



**VISVA-BHARATI**  
**SIKSHA BHAVANA**  
**(INSTITUTE OF SCIENCE)**

**INTEGRATED SCIENCE EDUCATION AND RESEARCH CENTRE**  
**(ISERC)**

**Five-Year Integrated M. Sc.**

**STRUCTURE OF SYLLABUS APPROVED BY BOS OF ISERC ON 9<sup>TH</sup> FEBRUARY 2016**  
**(With revisions regarding foundation courses approved by BOS of ISERC on 20<sup>TH</sup> January 2019)**

**FIRST YEAR**  
***FIRST SEMESTER***

Subject	Credit Points	Marks	Classes/week	Tutorials/week	Practical/week	Total classes/week
<i>Chemistry</i>	5	75 + 50 *	3	1	3	7
<i>English</i>	2	50	2	-	-	2
<i>Life Science</i>	5	75 + 50 *	3	1	3	7
<i>Mathematics</i>	5	75 + 50 *	3	1	3	7
<i>Physics</i>	5	75 + 50 *	3	1	3	7
<i>Tagore Studies</i>	4	50	4	-	-	4
<b>Total</b>	<b>26</b>	<b>600</b>	<b>18</b>	<b>4</b>	<b>12</b>	<b>34</b>

***SECOND SEMESTER***

Subject	Credit Points	Marks	Classes/week	Tutorials/week	Practical/week	Total classes/week
<i>Chemistry</i>	5	75 + 50 *	3	1	3	7
<i>Life Science</i>	5	75 + 50 *	3	1	3	7
<i>Mathematics</i>	5	125	3	1	3	7
<i>Physics</i>	5	75 + 50 *	3	1	3	7
<i>Social Science</i>	2	50	2	-	-	2
<i>Tagore Studies</i>	4	50	4	-	-	4
<i>Environmental Studies</i>	2	25	2	-	-	2
<b>Total</b>	<b>28</b>	<b>625</b>	<b>20</b>	<b>4</b>	<b>12</b>	<b>36</b>

\*Theory 75 marks and Practical 50 marks

**SECOND YEAR**  
***THIRD SEMESTER***

Subject	Credit Points	Marks	Classes/week	Tutorials/week	Practical/week	Total classes/week
<i>Chemistry</i>	5	75 + 50 *	3	1	3	7
<i>Life Science</i>	5	75 + 50 *	3	1	3	7
<i>Mathematics</i>	5	75 + 50 *	3	1	3	7
<i>Philosophy &amp; History of Science-I</i>	2	50	2	-	-	2
<i>Physics</i>	5	75 + 50 *	3	1	3	7
<b>Total</b>	<b>22</b>	<b>550</b>	<b>14</b>	<b>4</b>	<b>12</b>	<b>30</b>

#### **FOURTH SEMESTER**

Subject	Credit Points	Marks	Classes/week	Tutorials/week	Practical/week	Total classes/week
<i>Chemistry</i>	5	75 + 50 *	3	1	3	7
<i>Life Science</i>	5	75 + 50 *	3	1	3	7
<i>Mathematics</i>	5	125	3	1	3	7
<i>Philosophy &amp; History of Science-II</i>	2	50	2	-	-	2
<i>Physics</i>	5	75 + 50 *	3	1	3	7
<b>Total</b>	<b>22</b>	<b>550</b>	<b>14</b>	<b>4</b>	<b>12</b>	<b>30</b>

\*Theory 75 marks and Practical 50 marks

#### **THIRD YEAR** **FIFTH SEMESTER**

Subject	Credit Points	Marks	Classes/week	Tutorials/week	Practical/week	Total classes/week
<i>Chemistry(Major)</i>	14	200+150 *	8	2	3+3+3	19
<i>Earth and Environmental Science (Major)</i>	14	200+150 *	8	2	3+3+3	19
<i>Life Science (Major)</i>	14	200+150 *	8	2	3+3+3	19
<i>Mathematics (Major)</i>	14	350	8	2	3+3+3	19
<i>Physics (Major)</i>	14	200+150 *	8	2	3+3+3	19
<i>Additional Compulsory**</i>	6	50+50+50	6	2	-	8
<i>Advanced Computing</i>	4	100			3+3	6
<b>Total</b>	<b>24</b>	<b>600</b>	<b>14</b>	<b>4</b>	<b>15</b>	<b>33</b>

\*Theory 200 marks and Practical 150 marks.

\*\* One from Major and two from the other subjects to be chosen. Choice bucket: (i) Analytical Chemistry-I, (ii) Principles of Soil Science, (iii) Developmental Biology, (iv) Mathematical Theory of Probability & Statistics, (v) Statistical Mechanics

#### **SIXTH SEMESTER**

Subject	Credit Points	Marks	Classes/week	Tutorials/week	Practical/week	Total classes/week
<i>Chemistry(Major)</i>	14	200+150 *	8	2	3+3+3	19
<i>Earth and Environmental Science (Major)</i>	14	200+150 *	8	2	3+3+3	19
<i>Life Science (Major)</i>	14	200+150 *	8	2	3+3+3	19
<i>Mathematics (Major)</i>	14	300+50 <sup>#</sup>	8	2	3+3+3	19
<i>Physics (Major)</i>	14	200+150 *	8	2	3+3+3	19
<i>Additional Compulsory**</i>	6	50+50+50	6	2	-	8
<i>Advanced Computing</i>	4	100			3+3	6
<b>Total</b>	<b>24</b>	<b>600</b>	<b>14</b>	<b>4</b>	<b>15</b>	<b>33</b>

\*Theory 200 marks and Practical 150 marks, <sup>#</sup>Theory 300 marks and Practical 50 marks

\*\*One from Major and two from the other subjects to be chosen. Choice bucket: (i) Analytical Chemistry-II, (ii) Environmental Earth Science, (iii) Diversity of Life Forms, (iv) Mathematical Modeling, (v) Spectroscopy-I

#### **FOURTH YEAR** **SEVENTH SEMESTER**

Subject	Credit Points	Marks	Classes/week	Tutorials/week	Practical/week	Total classes/week
<i>Chemistry(Major)</i>	14	200+150 *	8	2	3+3+3	19
<i>Earth and Environmental Science (Major)</i>	14	200+150 *	8	2	3+3+3	19
<i>Life Science (Major)</i>	14	200+150 *	8	2	3+3+3	19
<i>Mathematics (Major)</i>	14	300+50 <sup>#</sup>	8	2	3+3+3	19
<i>Physics (Major)</i>	14	200+150 *	8	2	3+3+3	19
<i>Additional Compulsory**</i>	6	50+50+50	6	2	-	8
<i>Advanced Computing</i>	4	100			3+3	6
<b>Total</b>	<b>24</b>	<b>600</b>	<b>14</b>	<b>4</b>	<b>15</b>	<b>33</b>

\*Theory 200 marks and Practical 150 marks, <sup>#</sup>Theory 300 marks and Practical 50 marks

\*\*One from Major and two from the other subjects to be chosen. Choice bucket: (i) Polymer Science, (ii) Ecology, (iii)

***EIGHTH SEMESTER***

Subject	Credit Points	Marks	Classes/ week	Tutorials/ week	Practical/ week	Total classes/week
<i>Chemistry(Major)</i>	14	200+150 *	8	2	3+3+3	19
<i>Earth and Environmental Science (Major)</i>	14	200+150 *	8	2	3+3+3	19
<i>Life Science (Major)</i>	14	200+150 *	8	2	3+3+3	19
<i>Mathematics (Major)</i>	14	300+50 <sup>#</sup>	8	2	3+3+3	19
<i>Physics (Major)</i>	14	200+150 *	8	2	3+3+3	19
<i>Additional Compulsory**</i>	6	50+50+50	6	2	-	8
<i>Advanced Computing</i>	4	100			3+3	6
<b>Total</b>	<b>24</b>	<b>600</b>	<b>14</b>	<b>4</b>	<b>15</b>	<b>33</b>

\*Theory 200 marks and Practical 150 marks, <sup>#</sup>Theory 300 marks and Practical 50 marks

\*\*One from Major and two from the other subjects to be chosen. Choice bucket: (i) Renewable Energy, (ii) Hydrology and Water Management, (iii) Statistical Methods for Biology, (iv) Mathematical Ecology, (v) Fundamentals of Laser

**FIFTH YEAR**

***NINTH SEMESTER***

Subject	Credit Points	Marks	Classes/ week	Tutorials/ week	Practical/ week	Total classes/week
<i>Chemistry (Major)</i>	24	600	Dissertation			
<i>Earth and Environmental Science (Major)</i>	24	600	Dissertation			
<i>Life Science (Major)</i>	24	600	Dissertation			
<i>Mathematics (Major)</i>	24	600	Dissertation			
<i>Physics (Major)</i>	24	600	Dissertation			
<b>Total</b>	<b>24</b> (In each subject)	<b>600</b>				

***TENTH SEMESTER***

Subject	Credit Points	Marks	Classes/ week	Tutorials/ week	Practical/ week	Total classes/week
<i>Chemistry (Major)</i>	24	600	Dissertation			
<i>Earth and Environmental Science (Major)</i>	24	600	Dissertation			
<i>Life Science (Major)</i>	24	600	Dissertation			
<i>Mathematics (Major)</i>	24	600	Dissertation			
<i>Physics (Major)</i>	24	600	Dissertation			
<b>Total</b>	<b>24</b> (In each subject)	<b>600</b>				