<br>mun<br>icati<br>on<br>Lab | LabVi<br>ew      | Laboratory<br>Virtual<br>Instrument<br>Engineering<br>Workbench<br>(LabVIEW) is a<br>system-design<br>platform and<br>development<br>environment for<br>a visual<br>programming<br>language from<br>National<br>Instruments. | applications.<br>LabVIEW<br>offers a<br>graphical<br>programming<br>approach<br>that helps to<br>visualize<br>every aspect<br>of<br>application,<br>including<br>hardware<br>configuration<br>,<br>measurement<br>of data, and<br>debugging.  | Rese<br>arch<br>scho<br>lars,<br>UG<br>stud<br>ents | LabVIEW<br>simplifies<br>the design<br>of<br>distributed<br>test,<br>measureme<br>nt, and<br>control<br>systems.   | 1KS20EC036Secured Commu1KS20EC0391KS20EC0401KS20EC056Anti smuggling a<br>trees in forest1KS20EC0621KS20EC0621KS20EC0801KS20EC112  | Jamuna S G<br>Janhavi R<br>Manaswini K M  |
|   |  | Ardui<br>no      | Arduino is an<br>open-source<br>electronics<br>platform based<br>on easy-to-use<br>hardware and<br>software. It's<br>intended for<br>anyone making<br>interactive<br>projects.   | Arduino<br>Education is<br>focused on<br>creating the<br>next generation<br>of STEAM<br>programs —<br>integrating<br>Science,<br>Technology,<br>Engineering,<br>Arts and Math<br>— while<br>supporting the<br>needs of<br>teachers and<br>students<br>throughout the<br>educational<br>journey. | Rese<br>arch<br>scho<br>lars,<br>UG<br>stud<br>ents | Arduino<br>senses the<br>environmen<br>t by<br>receiving<br>inputs from<br>many<br>sensors,<br>and affects<br>its<br>surroundin<br>gs by<br>controlling<br>lights,<br>motors,<br>and other<br>actuators. | Wireless notice i<br>Bluetooth Ardui<br>1KS20EC024<br>1KS20EC028<br>1KS20EC033<br>1KS20EC041<br>Distance based<br>using Arduino U<br>1KS20EC037<br>1KS20EC038<br>1KS20EC045 | no<br>Dhruva Kumar S<br>Gagan HC<br>Harshith AR<br>Jayanth H<br>collision avoidance |

|   |            | Caden       | Cadence is a                             | To train                    | Rese         | Cadence                    | Density based or | n Traffic signal |
|---|------------|-------------|--|-----------------------------|--------------|----------------------------|------------------|------------------|
|   |            | ce          | leading EDA                              | students to                 | arch         | Software                   | system           |                  |
|   |            | Softwa      | and System<br>Design                     | design and<br>test          | scho<br>lars | products                   | 111000000000000  |                  |
|   |            | re          | Enablement                               | digital/analo               | lais         | primarily<br>target SoC    | 1KS20EC053       | M.Archana        |
|   |            |             | provider                                 | g circuits.                 |              | design                     | 1KS20EC014       | C.Sai srujitha   |
|   |            |             | delivering tools,<br>software, and       |                             |              | engineers,<br>and are      | 1KS20EC047       | Keerthana B.S    |
|   |            |             | IP which help                            |                             |              | used to                    |                  |                  |
|   |            |             | to build<br>products that<br>connect the |                             |              | move a<br>design into      |                  |                  |
|   |            |             | world.                                   |                             |              | packed<br>silicon,<br>with |                  |                  |
|   |            |             |  |                             |              | products<br>for custom     |                  |                  |
|   |            |             |  |                             |              | and analog                 |                  |                  |
|   |            |             |  |                             |              | design,<br>digital         |                  |                  |
|   |            |             |  |                             |              | design,                    |                  |                  |
|   |            |             |  |                             |              | mixedsigna<br>1 design,    |                  |                  |
|   |            |             |  |                             |              | verification,              |                  |                  |
|   |            |             |  |                             |              | and                        |                  |                  |
|   |            |             |  |                             |              | package/P<br>CB design,    |                  |                  |
|   |            |             |  |                             |              | as well as a               |                  |                  |
|   |            |             |  |                             |              | broad<br>selection of      |                  |                  |
|   |            |             |  |                             |              | IP, and also               |                  |                  |
|   |            |             |  |                             |              | hardware<br>for            |                  |                  |
|   |            |             |  |                             |              | emulation                  |                  |                  |
|   |            |             |  |                             |              | and FPGA<br>prototyping    |                  |                  |
|   |            |             |  |                             |              |                            |                  |                  |
| 3 | MP/<br>MC/ | LabVi<br>ew | Laboratory<br>Virtual                    | LabVIEW<br>offers a         | Rese<br>arch | LabVIEW<br>simplifies      | Secured Commu    | inication        |
|   | HDL        |             | Instrument                               | graphical                   | scho         | the design                 | 1KS20EC039       | Jamuna S G       |
|   |            |             | Engineering<br>Workbench                 | programming<br>approach     | lars,<br>UG  | of<br>distributed          | 1KS20EC040       | Janhavi R        |
|   |            |             | (LabVIEW) is a system-design             | that helps to<br>visualize  | stud<br>ents | test,<br>measureme         | 1KS20EC056       | Manaswini K M    |
|   |            |             | platform and<br>development              | every aspect<br>of          |              | nt, and<br>control         |                  |                  |
|   |            |             | environment for                          | application,                |              | systems.                   |                  |                  |
|   |            |             | a visual                                 | including<br>hardware       |              |                            |                  |                  |
|   |            |             | programming<br>language from             | nardware<br>configuration   |              |                            |                  |                  |
|   |            |             | National                                 | ,                           |              |                            |                  |                  |
|   |            |             | Instruments.                             | measurement<br>of data, and |              |                            |                  |                  |
|   |            |             |  | debugging.                  |              |                            |                  |                  |
|   |            |             |  |                             |              |                            |                  |                  |
|   |            |             |  |                             |              |                            |                  |                  |

| Proteu<br>s | Proteus is a<br>Virtual System<br>Modelling and<br>circuit<br>simulation<br>application. Th<br>e suite<br>combines<br>mixed mode<br>SPICE circuit<br>simulation,<br>animated<br>components<br>and<br>microprocessor<br>models to facilit<br>ate co-<br>simulation of<br>complete<br>microcontroller | Circuit<br>simulation<br>gives<br>students a<br>fast and fun<br>practical<br>learning tool.<br>A software<br>solution<br>allows<br>instructors to<br>prepare and<br>re-use virtual<br>labs.   | Rese<br>arch<br>scho<br>lars,<br>UG<br>stud<br>ents | Proteus is<br>used in<br>colleges<br>and<br>Universities<br>across the<br>world for<br>teaching<br>electronics,<br>embedded<br>design and<br>PCB layout  | Home Automati<br>person using vo<br>1KS20EC004<br>1KS20EC006<br>1KS20EC016<br>1KS20EC009 |   |
|-------------|---|---|---|--|--|---|
| Ardui<br>no | microcontroller<br>based designs.<br>Arduino is an<br>open-source<br>electronics<br>platform based<br>on easy-to-use<br>hardware and<br>software. It's<br>intended for<br>anyone making<br>interactive<br>projects.   | Arduino<br>Education is<br>focused on<br>creating the<br>next<br>generation of<br>STEAM<br>programs —<br>integrating<br>Science,<br>Technology,<br>Engineering,<br>Arts and<br>Math — while<br>supporting<br>the needs of<br>teachers and<br>students<br>throughout<br>the<br>educational | Rese<br>arch<br>scho<br>lars,<br>UG<br>stud<br>ents | Arduino<br>senses the<br>environmen<br>t by<br>receiving<br>inputs from<br>many<br>sensors,<br>and affects<br>its<br>surroundin<br>gs by<br>controlling<br>lights,<br>motors,<br>and other<br>actuators. | system using Au<br>1KS20EC021<br>1KS20EC027<br>1KS20EC031<br>Surveillance Ro             | Darshan Kumar<br>S<br>G Bhavana<br>Priyadarshini<br>Gomitha R C<br>bot using ESP32<br>Border security |
| LabVi<br>ew | Laboratory<br>Virtual<br>Instrument<br>Engineering<br>Workbench<br>(LabVIEW) is a<br>system-design<br>platform and<br>development<br>environment for<br>a visual<br>programming   | LabVIEW<br>offers a<br>graphical<br>programming<br>approach<br>that helps to<br>visualize<br>every aspect<br>of<br>application,<br>including<br>hardware  | Rese<br>arch<br>scho<br>lars,<br>UG<br>stud<br>ents | LabVIEW<br>simplifies<br>the design<br>of<br>distributed<br>test,<br>measureme<br>nt, and<br>control<br>systems.   |  |   |

|   |         |                              | language from<br>National<br>Instruments.   | configuration<br>,<br>measurement<br>of data, and<br>debugging.   |   |  |  |   |
|---|---------|------------------------------|---|---|---|--|--|---|
|   |         | Ardui<br>no                  | Arduino is an<br>open-source<br>electronics<br>platform based<br>on easy-to-use<br>hardware and<br>software. It's<br>intended for<br>anyone making<br>interactive<br>projects.  | Arduino<br>Education is<br>focused on<br>creating the<br>next<br>generation of<br>STEAM<br>programs —<br>integrating<br>Science,<br>Technology,<br>Engineering,<br>Arts and<br>Math — while<br>supporting<br>the needs of<br>teachers and<br>students<br>throughout<br>the<br>educational | Rese<br>arch<br>scho<br>lars,<br>UG<br>stud<br>ents | Arduino<br>senses the<br>environmen<br>t by<br>receiving<br>inputs from<br>many<br>sensors,<br>and affects<br>its<br>surroundin<br>gs by<br>controlling<br>lights,<br>motors,<br>and other<br>actuators. | 1KS20EC061<br>1KS20EC065<br>1KS20EC071<br>1KS20EC072                                 | car using Aurdino<br>Neha CR<br>Pavani T S<br>Priyanka M<br>Pushpa D T<br>watering system<br>sanjana t<br>gadikar<br>Sanjana g<br>Sumana N<br>Vaishnavi A |
| 4 | R&<br>D | Spectr<br>um<br>Analyz<br>er | 1Ghz Spectrum<br>Analyzer with<br>tracking<br>generator   | journey.<br>Facility for<br>Research<br>work<br>in RF<br>applications<br>and<br>Academic<br>Projects  | Rese<br>arch<br>scho<br>lars,<br>UG<br>stud<br>ents | Research<br>scholars,<br>UG and PG<br>students in<br>Communict<br>ion System   |  |   |
|   |         | Ardui<br>no                  | Research<br>scholars, UG<br>students<br>Education is<br>focused on<br>creating the<br>next generation<br>of STEAM<br>programs —<br>integrating<br>Science,<br>Technology,<br>Engineering,<br>Arts and Math<br>— while<br>supporting the<br>needs of<br>teachers and<br>students | Arduino<br>senses the<br>environment<br>by receiving<br>inputs from<br>many<br>sensors, and<br>affects its<br>surroundings<br>by controlling<br>lights,<br>motors, and<br>other<br>actuators.   | Ard<br>uino   | Arduino is<br>an open-<br>source<br>electronics<br>platform<br>based on<br>easy-to-use<br>hardware<br>and<br>software.<br>It's<br>intended<br>for anyone<br>making<br>interactive<br>projects.           | Line follower F<br>avoidance<br>1KS20EC084<br>1KS20EC087<br>1KS20EC109<br>1KS20EC114 | Sachin N M<br>Sandeep YH<br>Ujjwal naidu<br>Vinay SP  |

| Proteu<br>s    | throughout the<br>educational<br>journey.<br>Proteus is a<br>Virtual System<br>Modelling and<br>circuit<br>simulation<br>application. Th<br>e suite<br>combines                                 | Circuit<br>simulation<br>gives<br>students a<br>fast and fun<br>practical<br>learning tool.<br>A software   | Rese<br>arch<br>scho<br>lars,<br>UG<br>stud<br>ents | Proteus is<br>used in<br>colleges<br>and<br>Universities<br>across the<br>world for<br>teaching | Distance based o<br>using Arduino U<br>1KS20EC037<br>1KS20EC038<br>1KS20EC045<br>1KS20EC021 | Inchara P<br>Chaithanya J<br>Kavana G S<br>Darshan Kumar                           |
|----------------|---|---|---|---|---|--|
|                | mixed mode<br>SPICE circuit<br>simulation,<br>animated<br>components<br>and<br>microprocessor<br>models to facilit<br>ate co-<br>simulation of<br>complete<br>microcontroller<br>based designs. | solution<br>allows<br>instructors to<br>prepare and<br>re-use virtual<br>labs.  |   | electronics,<br>embedded<br>design and<br>PCB layout  |   | S  |
| MATL<br>AB 6.1 | Helps<br>researchers<br>and students to<br>develop<br>applications  | MATLAB<br>provides a<br>high-level<br>language and<br>development<br>tools that let<br>you quickly<br>develop and<br>analyze<br>algorithms<br>and<br>applications.<br>MATLAB<br>provides a<br>range of<br>numerical<br>computation<br>methods for<br>analyzing<br>data,<br>developing<br>algorithms,<br>and creating<br>models. | Rese<br>arch<br>scho<br>lars,<br>UG<br>stud<br>ents | Helps<br>students to<br>ease the<br>application<br>developmen<br>t                              | Color segregator<br>Robotic Arm<br>1KS20EC105<br>1KS20EC103<br>KS20EC106<br>1KS20EC073      | using 4axis<br>Tarun prasanna<br>Sumukha S<br>Tejas N reddy<br>Rahul krishnan<br>N |
| ew             | Laboratory<br>Virtual<br>Instrument<br>Engineering  | LabviEW<br>offers a<br>graphical<br>programming   | Rese<br>arch<br>scho<br>lars,                       | LabVIEW<br>simplifies<br>the design<br>of   |   |  |

|   | ~                                   |                               | Workbench<br>(LabVIEW) is a<br>system-design<br>platform and<br>development<br>environment for<br>a visual<br>programming<br>language from<br>National<br>Instruments.         | approach<br>that helps to<br>visualize<br>every aspect<br>of<br>application,<br>including<br>hardware<br>configuration<br>,<br>measurement<br>of data, and<br>debugging.  | UG<br>stud<br>ents                                  | distributed<br>test,<br>measureme<br>nt, and<br>control<br>systems.   |  |
|---|-------------------------------------|-------------------------------|--|---|---|---|--|
| 5 | Com<br>mon<br>to<br>all<br>Lab<br>s | Projec<br>tors<br>and<br>WiFi | EPSON<br>projectors and<br>Internet facitity<br>with speed of<br>50 Mbps   | Teaching<br>Veracity  | Rese<br>arch<br>scho<br>lars,<br>UG<br>stud<br>ents | Better<br>presentatio<br>n and easy<br>Understand<br>ing  |  |
|   |                                     | Depar<br>tment<br>Librar<br>y | Program<br>Specific text<br>books and<br>reference<br>books, previous<br>year question<br>papers, Career<br>guidance   | To provide<br>additional<br>support for<br>students   | Rese<br>arch<br>scho<br>lars,<br>UG<br>stud<br>ents | Electronics<br>and<br>communica<br>tion<br>Engineerin<br>g books  |  |
| 6 | ED<br>&I<br>Lab                     | Ardui<br>no                   | Arduino is an<br>open-source<br>electronics<br>platform based<br>on easy-to-use<br>hardware and<br>software. It's<br>intended for<br>anyone making<br>interactive<br>projects. | Arduino<br>Education is<br>focused on<br>creating the<br>next<br>generation of<br>STEAM<br>programs —<br>integrating<br>Science,<br>Technology,<br>Engineering,<br>Arts and<br>Math — while<br>supporting<br>the needs of<br>teachers and<br>students<br>throughout<br>the<br>educational<br>journey. | Bas<br>ed<br>on<br>requ<br>irem<br>ent              | Some of<br>the areas<br>are as<br>mentioned<br>below:Dron<br>es,<br>Line<br>follower<br>Robot,<br>Internet of<br>Things(IoT),<br>Security<br>devices for<br>home,<br>Automatic<br>Opening<br>Dustbin<br>with<br>Ultrasonic<br>Sensor.<br>To measure<br>Temperatur<br>e.<br>Mini Stereo<br>Radio with<br>RDA5807 |  |

| Proteu | Proteus is a                 | Circuit                     | Bas  | Some of the                             | Arduino based F | ire Fighting Robot |
|--------|------------------------------|-----------------------------|------|---|-----------------|--------------------|
| s      | Virtual System               | simulation                  | ed   | areas are as                            | muuno pascu r   | IT I ISHIIIS KUUUL |
|        | Modelling and                | gives                       | on   | mentioned                               | 1KS20EC023      | Dhamini.J          |
|        | circuit                      | students a                  | requ | <b>below:</b><br>oscilloscope,          | 1KS20EC025      | Divya.N            |
|        | simulation                   | fast and fun                | irem | logic                                   | 1KS21EC401      | Sudeep.V.Reddy     |
|        | application. Th              | practical                   | ent  | analyzer,                               |                 | 1 0                |
|        | e suite                      | learning tool.              |      | frequency                               | 1KS20EC010      | Bhavitha.B         |
|        | combines<br>mixed mode       | A software solution         |      | meter, SPI<br>and I2C                   |                 |                    |
|        | SPICE circuit                | allows                      |      | debugger,                               |                 |                    |
|        | simulation,                  | instructors to              |      | generator,                              |                 |                    |
|        | animated                     | prepare and                 |      | AC and DC                               |                 |                    |
|        | components                   | re-use virtual              |      | voltage and<br>ammeter                  |                 |                    |
|        | and                          | labs.                       |      | ammeter                                 |                 |                    |
|        | microprocessor               |                             |      | schematic                               |                 |                    |
|        | models to facilit            |                             |      | layout, PCB                             |                 |                    |
|        | ate co-                      |                             |      | layout,<br>circuit                      |                 |                    |
|        | simulation of complete       |                             |      | simulation                              |                 |                    |
|        | microcontroller              |                             |      | and other                               |                 |                    |
|        | based designs.               |                             |      | features                                |                 |                    |
|        | 0                            |                             |      | microcontroll                           |                 |                    |
|        |                              |                             |      | er                                      |                 |                    |
| LabVi  | Laboratory                   | LabVIEW                     | Bas  | Some of the                             |                 |                    |
| ew     | Virtual                      | offers a                    | ed   | areas are as                            |                 |                    |
|        | Instrument                   | graphical                   | on   | mentioned                               |                 |                    |
|        | Engineering                  | programming                 | requ | below: <u>Autom</u><br>ated             |                 |                    |
|        | Workbench                    | approach                    | irem | Manufacturi                             |                 |                    |
|        | (LabVIEW) is a system-design | that helps to<br>visualize  | ent  | <u>ng test</u> of a                     |                 |                    |
|        | platform and                 | every aspect                |      | component/<br>sub-                      |                 |                    |
|        | development                  | of                          |      | system/syste                            |                 |                    |
|        | environment for              | application,                |      | m.                                      |                 |                    |
|        | a visual                     | including                   |      | Automated                               |                 |                    |
|        | programming                  | hardware                    |      | Product                                 |                 |                    |
|        | language from                | configuration               |      | design                                  |                 |                    |
|        | National                     | ,                           |      | <u>validation</u> of                    |                 |                    |
|        | Instruments.                 | measurement<br>of data, and |      | a<br>component/                         |                 |                    |
|        |                              | debugging.                  |      | sub-                                    |                 |                    |
|        |                              |                             |      | system/syste                            |                 |                    |
|        |                              |                             |      | m.                                      |                 |                    |
|        |                              |                             |      |   |                 |                    |
|        |                              |                             |      | <u>Control</u><br>and/or                |                 |                    |
|        |                              |                             |      | <u>monitoring</u> o                     |                 |                    |
|        |                              |                             |      | f a<br>machine/pie                      |                 |                    |
|        |                              |                             |      | ce of                                   |                 |                    |
|        |                              |                             |      | industrial                              |                 |                    |
|        |                              |                             |      | equipment/p<br>rocess.                  |                 |                    |
|        |                              |                             |      | Conditio                                |                 |                    |
|        |                              |                             |      | <u>Condition</u><br><u>monitoring</u> o |                 |                    |
|        |                              |                             |      | fa                                      |                 |                    |
|        |                              |                             |      | machine/pie<br>ce of                    |                 |                    |
|        |                              |                             |      | industrial                              |                 |                    |
|        |                              |                             |      | equipment.                              |                 |                    |
|        |                              |                             |      |   |                 |                    |

| Masm<br>/Tasm | Turbo<br>Assembler (TAS<br>M) is<br>a <u>computer ass</u><br><u>embler</u> (softwar<br>e for program<br>development)<br>developed<br>by <u>Borland</u> whi<br>ch runs on and<br>produces code<br>for 16- or 32-<br>bit <u>x86 DOS</u> or<br><u>Microsoft</u><br><u>Windows</u> .       | To train<br>students to<br>write the<br>code in<br>Assembly<br>level and<br>high level  | Bas<br>ed<br>on<br>requ<br>irem<br>ent | Some of<br>the areas<br>are as<br>mentioned<br>below:Inter<br>facing of<br>Keyboard,<br>interfacing<br>with<br>(keypad, Dc<br>motor,<br>Stepper<br>motor,Seve<br>n segment<br>LED<br>display,  |  |   |
|---------------|--|---|--|--|--|---|
| Pspice        | Pspice is a<br>powerful<br>general<br>purpose analog<br>circuit<br>simulator that<br>is used to verify<br>circuit designs<br>and to predict<br>the circuit<br>behavior. This<br>is of particular<br>importance<br>for integrated<br>circuits   | <u>open-</u><br><u>source analog</u><br><u>electronic</u><br><u>circuit simula</u><br><u>tor</u> . It is a<br>program used<br>in <u>integrated</u><br><u>circuit</u> and<br>board-level<br>design   | Bas<br>ed<br>on<br>requ<br>irem<br>ent | LCD).<br>Some of<br>the areas<br>are as<br>mentioned<br>below:Sim<br>ulatiom of<br>circuits,cal<br>culation of<br>electric<br>characteris<br>tics,<br>graphing<br>purpose<br>measureme<br>nt, and<br>control<br>systems.   | Electric power G<br>piezo electric tra<br>1KS20EC070<br>1KS20EC083<br>1KS20EC085<br>1KS20EC092 | - |
| Multis<br>im  | Multisim is an<br>electronic<br>schematic<br>capture and<br>simulation<br>program which<br>is part of a<br>suite of circuit<br>design<br>programs.<br>Multisim is<br>widely used in<br>academia and<br>industry for<br>circuits<br>education,<br>electronic<br>schematic<br>design and | Multisim<br>software<br>provides<br>SPICE<br>simulation,<br>analysis, and<br>printed<br>circuit board<br>(PCB) tools to<br>help you<br>quickly<br>iterate<br>through<br>designs and<br>improve<br>prototype<br>performance.<br>Move from<br>schematic to<br>layout<br>seamlessly to | Bas<br>ed<br>on<br>requ<br>irem<br>ent | Some of<br>the areas<br>are as<br>mentioned<br>below:<br>Simulation<br>of circuits,<br>aerospace<br>and<br>national<br>research<br>application<br>s including<br>avionics<br>equipment<br>for data<br>acquisition,<br>communica<br>tion<br>application<br>s, and the |  |   |

|   |            |             | ODIOD                       |                            |             | 1                           |                 |                     |
|---|------------|-------------|-----------------------------|----------------------------|-------------|-----------------------------|-----------------|---------------------|
|   |            |             | SPICE<br>simulation.        | save time and reduce       |             | design of<br>electronics    |                 |                     |
|   |            |             | siniuation.                 | prototype                  |             | for defense                 |                 |                     |
|   |            |             |                             | iterations.                |             | systems.                    |                 |                     |
|   |            |             |                             |                            |             |                             |                 |                     |
|   |            | Intel       | Galileo is a                | Intel Galileo              | Bas         | Some of                     | Mobile Jammer   | circuit             |
|   |            | Galile      | microcontroller             | is the first               | ed          | the areas<br>are as         | <b></b>         |                     |
|   |            | 0           | board based on              | Arduino                    | on          | mentioned                   | 1KS20EC063      | Vasanth kumar       |
|   |            |             | the Intel®                  | Certified<br>board that    | requ        | below:                      |                 |                     |
|   |            |             | Quark SoC<br>X1000          | provides a                 | irem<br>ent | Drones,                     | 1KS20EC067      | Praveen             |
|   |            |             | Application                 | mini PCI                   | ent         | Line                        | 1KS20EC064      | Pavan C             |
|   |            |             | Processor, a                | Express                    |             | follower<br>Robot,          |                 |                     |
|   |            |             | 32-bit Intel                | (mPCIe) slot.              |             | -                           | 1KS20EC107      | Thummala<br>Girish  |
|   |            |             | Pentium-class               | This allows                |             | Internet of<br>Things(IoT), |                 | GIIISII             |
|   |            |             | system on a                 | you to                     |             | Security                    |                 |                     |
|   |            |             | chip                        | connect                    |             | devices for                 |                 |                     |
|   |            |             |                             | standard                   |             | home,                       |                 |                     |
|   |            |             |                             | mPCIe                      |             | Automatic                   |                 |                     |
|   |            |             |                             | modules like<br>Wi-Fi,     |             | Opening<br>Dustbin          |                 |                     |
|   |            |             |                             | Bluetooth,                 |             | with                        |                 |                     |
|   |            |             |                             | and SIM card               |             | Ultrasonic                  |                 |                     |
|   |            |             |                             | adapters for               |             | Sensor.                     |                 |                     |
|   |            |             |                             | cell phones.               |             | To measure                  |                 |                     |
|   |            |             |                             | Synchronize                |             | Temperatur                  |                 |                     |
|   |            |             |                             | data between               |             | e.                          |                 |                     |
|   |            |             |                             | modules                    |             |                             |                 |                     |
|   |            |             |                             | using the                  |             |                             |                 |                     |
|   |            |             |                             | boards-<br>integrated      |             |                             |                 |                     |
|   |            |             |                             | Real Time                  |             |                             |                 |                     |
|   |            |             |                             | Clock                      |             |                             |                 |                     |
|   |            |             |                             |                            |             |                             |                 |                     |
| 7 | DSD<br>Lab | Ardui<br>no | Arduino is an open-source   | Arduino<br>Education is    | Bas<br>ed   | Some of the areas are as    | IOT Based Vehic | cal theft detection |
|   | Lab        | 110         | electronics                 | focused on                 | on          | mentioned<br>below:Drone    | 1KS20EC095      | SHIVA               |
|   |            |             | platform based              | creating the               | requ        | s,                          | 1KS20EC096      | SHREYA H            |
|   |            |             | on easy-to-use              | next                       | irem        | Line follower<br>Robot,     | 1KS20EC099      | SHWETA              |
|   |            |             | hardware and software. It's | generation of              | ent         | ,                           | 1KS20EC069      | PRIYANKA.HC         |
|   |            |             | intended for                | STEAM<br>programs —        |             | Internet of<br>Things(IoT), | 111020120009    |                     |
|   |            |             | anyone making               | integrating                |             | Security                    |                 |                     |
|   |            |             | interactive                 | Science,                   |             | devices for                 | Arduino based H | Fire Fighting Robot |
|   |            |             | projects.                   | Technology,                |             | home,                       | <b></b>         |                     |
|   |            |             |                             | Engineering,               |             | Automatic<br>Opening        | 1KS20EC023      | Dhamini.J           |
|   |            |             |                             | Arts and                   |             | Dustbin with                | 1KS20EC025      | Divya.N             |
|   |            |             |                             | Math — while               |             | Ultrasonic<br>Sensor.       | 1K320EC025      | Divya.iv            |
|   |            |             |                             | supporting<br>the needs of |             | To measure                  | 1KS21EC401      | Sudeep.V.Reddy      |
|   |            |             |                             | teachers and               |             | Temperature                 | 1/20050010      | Dla arritti - D     |
|   |            |             |                             | students                   |             | •                           | 1KS20EC010      | Bhavitha.B          |
|   |            |             |                             | throughout                 |             | Mini Stereo                 |                 |                     |
|   |            |             |                             | the                        |             | Radio with<br>RDA5807       |                 |                     |
|   |            |             |                             | educational                |             |                             |                 |                     |
|   |            |             |                             | journey.                   |             |                             |                 |                     |
|   |            |             | 1                           | 1                          | 1           |                             |                 |                     |

| Ductors      | Ductors in a             | O'mereit.                        | Dee  | 0   |  |
|--------------|--------------------------|----------------------------------|------|---|--|
| Proteu       | Proteus is a             | Circuit                          | Bas  | Some of   |  |
| S            | Virtual System           | simulation                       | ed   | the areas   |  |
|              | Modelling and            | gives                            | on   | are as  |  |
|              | circuit                  | students a                       | requ | mentioned   |  |
|              | simulation               | fast and fun                     | irem | below:  |  |
|              | application. Th          | practical                        | ent  | oscilloscope  |  |
|              | e suite                  | learning tool.                   |      | , logic   |  |
|              | combines                 | A software                       |      | analyzer,   |  |
|              | mixed mode               | solution                         |      | frequency   |  |
|              | SPICE circuit            | allows                           |      | meter, SPI  |  |
|              | simulation,              | instructors to                   |      | and I2C   |  |
|              | animated                 | prepare and                      |      | debugger,   |  |
|              | components               | re-use virtual                   |      | generator,  |  |
|              | and                      | labs.                            |      | AC and DC   |  |
|              | microprocessor           |                                  |      | voltage and   |  |
|              | models to facilit        |                                  |      | ammeter   |  |
|              | ate co-                  |                                  |      | ummeter   |  |
|              | simulation of            |                                  |      | schematic   |  |
|              | complete                 |                                  |      | layout, PCB   |  |
|              | microcontroller          |                                  |      | layout,   |  |
|              |                          |                                  |      | circuit   |  |
|              | based designs.           |                                  |      | simulation  |  |
|              |                          |                                  |      | and other   |  |
|              |                          |                                  |      | features  |  |
|              |                          |                                  |      | leatures  |  |
|              |                          |                                  |      | microcontr  |  |
|              |                          |                                  |      | oller   |  |
| <br>T 1 T 7' | T 1 /                    |                                  | D    |   |  |
| LabVi        | Laboratory               | LabVIEW                          | Bas  | Some of   |  |
| ew           | Virtual                  | offers a                         | ed   | the areas   |  |
|              | Instrument               | graphical .                      | on   | are as  |  |
|              | Engineering              | programming                      | requ | mentioned   |  |
|              | Workbench                | approach                         | irem | below:Auto  |  |
|              | (LabVIEW) is a           | that helps to                    | ent  | mated   |  |
|              | system-design            | visualize                        |      | <u>Manufactur</u>   |  |
|              | platform and             | every aspect                     |      | <u>ing test</u> of a  |  |
|              | development              | of                               |      | component   |  |
|              | environment for          | application,                     |      | /sub-   |  |
|              | a visual                 | including                        |      | system/sys  |  |
|              | programming              | hardware                         |      | tem.  |  |
|              | language from            | configuration                    |      |   |  |
|              |                          |                                  |      |   |  |
|              | National                 | ,                                |      |   |  |
|              | National<br>Instruments. | ,<br>measurement                 |      |   |  |
|              |                          | ,                                |      | Automated   |  |
|              |                          | ,<br>measurement<br>of data, and |      | Product   |  |
|              |                          | ,<br>measurement                 |      | <u>Product</u><br><u>design</u>   |  |
|              |                          | ,<br>measurement<br>of data, and |      | <u>Product</u><br><u>design</u><br><u>validation</u> o  |  |
|              |                          | ,<br>measurement<br>of data, and |      | <u>Product</u><br><u>design</u>   |  |
|              |                          | ,<br>measurement<br>of data, and |      | <u>Product</u><br><u>design</u><br><u>validation</u> o  |  |
|              |                          | ,<br>measurement<br>of data, and |      | <u>Product</u><br><u>design</u><br><u>validation</u> o<br>f a   |  |
|              |                          | ,<br>measurement<br>of data, and |      | <u>Product</u><br><u>design</u><br><u>validation</u> o<br>f a<br>component<br>/sub-   |  |
|              |                          | ,<br>measurement<br>of data, and |      | <u>Product</u><br><u>design</u><br><u>validation</u> o<br>f a<br>component  |  |
|              |                          | ,<br>measurement<br>of data, and |      | Product<br>design<br>validation o<br>f a<br>component<br>/sub-<br>system/sys  |  |
|              |                          | ,<br>measurement<br>of data, and |      | <u>Product</u><br><u>design</u><br><u>validation</u> o<br>f a<br>component<br>/sub-<br>system/sys<br>tem.                                     |  |
|              |                          | ,<br>measurement<br>of data, and |      | Product<br>design<br>validation o<br>f a<br>component<br>/sub-<br>system/sys  |  |
|              |                          | ,<br>measurement<br>of data, and |      | Product<br>design<br>validation o<br>f a<br>component<br>/sub-<br>system/sys<br>tem.<br><u>Control<br/>and/or</u><br>monitoring               |  |
|              |                          | ,<br>measurement<br>of data, and |      | Product<br>design<br>validation o<br>f a<br>component<br>/sub-<br>system/sys<br>tem.<br><u>Control</u><br>and/or<br><u>monitoring</u><br>of a |  |
|              |                          | ,<br>measurement<br>of data, and |      | Product<br>design<br>validation o<br>f a<br>component<br>/sub-<br>system/sys<br>tem.<br><u>Control<br/>and/or</u><br>monitoring               |  |

| Masm<br>/Tasm | Turbo<br>Assembler (TAS<br>M) is<br>a <u>computer ass</u><br><u>embler</u> (softwar<br>e for program<br>development)<br>developed<br>by <u>Borland</u> whi<br>ch runs on and<br>produces code<br>for 16- or 32-<br>bit <u>x86 DOS</u> or<br><u>Microsoft</u><br><u>Windows</u> . | To train<br>students to<br>write the<br>code in<br>Assembly<br>level and<br>high level  | Bas<br>ed<br>on<br>requ<br>irem<br>ent | industrial<br>equipment<br>/process.<br>Condition<br>monitoring<br>of a<br>machine/pi<br>ece of<br>industrial<br>equipment.<br>Some of<br>the areas<br>are as<br>mentioned<br>below:Inter<br>facing of<br>Keyboard,<br>interfacing<br>with<br>(keypad, Dc<br>motor,<br>Stepper<br>motor,Seve<br>n segment<br>LED<br>display,<br>LCD). |   |
|---------------|--|---|--|---|---|
| Pspice        | Pspice is a<br>powerful<br>general<br>purpose analog<br>circuit<br>simulator that<br>is used to verify<br>circuit designs<br>and to predict<br>the circuit<br>behavior. This<br>is of particular<br>importance<br>for integrated<br>circuits                                     | open-<br>source analog<br>electronic<br>circuit simula<br>tor. It is a<br>program used<br>in integrated<br>circuit and<br>board-level<br>design | Bas<br>ed<br>on<br>requ<br>irem<br>ent | Some of<br>the areas<br>are as<br>mentioned<br>below:Sim<br>ulatiom of<br>circuits,cal<br>culation of<br>electric<br>characteris<br>tics,<br>graphing<br>purpose<br>measureme<br>nt, and<br>control<br>systems.   | Automatic plant watering system1KS20EC091sanjana t<br>gadikar1KS20EC089Sanjana g1KS20EC102Sumana N1KS20EC110Vaishnavi A |
| Multis<br>im  | Multisim is an<br>electronic<br>schematic<br>capture and<br>simulation<br>program which<br>is part of a<br>suite of circuit  | Multisim<br>software<br>provides<br>SPICE<br>simulation,<br>analysis, and<br>printed<br>circuit board<br>(PCB) tools to<br>help you             | Bas<br>ed<br>on<br>requ<br>irem<br>ent | Some of<br>the areas<br>are as<br>mentioned<br>below:<br>Simulation<br>of circuits,<br>aerospace<br>and<br>national   | Mobile Jammer circuit1KS20EC063Vasanth kumar1KS20EC067Praveen1KS20EC064Pavan C1KS20EC107Thummala<br>Girish              |

|       | design<br>programs.<br>Multisim is<br>widely used in<br>academia and<br>industry for<br>circuits<br>education,<br>electronic<br>schematic<br>design and<br>SPICE<br>simulation. | quickly<br>iterate<br>through<br>designs and<br>improve<br>prototype<br>performance.<br>Move from<br>schematic to<br>layout<br>seamlessly to<br>save time and<br>reduce<br>prototype<br>iterations.   | Bas                             | research<br>application<br>s including<br>avionics<br>equipment<br>for data<br>acquisition,<br>communica<br>tion<br>application<br>s, and the<br>design of<br>electronics<br>for defense<br>systems.  | Bluetooth contro                                      | l Robot using                           |
|-------|---|---|---------------------------------|---|---|---|
| alile | microcontroller<br>board based on<br>the Intel®<br>Quark SoC<br>X1000<br>Application<br>Processor, a<br>32-bit Intel<br>Pentium-class<br>system on a<br>chip                    | the first<br>Arduino<br>Certified board<br>that provides a<br>mini PCI<br>Express<br>(mPCIe) slot.<br>This allows you<br>to connect<br>standard<br>mPCIe modules<br>like Wi-Fi,<br>Bluetooth, and<br>SIM card<br>adapters for<br>cell phones.<br>Synchronize<br>data between<br>modules using<br>the boards-<br>integrated Real<br>Time Clock | ed<br>on<br>requ<br>irem<br>ent | some of<br>the areas<br>are as<br>mentioned<br>below:<br>Drones,<br>Line<br>follower<br>Robot,<br>Internet of<br>Things(IoT),<br>Security<br>devices for<br>home,<br>Automatic<br>Opening<br>Dustbin<br>with<br>Ultrasonic<br>Sensor.<br>To measure<br>Temperatur<br>e. | smart phone<br>1KS20EC015<br>1KS20EC050<br>1KS19EC026 | C.Umadevi<br>K.Prathima<br>Eram Fathima |