

# PARUL UNIVERSITY - FACULTY OF AYURVED

Department of Ayurved

## SYLLABUS FOR 2nd Year MS/MD PROGRAMME

Rasashastra Evum Bhaishajya Kalpana - Ras Shashtra - Paper 1 (02205201)

Type of Course: MS/MD

Prerequisite:

Rationale:

Teaching and Examination Scheme:

Teaching Scheme			Credit	Examination Scheme					Total
Lect Hrs/ Year	Tut Hrs/ Week	Lab Hrs/ Year		External		Internal			
				T	P	T	CE	P	
100	-	100	-	100	100	-	-	-	200

Lect - Lecture, Tut - Tutorial, Lab - Lab, T - Theory, P - Practical, CE - CE, T - Theory, P - Practical

Contents:

Sr.	Topic	Weightage	Teaching Hrs.
1	<b>History of Rasashastra-Part A:</b> History and Chronological evolution of Rasashastra, concept of Raseshwara darshan. Fundamental Principles of Rasashastra Technical terminologies (Paribhasha) used in Rasa shastra	%	
2	<b>Yantra Upakarana Vigyana-Part A:</b> Detailed knowledge of ancient and contemporary Yantropakarana and their accessories used in aushadhikaran and their contemporary modification such as yantras, mushas, putas, Koshtis, bhrashtis, muffle furnaces and other heating appliances, ovens, driers etc. used in manufacturing of Rasaushadhis in small scale and large scale along with their applications	%	
3	<b>Samskara Vigyana-Part A:</b> Study of Samskara, Role of agni (Heat), jala and other dravas (water and other processing liquids), kala (Time span), paatra (container) etc. and their significance in aushadhikarana	%	
4	<b>Bhavana Vigyana-Part A:</b> Concept of Bhavana, study of Mardana and its significance and knowledge of ancient and contemporary grinding techniques	%	
5	<b>Shodhanadi Vigyana-Part A:</b> Detailed Knowledge of different procedures of Shodhana, Jarana Murchana and Marana, concept of Puta, definition, types and specifications of different Putas. Significance of different Putas in relation to Bhasmikarana and therapeutic efficacy of dravya under process. Bhasma pariksha vidhi and its significance in relation to contemporary testing procedures. Amritikarana and Lohitikarana	%	

6	<b>Satvadi Vigyana-Part A:</b> Detailed knowledge of Satva and Druti, Satva shodhan, mrudukaran and Maran of Satva, its significance, in relation to therapeutic efficacy of dravya under process	%	
7	<b>Pratinidhi Dravya Vigyana-Part A:</b> Concept of Pratinidhi dravya and discussion on controversial drugs	%	
8	<b>Parad Vigyana-Part B:</b> Detailed ancient and contemporary knowledge of Parada and its compounds with reference to source, occurrence, physico-chemical characterization, graahya agraahyatva, Parada dosha, Parada gati, Parada shodhan, Study of Ashta sanskara, ashtadasha sanskara etc., Hingulottha Parada. Concept of Parada jaran, moorcchana, bandhan, pakshaccheda and marana etc. Therapeutic properties and uses of Parada	%	
9	<b>Maharasadi Vigyana-Part B:</b> Detailed ancient & contemporary knowledge with Geochemical / mineralogical / biological identification, source, occurrence, physico-chemical characterization, graahya-agraahyatva, Shodhan Maranadi vidhi and therapeutic properties and uses of dravyas etc. included in Maharasa, Uparasa, Sadharana rasa, Dhatu, Upadhatu, Ratna, Uparatna, Visha, Upavisha, Sudha varga, Lavana varga, Kshara varga, Sikata varga and other miscellaneous drugs used in Rasashastra	%	
10	<b>Manufacturing &amp; pharmacopeial standards-Part B:</b> Detailed knowledge of manufacturing, pharmacopeial standards, storage, shelf life, therapeutic efficacy, dose, anupana, vikarashanti upaya and development of technology with Standard Operating Procedures of processing, standardization, quality control of Bhasmas and Pishtis  Bhasma - Abhraka Bhasma, Svarnamakshika Bhasma, Kasis Bhasma, Svarna Bhasma, Rajata Bhasma, Tamra Bhasma, Loha Bhasma, Mandur Bhasma, Naga Bhasma, Vanga Bhasma, Yashad Bhasma, Trivanga Bhasma, Pittala, Kamsya and Varthaloha Bhasma, Shankha Bhasma, Shukti Bhasma, Kapardika Bhasma, Godanti Bhasma, Praval Bhasma, Mrigashringa Bhasma, Mayurpiccha Bhasma, Kukkutand twak Bhasma, Hiraka Bhasma, Manikya Bhasma.  Dravaka - Shankha Dravaka  Pishti - Praval pishti, Manikya Pishti, Mukta pishti, Jahara mohara pishti, Trinakanta mani pishti etc	%	
11	<b>Standardization and Quality Control-Part B:</b> Detailed knowledge of manufacturing, storage, shelf life, pharmacopeial standards, therapeutic efficacy, dose, anupana and development of technology with Standard Operating Procedures of processing, standardization and quality control of Kharaliya rasa, Parpati, Kupipakva rasa and Pottali rasa	%	

12	<b>Classical Texts-Part B:</b> Study of classical texts with respective commentaries and special emphasis on Rasarnava, Rasahridaya tantra, Rasa Ratna Samucchaya, Rasendra Chintamani, Rasendra Chudamani, Rasa Ratnakara, Rasadhyaya, Rasa Kamdhenu, Anandkanda, Siddha Bheshaja Manimala, Ayurveda Prakash, Rasatarangini, Bhaishajya Ratnavali, Rasamritam etc. and the books mentioned in the Schedule I of D & C Act – 1940. Relevant portions of Brihatrayi	%	
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**\*Continuous Evaluation:**

It consists of Assignments/Seminars/Presentations/Quizzes/Surprise Tests (Summative/MCQ) etc.

**List of Practical:**

1. Practical of various dosage forms
2. Educational Visits
3. Pharmacy Postings

# PARUL UNIVERSITY - FACULTY OF AYURVED

Department of Ayurved

## SYLLABUS FOR 2nd Year MS/MD PROGRAMME

Rasashastra Evum Bhaishajya Kalpana - Bhaishajya Kalpana - Paper 2 (02205202)

Type of Course: MS/MD

Prerequisite:

Rationale:

Teaching and Examination Scheme:

Teaching Scheme			Credit	Examination Scheme					Total
Lect Hrs/ Year	Tut Hrs/ Week	Lab Hrs/ Year		External		Internal			
				T	P	T	CE	P	
100	-	100	-	100	-	-	-	-	100

Lect - Lecture, Tut - Tutorial, Lab - Lab, T - Theory, P - Practical, CE - CE, T - Theory, P - Practical

Contents:

Sr.	Topic	Weightage	Teaching Hrs.
1	<b>History of Bhaishajya Kalpana-Part A:</b> History and Chronological evolution of Bhaishajya Kalpana, Concept of Bhaishajya and Aushadh, fundamental principles of Bhaishajya Kalpana. Technical terminologies (Paribhasha) used in Bhaishajya Kalpana	%	
2	<b>Collection and Storage-Part A:</b> Classical and Contemporary concepts of Collection, storage, Saviryata Avadhi and preservation methods of different fresh and dry Aushadhi dravyas and their graahya agrahyatva	%	
3	<b>Drug administration-Part A:</b> Detailed knowledge of routes of drug administration, Aushadha matra, Anupana, Sahapana, Aushadha Sevana Kala, Kala Avadhi, Pathya, Apathya (Posology).	%	

4	<p><b>Manufacturing of Various Kalpanas-Part A:</b></p> <p>Detailed knowledge of manufacturing, standardization, quality control, pharmacopeial standards, storage, shelf life and development of innovative technology with Standard manufacturing Operating Procedures of following dosage forms-</p> <p>i) Panchavidha Kashaya, Churna, Rasakriya, Ghana, Avaleha, Pramathya, Mantha, Panaka, Sarkara, Kshirapaka, Ushnodaka, Aushadha Siddha Udaka, Sadangodaka, Tandulodaka, Laksharasa, Arka, Satva, Kshara, Lavana, Masi, Gutika, Vatika, Modaka, Guggulu and Varti etc.</p> <p>ii) Sneha Kalpana: Concept of accha sneha and sneha pravicharana and Murchhana. Sneha paka, types of sneha paka and sneha siddhi lakshana, Avartana. Sneha kalpa karmukata (Pharmacokinetics and dynamics of sneha kalpa). Role of Sneha in relation to absorption of drug.</p> <p>iii) Kritanna and Bsheshaja Siddha Anna Kalpana, Aharopayogi varga, concept of medicinal and functional food, dietary supplements and neutraceuticals etc.</p> <p>iv) Sandhana kalpana: Madya varga and Shukta varga. Asava yoni. Alcoholic and acidic fermentation. Sandhana kalpa karmukata (Pharmacokinetics and dynamics). Advancements in fermentation technology. Knowledge of regulations in relation to alcoholic drug preparations.</p> <p>v) Bahya Prayogartha Kalpana : Lepa, Upanaha, Udvartan, Avachurnana / Avadhulana, Abhyanga, Dhupana, Malahara.</p> <p>vi) Mukha, Karna, Nasa, Netropacharartha Kalpana</p> <p>vii) Basti Kalpana: Basti Yantra Nirmana, Types of basti. Anuvasana and Asthapana basti. Karma, kala and yoga basti etc. Basti Kalpa (Madhutailika, Piccha basti etc.), Comparison of Asthapana and Anuvasana basti with evacuation and retention enema</p>	%	
5	<p><b>Methods of Expression and Extraction-Part B:</b></p> <p>Methods of Expression and Extraction: Maceration, percolation, distillation, infusion and decoction</p>	%	
6	<p><b>Liquids-Part B:</b></p> <p>Liquids: Clarified liquid, syrup, elixir, filtration techniques</p>	%	
7	<p><b>Solid dosage Forms-Part B:</b></p> <p>Solid dosage Forms: Powders: Size reduction, separation techniques, particle size determination, principles of mixing. Tablets: Methods of tableting, suppositories, pessaries and capsules, sustained release dosage forms</p>	%	
8	<p><b>Semisolid Forms-Part B:</b></p> <p>Semisolid dosage forms, emulsions, suspensions, creams and ointments, sterilization of ophthalmic preparations</p>	%	
9	<p><b>An introduction to various cosmetic preparations:</b></p> <p>An introduction to various cosmetic preparations</p>	%	

10	<b>Drying Methods-Part B:</b> Drying, open and closed air drying, freeze drying, vacuum drying and other drying methods pharmaceutical excipients	%	
11	<b>Classical Texts-Part B:</b> Study of classical texts with special emphasis on Chakradatta, Sharangadhara Samhita, Bhaishajya Ratnavali, Bhava Prakasha, Yogaratnakara, relevant portions of Brihatrayi, Ayurvedic Pharmacopeia of India, Ayurvedic Formulary of India	%	

**\*Continuous Evaluation:**

It consists of Assignments/Seminars/Presentations/Quizzes/Surprise Tests (Summative/MCQ) etc.

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## SYLLABUS FOR 2nd Year MS/MD PROGRAMME

Rasashastra Evum Bhaishajya Kalpana - Ras Chikitsa and Aushadha Yoga Vigyana - Paper 3  
(02205203)

Type of Course: MS/MD

Prerequisite:

Rationale:

Teaching and Examination Scheme:

Teaching Scheme			Credit	Examination Scheme					Total
Lect Hrs/ Year	Tut Hrs/ Week	Lab Hrs/ Year		External		Internal			
				T	P	T	CE	P	
100	-	100	-	100	-	-	-	-	100

Lect - Lecture, Tut - Tutorial, Lab - Lab, T - Theory, P - Practical, CE - CE, T - Theory, P - Practical

Contents:

Sr.	Topic	Weightage	Teaching Hrs.
1	<p><b>Rasachikitsadi Vigyana-Part A:</b></p> <p>Rasachikitsa, Kshetrikaran, Rasajirna, Lohajirna, Aushadhi Sevana Vikarashanti Upaya. Ashuddha, Apakva, Avidhi Rasadravya Sevanajanya Vikara evam Vikara shanti upaya.</p>	%	
2	<p><b>Kharaliya Rasa-Part A:</b></p> <p>Detailed knowledge of Aushadhi patha Nischiti and sanyojan (formulation composition), dose, anupana and method of administration, therapeutic efficacy and uses (indications and contra-indications), probable mode of action etc. of the following Aushadhi yogas:</p> <p>Shwasa kuthara Rasa, Tribhuvana kirti Rasa, Higuleshwara Rasa, Ananda bhairava Rasa, Maha Lakshmvilasa Rasa, Vasnata kusumakara Rasa, Vasanta malti Rasa, Brihat vata chintamani Rasa, Laghu suta shekhar Rasa, Suta shekhara Rasa, Ram ban Rasa, Chandra kala Rasa, Yogendra Rasa, Hridyarnava rasa, Grahani kapata Rasa, Garbha pala Rasa, Jalodarari Rasa, Mrityunjaya Rasa, Madhumalini vasanta Rasa, Arsha kuthara Rasa, Krimi mudgara Rasa, Suchika bharana Rasa, Tri netra Rasa, Smruti sagara Rasa, Vata gajankusha Rasa, Agni kumar Rasa, Ekangavir Rasa, Kama dugha Rasa, Purna chandrodaya Rasa, Pratap lankeshwara Rasa, Maha vata vidhwansaka Rasa, Kasturi bhairava Rasa, Ashwa kanchuki Rasa, Gulma kuthara Rasa, Maha jwarankusha Rasa, Chandra mrita Rasa, Kapha ketu Rasa, Prabhakara Vati, Pravala Panchamrita, Gandhaka Rasayana, Chaturbhuj rasa, Navajivan rasa, Shonitargal rasa, Raktapitta kulakandan rasa, Amavatari Rasa, Kravyada Rasa, Garbha chintamani Rasa, Chintamani Rasa, Trilokya chintamani Rasa, Pradarantaka Rasa, Vangeshwara Rasa, Brihat vangeshwara Rasa, Shwasakasa Chintamani Rasa, Arogya vardhini Vati, Chandra prabha Vati, Agni tundi vati, Shankha Vati</p>	%	

3	<p><b>Kupipakva Rasa-Part A:</b></p> <p>Detailed knowledge of Aushadhi patha Nischiti and sanyojan (formulation composition), dose, anupana and method of administration, therapeutic efficacy and uses (indications and contra-indications), probable mode of action etc. of the following Aushadhi yogas:</p> <p>Rasa Sindura, Makaradhwaja, Sidha makaradhwaja, Samira pannaga Swarnavanga, Malla sindura, Rasa karpura, Rasa pushpa, Manikya Rasa</p>	%	
4	<p><b>Parpati Rasa-Part A:</b></p> <p>Detailed knowledge of Aushadhi patha Nischiti and sanyojan (formulation composition), dose, anupana and method of administration, therapeutic efficacy and uses (indications and contra-indications), probable mode of action etc. of the following Aushadhi yogas:</p> <p>Rasa Parpati, Loha Parpati, Tamra Parpati, Suwarna Parpati, Gagana Parpati, Vijay Parpati, Panchamrit Parpati, Shwet Parpati, Bola Parpati</p>	%	
5	<p><b>Pottali Rasa-Part A:</b></p> <p>Detailed knowledge of Aushadhi patha Nischiti and sanyojan (formulation composition), dose, anupana and method of administration, therapeutic efficacy and uses (indications and contra-indications), probable mode of action etc. of the following Aushadhi yogas:</p> <p>Rasagarbha pottali, Hemagarbha pottali, Mallagarbha pottali, Hiranyagarbha pottali, Shankagarbha pottali, Lokanatha rasa, Mriganka Pottali</p>	%	
6	<p><b>Loha evam Mandura Kalpa-Part A:</b></p> <p>Detailed knowledge of Aushadhi patha Nischiti and sanyojan (formulation composition), dose, anupana and method of administration, therapeutic efficacy and uses (indications and contra-indications), probable mode of action etc. of the following Aushadhi yogas:</p> <p>Ayaskriti, Loha Rasayana, Amla pittantaka loha, Chandanadi loha, Dhatri loha, Navayasa loha, Putapakva vishama jwarantaka loha, Shilajatwadi loha, Tapyadi loha, Saptamrita loha, Dhatri loha Amritasara Loha, Shankaramat loha, Pradarantaka loha, Rohitaka loha. Punarnava Mandura, Shatavari Mandura, Tara Mandura, Triphala Mandura, Mandura Vataka etc</p>	%	

7	<p><b>Panchavidha Kashayas and their Upakalpa-Part B:</b></p> <p>Detailed knowledge of Aushadhi patha Nischiti and sanyojan (formulation composition), dose, anupana and method of administration, therapeutic efficacy and uses (indications and contra-indications), probable mode of action etc. of the following Aushadhi yogas:</p> <p>Ardraka swarasa, Tulasi swarasa, Vasa putapaka swarasa, Nimba kalka, Rasona kalka, Kulattha Kwath, Punarnavasthaka kwatha, Rasna saptaka kwatha, Dhanyak hima, Sarivadi hima, Panchakola phanta, Tandulodaka, Mustadi pramathya, Kharjuradi mantha, Shadanga paniya, Laksha rasa, Arjuna kshirapaka, Rasona kshirapaka, Chinchapanaka, Candana panaka, Banapsha sharkara, Nimbu sharkara, Amrita satva, Ardraka satva, Ajamoda arka, Yavanyadi arka</p>	%	
8	<p><b>Kritanna and Bheshaja Siddha Ahara Kalpana-Part B:</b></p> <p>Detailed knowledge of Aushadhi patha Nischiti and sanyojan (formulation composition), dose, anupana and method of administration, therapeutic efficacy and uses (indications and contra-indications), probable mode of action etc. of the following Aushadhi yogas:</p> <p>Yavagu, (Krita and Akrita), Ashtaguna manda, Laja manda, Peya, Vilepi, Krishara, Yusha, Mudga yusha, Kulattha yusha, Saptamushtika yusha, Khada, Kambalika, Raga, Shadava, Mamsarasa, Veshavara, Dadhi, Katvar Dadhi, Dadhi Mastu, Takra, Ghola, Udasvita, Mathita, Chhacchika etc.</p>	%	
9	<p><b>Churna-Part B:</b></p> <p>Detailed knowledge of Aushadhi patha Nischiti and sanyojan (formulation composition), dose, anupana and method of administration, therapeutic efficacy and uses (indications and contra-indications), probable mode of action etc. of the following Aushadhi yogas:</p> <p>Sitopaladi Churna, Talisadi Churna, Triphala Churna, Hingvashtaka Churna, Avipattikara Churna, Swadishta Virechana Churna, Bhaskar Lavana Churna, Sudarshana Churna, Maha Sudarshana Churna, Gandharva Haritaki Churna, Pushyanuga Churna, Ajamodadi Churna, Hingvadi Churna, Eladi Churna, Dadimashtaka Churna, Trikatu Churna, Vaishwanara Churna, Gangadhara Churna, Jati phaladi Churna, Narayana Churna etc.</p>	%	
10	<p><b>Gutika-Part B:</b></p> <p>Detailed knowledge of Aushadhi patha Nischiti and sanyojan (formulation composition), dose, anupana and method of administration, therapeutic efficacy and uses (indications and contra-indications), probable mode of action etc. of the following Aushadhi yogas:</p> <p>Arogya vardhani vati, Chandra prabha vati, Chitrakadi Gutika, Sanjivani Vati, Lasunadi vati, Lavangadi Vati, Vyoshadi vati, Khadiradi Vati, Kankayana Vati, Abhayadi modaka, Marichyadi gutika, Amalakyadi gutika, Samshamini Vati, Kutaja Ghana vati, Amarasundari Vati, Shiva Gutika, Eladi Vati, Kasturyadi Gutika, Arshoghni Vati.</p>	%	

11	<p><b>Guggulu-Part B:</b></p> <p>Detailed knowledge of Aushadhi patha Nischiti and sanyojan (formulation composition), dose, anupana and method of administration, therapeutic efficacy and uses (indications and contra-indications), probable mode of action etc. of the following Aushadhi yogas:</p> <p>Yogaraja Guggulu, Maha yogaraja Guggulu, Trayodashanga Guggulu, Kanchanara Guggulu, Rasnadi Guggulu, Triphala Guggulu, Simhanada Guggulu, Gokshuradi Guggulu, Kaishora Guggulu, Panchatikta Guggulu, Amritadi Guggulu, Vatari Guggulu, Lakshadi Guggulu, Abha Guggulu, Navaka Guggulu, Nava Karshika Guggulu</p>	%	
12	<p><b>Sneha Kalpa-Part B:</b></p> <p>Detailed knowledge of Aushadhi patha Nischiti and sanyojan (formulation composition), dose, anupana and method of administration, therapeutic efficacy and uses (indications and contra-indications), probable mode of action etc. of the following Aushadhi yogas:</p> <p>Sneha Moorchhana - Ghrita Murchana, Taila Murchhana Siddha Ghrita - Shatavari Ghrita, Jatyadi Ghrita, Phala Ghrita, Dadimadi Ghrita, Kshirashatpala Ghrita, Mahatriphala Ghrita, Dhanvantari Ghrita, Amritaprasha Ghrita, Kalyanaka Ghrita, Brahmi Ghrita, Changeri Ghrita, Panchatikta Ghrita, Sukumara Ghrita, Panchagavya Ghrita Siddha Taila - Maha Narayana Taila, Maha Masha Taila, Bala Taila, Nirgundi Taila, Shadbindu Taila, Vishagarbha Taila, Sahacharadi Taila, Jatyadi Taila, Apamarga Kshara Taila, Tuvaraka Taila, Kshirabala Taila (Avartita), Lakshadi Taila, Anu Taila, Kumkumadi Taila, Hingutriguna Taila, Kottumchukadi Taila, Prasariyadi Taila, Dhanwantari Taila, Balashwagandhadi Taila, Balaguduchyadi Taila, Nilibhringyadi Taila, Brihadavadi Taila, Irimedadi Taila, Chandanadi Taila, Panchaguna taila, Arka taila, Pinda Taila, Kasisadya Taila</p>	%	
13	<p><b>Rasakriya, Avaleha, Khanda etc.-Part B:</b></p> <p>Detailed knowledge of Aushadhi patha Nischiti and sanyojan (formulation composition), dose, anupana and method of administration, therapeutic efficacy and uses (indications and contra-indications), probable mode of action etc. of the following Aushadhi yogas:</p> <p>Darvi Rasakriya, Vasa Avaleha, Brahma rasayana, Chyavanprasha Avaleha, Kushmanda Avaleha, Dadima Avaleha, Bilvadi Avaleha, Kantakaryavaleha, Haridra Khanda, Narikela khanda, Saubhagya shunthi paka, Amrita Bhallataka, Kamsa Haritaki, Chitraka Haritaki, Vyaghri Haritaki, Bahushala Guda, Kalyana Guda</p>	%	

14	<p><b>Sandhana Kalpa-Part B:</b></p> <p>Detailed knowledge of Aushadhi patha Nischiti and sanyojan (formulation composition), dose, anupana and method of administration, therapeutic efficacy and uses (indications and contra-indications), probable mode of action etc. of the following Aushadhi yogas:</p> <p>Lodhrasava, Kumaryasava, Ushirasava, Chandanasava, Kanakasava, Sarivadyasava, Pippalyasava, Lohasava, Vasakasava, Kutajarishta, Draksharishta, Raktamitrarka, Dashamularishta, Abhayarishta, Amritarishta, Ashokarishta, Sarasvatarishta, Arjunarishta, Khadirarishta, Ashwagandha Arishta, Vidangarishta, Takrarishta, Mahadrakshasava, Mritasanjivani sura, Maireya, Varuni, Sidhu, Kanji, Dhanyamla, Madhu Shukta, Pindasava</p>	%	
15	<p><b>Any Kalpa-Part B:</b></p> <p>Detailed knowledge of Aushadhi patha Nischiti and sanyojan (formulation composition), dose, anupana and method of administration, therapeutic efficacy and uses (indications and contra-indications), probable mode of action etc. of the following Aushadhi yogas:</p> <p>Phala varti, Chandrodaya varti, Arka lavana, Narikela lavana, Triphala masi, Apamarga kshara, Snuhi kshara, Ksharasutra, Atasi upanaha, Sarjarasa malahara, Gandhaka malahara, Sindhuradi Malahara, Shatadhouta Ghrita, Sahasra Dhouta Ghrita, Siktha taila, Dashanga lepa, Doshaghna lepa, Bhallataka taila patana, Jyotishmati Taila, Bakuchi Taila, Dashanga dhupa, Arshoghna dhupa, Nishadi Netra bindu, Madhutailika Basti, Piccha Basti, Yapana Basti</p>	%	

**\*Continuous Evaluation:**

It consists of Assignments/Seminars/Presentations/Quizzes/Surprise Tests (Summative/MCQ) etc.

# PARUL UNIVERSITY - FACULTY OF AYURVED

Department of Ayurved

## SYLLABUS FOR 2nd Year MS/MD PROGRAMME

Rasashastra Evum Bhaishajya Kalpana - Pharmacology and Pharmacy Management - Paper 4  
(02205204)

Type of Course: MS/MD

Prerequisite:

Rationale:

Teaching and Examination Scheme:

Teaching Scheme			Credit	Examination Scheme					Total
Lect Hrs/ Year	Tut Hrs/ Week	Lab Hrs/ Year		External		Internal			
				T	P	T	CE	P	
100	-	100	-	100	-	-	-	-	100

Lect - Lecture, Tut - Tutorial, Lab - Lab, T - Theory, P - Practical, CE - CE, T - Theory, P - Practical

Contents:

Sr.	Topic	Weightage	Teaching Hrs.
1	<b>General Pharmacology-Part A:</b> a) Principles of Pharmacology, Pharmacodynamics & Pharmacokinetics: Absorption, distribution, Metabolism & excretion, mechanism of action, dose determination and dose response, structure activity relationship. b) Routes of drug administration c) Factors modifying drug effect, Bioavailability and Bioequivalence, drug interactions, adverse drug reaction and drug toxicity d) Preclinical evaluation: experimental pharmacology [bioassay, in vitro, in vivo, cell line studies] animal ethics.	%	
2	<b>Clinical pharmacology-Part A:</b> Evaluation of New Chemical Entity – phases and methods of clinical research. Ethics involved in human research.	%	
3	<b>Elemental constituents-Part A:</b> Elemental constituents of human body and its physiological importance. Deficiencies and excess of various elements (micro-nutrients)	%	
4	<b>Toxicity of heavy metals and chelation therapy-Part A:</b> Toxicity of heavy metals and chelation therapy.	%	
5	<b>Knowledge of toxicity and pharmacological activities of herbo-mineral compounds-Part A:</b> Knowledge of toxicity and pharmacological activities of herbo-mineral compounds	%	

6	<b>Pharmacovigilance-Part A:</b> Detailed Knowledge of Pharmacovigilance – National and International Scenario. Pharmacovigilance of Ayurvedic Drugs	%	
7	<b>Scope and evolution of pharmacy. Information resources in pharmacy and pharmaceutical Science-Part B:</b> Scope and evolution of pharmacy. Information resources in pharmacy and pharmaceutical Science	%	
8	<b>Pharmaceutical dosage form design (Pre-formulation)-Part B:</b> Pharmaceutical dosage form design (Pre-formulation)	%	
9	<b>Packaging materials and Labeling-Part B:</b> Packaging materials and Labeling	%	
10	<b>Pharmacy management-Part B:</b> Management of pharmacy, store and inventory management, personnel management, Good Manufacturing Practices related to Ayurvedic drug industry	%	
11	<b>Pharmaceutical Marketing, product release and withdrawals-Part B:</b> Pharmaceutical Marketing, product release and withdrawals	%	
12	<b>Hospital, Dispensing and Community pharmacy-Part B:</b> Hospital, Dispensing and Community pharmacy	%	
13	<b>Patenting and Intellectual Property Rights-Part B:</b> Patenting and Intellectual Property Rights	%	
14	<b>Laws Governing Ayurvedic drugs-Part B:</b> i. Relevant regulatory provisions of Ayurvedic drugs in Drug and Cosmetics Act - 1940 and Rules - 1945 ii. Laws pertaining to Drugs and Magic remedies (Objectionable Advertisement) Act - 1954. iii. Prevention of Food Adulteration (PFA) act. iv. Food Standards and Safety Act - 2006 v. Laws pertaining to Narcotics vi. Factory and Pharmacy Acts vii. Consumer Protection Act -1986	%	
15	<b>International Trade-Part B:</b> Regulatory Affairs related to International Trade and Practices of Ayurvedic Drugs	%	
16	<b>API &amp; AFI-Part B:</b> Introduction to Ayurvedic Pharmacopoeia of India, Ayurvedic Formulary of India.	%	

17	<b>Introduction to Indian Pharmacopoeia, British and United States Pharmacopoeia, Pharamcoepial Codex-Part B:</b> Introduction to Indian Pharmacopoeia, British and United States Pharmacopoeia, Pharamcoepial Codex	%	
18	<b>Introduction to Traditional Knowledge Digital Library-Part B:</b> Introduction to Traditional Knowledge Digital Library	%	

**\*Continuous Evaluation:**

It consists of Assignments/Seminars/Presentations/Quizzes/Surprise Tests (Summative/MCQ) etc.