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introduction (Notifie 0)	
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Basics of Physics 149	
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2.4 University

Kurukshetra University Haryana Indraprastha Academy Of Science & Engineering Uttar Pradesh Abdul Kalam Technical University Uttar Pradesh Maharshi Dayanand University Haryana

2.5 Name of Experiments

SNo.	Experiment ID	Experiment Name	
1	1399	Carey Foster's Bridge to Measure Specific Resistance of Material	
2	1400	Energy Band Gap of Semiconductor	
3	1401	Radiation with Temperature Change Using Stefan's Law	
4	1402	Finding Viscosity of Liquid by Rotating Cylinder Method	
5	I	Measurement of the wavelength of monochromatic source of light with the help of Fresnel's Bi prism	
6	1433	Measurement of focal length of the combination of the two lenses separated by a distance	
7	1434	To measure specific rotation of cane sugar using Polarimeter	
8	1435	Measurement of high resistance by the method of leakage of condenser	
9	1436	To study polarization of light using He-Ne Laser	
10	1437	Measurement of Numerical aperture and attenuation constant of optical fibre.	

3.1 Intention of Virtualization

A simulator will be developed sing an open source code at the back end. In the front screen the view of actual machine will be shown and the user will be allowed to use the buttons to set up the experiment virtually and then take the observations. The results appearing on the screen will be close to the results of the actual experimental setup. Steps for the completion of project are shown in figure 1 and Quarter-wise time line for the completion of the project is shown in figure 2.

3.2 How will the student get the feel of lab?

Student will be able to see the animation video in which the experiment will be being performed on the actual set up explaining all the steps.

3.3 Will you be using animations?

Yes

4.1 Frontend Technology (UI/UX)

PHP with JQuary, Apache tomcat server

4.2 Backend Technology

Open source code

4.3 Miscellaneous Technology

N/A

5.1 Learning Objective and Component

Student will be able to explain the Basics of Physics.

Student will be able to predict the variation of various measurable Physical quantities with physical conditions like temperature.

Student will be able to analyze the Basic laws of physics.

5.2 Student ability to perform in real lab

After the Virtual Lab experience the student can perform the experiment in the real lab.

5.3 Outcome through Simulator

There will be three components software, website and online manuals. Deatails of these components is as follows:

1. Software:

Code will be written on the Labview/ Matlab and the actual experimental set up will be established with the help of which bench marking of the results of the simulator developed will be matched.

2. Website:

Website will be developed possible domain name will be http://vlab.recbanda.ac.in (The link of the website can be further integrated with the main site www.vlab.co.in)

3. Manual and related material:

Manual and all the related content like video animation will be uploaded on the site.

5.4 References

- 1. https://www.scribd.com
- 2. http://studenti.fisica.unifi.it
- 3. http://www.physics.ryerson.ca

Budget

6.1 Manpower	1000000	
6.2 Travel	80000	
6.3 Contingency	120000	

6.4 Consumables	120000
6.6 Total Total budget should not exceed Total No. of Experiments X 2 lakhs	21,00,000
6.7 Justification of Budget	Steps for the completion of the project are shown in the figure 1. Man power is required to develop animation video, back end coding and developing online simulator. Hardware (under miscellaneous) is required in setting up actual experiment and the code is developed so that it can resemble actual experiment. Some travel may be involved in the developing process.