F.No. 6-38/2018(SUG) Annual system-HPU (Acad) V&L-I
Himachal Pradesh University
(NAAC Accredited "A" Grade University)
Academic Branch, Summer Hill Shimla-5

To

1. The Controller of Examinations, HPU, Shimla-171005.
2. The D.R/A.R Eval./Re.Eval/Conduct/Exams, HPU, Shimla-171005.
3. The D.R/A.R Secrecy, HPU, Shimla-171005 with 2 spare copies.
4. The D.R/A.R Exam/ S.O.Exam (UG) HPU, Shimla-171005
5. The Incharge (RUSA Programmer/ERP), Computer Centre Examination Wing, HPU, Shimla-171005.

Subject: Complimentary copy of Correction/Addition in B.Sc. with Geology for annual system for the session 2018-19 onwards.

Sir/Madam,

In continuation to this office letter of even number dated 16-07-2018. I am directed to send herewith complimentary copy of correction/addition in the syllabus in respect of above mentioned subject under CBCS annual system which have already been uploaded on the University’s Website: www.hpuniv.ac.in duly approved by the Standing Committee of Academic Council in its meeting held 16.11.2019 vide item No. 2, as per annexure-IV, on the recommendations of the concerned Board of Studies/Faculties (UG/PG) for its implementation from the Academic Session 2018-19 onwards.

Yours faithfully,

[Signature]
Assistant Registrar (Acad)
HP University Shimla-5

Dated: 25-11-2019

Encls. As Above.

Endst. No. Even

CC:-

1. The Dean, Faculty of Physical Sciences, HPU, Shimla-171005.
2. The Chairperson/Principal, Department of Geology, Govt. College Dharamshala, Kangra with the request to send 2 authenticated hard copies of the concerned syllabus to academic branch and soft copies in PDF format to Web Admin on webhpuniv@gmail.com as early as possible.
3. All the Principals of the Govt./Non-Govt./Maintained/Regional Centre/Colleges running UG classes of H.P.U. with the request that above mentioned syllabi may kindly be downloaded from the aforesaid website.
4. The Supdt. Meeting (Acad), HPU, Shimla-5, w.r.t decision taken by Standing Committee of Academic council in its meeting dated 16.11.2019 vide item No. 2 for information and further necessary action.
5. The Web Admin, HPU, Shimla-5, with the request to upload this letter with syllabi on the website.

[Signature]
Assistant Registrar (Acad)
## Annexure- IV

### SCHEME FOR ANNUAL SYSTEM IN B. SC. WITH GEOLOGY FOR THE ACADEMIC SESSION 2018-19 ONWARDS

<table>
<thead>
<tr>
<th>Year</th>
<th>Discipline specific core courses</th>
<th>Ability enhancement Compulsory Courses AECC *Credits</th>
<th>Skill enhancement Compulsory Course SECC *Credits</th>
<th>Discipline Specific Elective DSE *Credits</th>
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</thead>
<tbody>
<tr>
<td><strong>First Year</strong></td>
<td>DSC-1 Physical Geology and Geomorphology GEOL 101 (TH) 04* GEOL 101 (PR) 02*</td>
<td>AECC-1 Environmental Sciences 04*</td>
<td></td>
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<tr>
<td></td>
<td>DSC-2 Structural Geology and Mineralogy GEOL 102 (TH) 04* GEOL 102 (PR) 02*</td>
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<tr>
<td><strong>Second Year</strong></td>
<td>DSC-3 Petrology GEOL 201 (TH) 04* GEOL 201 (PR) 02*</td>
<td>SECC-1 Geochemistry GEOL 203 (TH) 04*</td>
<td></td>
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<tr>
<td></td>
<td>DSC-4 Stratigraphy and Paleontology GEOL 202 (TH) 04* GEOL 202 (PR) 02</td>
<td>SECC-2 Fuel Geology GEOL 204 (TH) 04*</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Third Year</strong></td>
<td>SECC-3 Photo Geology and Remote Sensing GEOL 301 (TH) 04*</td>
<td>SECC-4 Himalayan Geology GEOL 302 (TH) 04*</td>
<td>DSE-1 Applied and Economic Geology GEOL 303 (TH) 04* GEOL 303 (PR) 02*</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>DSE-2 Environmental Geology and Geohydrology GEOL 304 (TH) 04* GEOL 304 (PR) 02*</td>
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SECOND YEAR

FUEL GEOLOGY

<table>
<thead>
<tr>
<th>Name of the Course</th>
<th>Geology-SECC 2: Fuel Geology</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Theory-04</td>
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<tr>
<td>Theory</td>
<td>30 Lectures</td>
</tr>
<tr>
<td>Code</td>
<td>GEOL-204 TH</td>
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<tr>
<td>Yearly Examination</td>
<td>70 marks (3 Hrs)</td>
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<tr>
<td>Continuous Comprehensive Assessment (CCA)</td>
<td>30 marks</td>
</tr>
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</table>

CCA: Based on midterm exam, class test/seminar/assignments/quiz and attendance. Midterm Exam=15 marks, Class test/seminar/assignments/quiz =10 marks, Attendance=05 marks; a) >=75% to 80% : 3 marks b) >= 80% to 90% = 4 marks c) >= 90% and above = 5 Mark

Instructions for Paper Setters and Candidates:
1. The question paper will consist of five sections: Section A (compulsory, covering syllabus from all the units), Section B (Unit I and II), Section C (Unit III and IV), Section D (Unit V and VI) and Section E (Unit VII and VIII). Examiner will set nine questions in all, question number 1 (One) will be compulsory and comprise one question each from all the Units. Each question from section B, C, D and E will carry 10 marks. Question Number 1 (Section-A), will consist of ten sub-questions each of 1 mark of various types such as: Multiple Choice Questions (MCQ)/fill in the blanks and/or short answer type questions.
2. The candidate will be required to attempt five questions in all i.e. selecting one question from each sections B, C, D and E and ten sub-questions from section A. (Compulsory question number 1). The duration of the examination will be 3 hours.

Fuel Geology (GEOL 204TH)

Unit-I: Coal: Definition and origin of Coal; Basic classification of coal; Fundamentals of coal petrology - Introduction to lithotypes, microlithotypes and macerals in coal; Proximate and ultimate analysis.

Unit-II: Coal as a Fuel: Coal Bed Methane (CBM); global and Indian scenario; Underground coal gasification; Coal liquefaction.

Unit-III: Petroleum: Chemical composition and physical properties of crudes in nature; Origin of petroleum; Maturation of kerogen; Biogenic and thermal effect.

Unit-IV: Petroleum Reservoir and Traps: Reservoir rocks: general attributes and petrophysical properties; Classification of reservoir rocks - elastic and chemical; Hydrocarbon traps: definition, anticlinal theory and trap theory; Classification of hydrocarbon traps - structural, stratigraphic and combination; Time of trap formation and time of hydrocarbon accumulation. Cap rocks - definition and general properties. Plate tectonics and global distribution of hydrocarbon reserves; Gas hydrates and nuclear fuel.
BOOKS SUGGESTED


THIRD YEAR

HIMALAYAN GEOLOGY

<table>
<thead>
<tr>
<th>Name of the Course</th>
<th>Geology-SECC-4</th>
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<tr>
<td></td>
<td>: Himalayan Geology</td>
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<table>
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<tr>
<th>Credits</th>
<th>Theory-04</th>
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<tbody>
<tr>
<td>Theory</td>
<td>30 Lectures</td>
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<tr>
<td>Code</td>
<td>GBOL-302 TH</td>
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<tr>
<td>Yearly Examination</td>
<td>70 marks (3 Hrs)</td>
</tr>
<tr>
<td>Continuous Comprehensive Assessment (CCA)</td>
<td>30 marks</td>
</tr>
</tbody>
</table>

CCA: Based on midterm exam, class test/seminar/assignments/quiz and attendance. Midterm Exam=15 marks, Class test/seminar/assignments/quiz =10 marks, Attendance=05 marks; a) >=75% to 80% : 3 marks b) >=80% to 90% = 4 marks c) >= 90% and above = 5 Mark

Instructions for Paper Setters and Candidates:
1. The question paper will consist of five sections: Section A (compulsory, covering syllabus from all the units), Section B (Unit I and II), Section C (Unit III and IV), Section D (Unit V and VI) and Section E (Unit VII and VIII). Examiner will set nine questions in all, question number 1 (One) will be compulsory and comprise one question each from all the Units. Each question from section B, C, D and E will carry 10 marks. Question Number 1 (Section-A), will consist of ten sub-questions each of 1 mark of various types such as: Multiple Choice Questions (MCQ)/fill in the blanks and/or short answer type questions.
2. The candidate will be required to attempt five questions in all i.e. selecting one question from each sections B, C, D and E and ten sub-questions from section A. (Compulsory question number 1). The duration of the examination will be 3 hours.

Himalayan Geology (GEOL 302TH)

Unit-I: Formation of Tethyes Geosyncline, Phases of upheaval of Himalayas, Geological and Geographical sub-divisions of Himalayas, Stratigraphical and lithological units of Himalayas and their correlation.
Unit-II: Structures of the Himalayas; Sedimentation, Igneous activity and metamorphism in Himalayas; Mineral wealth of Himalayas, Detailed study of important rocks type of Himalayas both in hand specimen and under microscope.

Unit-III: Geosynclines, their evolution and; Plate tectonics, theories and plate movement; Sea-floor spreading theories and evidences.

Unit-IV: Concepts of Isostacy, Horst-Grabens and Rift valleys, Neo-tectonic movements and its indicators.

Books Suggested:

2. Himalayas (Geological Aspects) by P.S.Saklani.
5. Understanding of the Earth by Gunter Gass.
6. Dynamics of Earth by Spineer