

CHEM 1515 - General Chemistry 1

Fall 2026 Syllabus, Section 01, CRN 40701,

Credit hours: 3

Instructor

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Blackboard message board.

Preferred Contact Method: Email preferred.

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Course Description

1515. General Chemistry 1. An introduction to the fundamental principles of chemistry, including measurement and calculation; chemical stoichiometry; the properties of gases; atomic and molecular structure; bonding; thermochemistry; and periodic properties. Intended for majors in the natural sciences and engineering. Three hours lecture. Prereq.: "C" or better in CHEM 1501 or equivalent and "C" or better in MATH 1513 or "C" or better in MATH 1510 or "C" or better in MATH 1510C. Coreq.: CHEM 1515L. 3 s.h.

Course Readings

Group	Title	Author	ISBN
Required	Chemistry, A Molecular Approach, 6th Edition	N. Tro	9780137832217

The course readings are subject to change in the event of extenuating circumstances, research developments, current events, and/or to ensure better learning.

Schedule of Topics and Assignments

Day	Date	Reading(s)	Proposed Topic	Due/To Prepare for Class
Mon	8/24	Chapter 1	Introduction; Measurement, Significant Figures	Suggested Exercises: 1:33,37,41,45,47,53,57,59,61,71,81,85,87,89,91,93,95,101,103,105,107,109,111,113,115,117,119,121,123,125,127,129,131,133,135,137,139,141,143,145,147,149,151,153,155,157,159,161,163,165,167,169,171,173,175,177,179,181,183,185,187,189,191,193,195,197,199,201,203,205,207,209,211,213,215,217,219,221,223,225,227,229,231,233,235,237,239,241,243,245,247,249,251,253,255,257,259,261,263,265,267,269,271,273,275,277,279,281,283,285,287,289,291,293,295,297,299,301,303,305,307,309,311,313,315,317,319,321,323,325,327,329,331,333,335,337,339,341,343,345,347,349,351,353,355,357,359,361,363,365,367,369,371,373,375,377,379,381,383,385,387,389,391,393,395,397,399,401,403,405,407,409,411,413,415,417,419,421,423,425,427,429,431,433,435,437,439,441,443,445,447,449,451,453,455,457,459,461,463,465,467,469,471,473,475,477,479,481,483,485,487,489,491,493,495,497,499,501,503,505,507,509,511,513,515,517,519,521,523,525,527,529,531,533,535,537,539,541,543,545,547,549,551,553,555,557,559,561,563,565,567,569,571,573,575,577,579,581,583,585,587,589,591,593,595,597,599,601,603,605,607,609,611,613,615,617,619,621,623,625,627,629,631,633,635,637,639,641,643,645,647,649,651,653,655,657,659,661,663,665,667,669,671,673,675,677,679,681,683,685,687,689,691,693,695,697,699,701,703,705,707,709,711,713,715,717,719,721,723,725,727,729,731,733,735,737,739,741,743,745,747,749,751,753,755,757,759,761,763,765,767,769,771,773,775,777,779,781,783,785,787,789,791,793,795,797,799,801,803,805,807,809,811,813,815,817,819,821,823,825,827,829,831,833,835,837,839,841,843,845,847,849,851,853,855,857,859,861,863,865,867,869,871,873,875,877,879,881,883,885,887,889,891,893,895,897,899,901,903,905,907,909,911,913,915,917,919,921,923,925,927,929,931,933,935,937,939,941,943,945,947,949,951,953,955,957,959,961,963,965,967,969,971,973,975,977,979,981,983,985,987,989,991,993,995,997,999,1001,1003,1005,1007,1009,1011,1013,1015,1017,1019,1021,1023,1025,1027,1029,1031,1033,1035,1037,1039,1041,1043,1045,1047,1049,1051,1053,1055,1057,1059,1061,1063,1065,1067,1069,1071,1073,1075,1077,1079,1081,1083,1085,1087,1089,1091,1093,1095,1097,1099,1101,1103,1105,1107,1109,1111,1113,1115,1117,1119,1121,1123,1125,1127,1129,1131,1133,1135,1137,1139,1141,1143,1145,1147,1149,1151,1153,1155,1157,1159,1161,1163,1165,1167,1169,1171,1173,1175,1177,1179,1181,1183,1185,1187,1189,1191,1193,1195,1197,1199,1201,1203,1205,1207,1209,1211,1213,1215,1217,1219,1221,1223,1225,1227,1229,1231,1233,1235,1237,1239,1241,1243,1245,1247,1249,1251,1253,1255,1257,1259,1261,1263,1265,1267,1269,1271,1273,1275,1277,1279,1281,1283,1285,1287,1289,1291,1293,1295,1297,1299,1301,1303,1305,1307,1309,1311,1313,1315,1317,1319,1321,1323,1325,1327,1329,1331,1333,1335,1337,1339,1341,1343,1345,1347,1349,1351,1353,1355,1357,1359,1361,1363,1365,1367,1369,1371,1373,1375,1377,1379,1381,1383,1385,1387,1389,1391,1393,1395,1397,1399,1401,1403,1405,1407,1409,1411,1413,1415,1417,1419,1421,1423,1425,1427,1429,1431,1433,1435,1437,1439,1441,1443,1445,1447,1449,1451,1453,1455,1457,1459,1461,1463,1465,1467,1469,1471,1473,1475,1477,1479,1481,1483,1485,1487,1489,1491,1493,1495,1497,1499,1501,1503,1505,1507,1509,1511,1513,1515,1517,1519,1521,1523,1525,1527,1529,1531,1533,1535,1537,1539,1541,1543,1545,1547,1549,1551,1553,1555,1557,1559,1561,1563,1565,1567,1569,1571,1573,1575,1577,1579,1581,1583,1585,1587,1589,1591,1593,1595,1597,1599,1601,1603,1605,1607,1609,1611,1613,1615,1617,1619,1621,1623,1625,1627,1629,1631,1633,1635,1637,1639,1641,1643,1645,1647,1649,1651,1653,1655,1657,1659,1661,1663,1665,1667,1669,1671,1673,1675,1677,1679,1681,1683,1685,1687,1689,1691,1693,1695,1697,1699,1701,1703,1705,1707,1709,1711,1713,1715,1717,1719,1721,1723,1725,1727,1729,1731,1733,1735,1737,1739,1741,1743,1745,1747,1749,1751,1753,1755,1757,1759,1761,1763,1765,1767,1769,1771,1773,1775,1777,1779,1781,1783,1785,1787,1789,1791,1793,1795,1797,1799,1801,1803,1805,1807,1809,1811,1813,1815,1817,1819,1821,1823,1825,1827,1829,1831,1833,1835,1837,1839,1841,1843,1845,1847,1849,1851,1853,1855,1857,1859,1861,1863,1865,1867,1869,1871,1873,1875,1877,1879,1881,1883,1885,1887,1889,1891,1893,1895,1897,1899,1901,1903,1905,1907,1909,1911,1913,1915,1917,1919,1921,1923,1925,1927,1929,1931,1933,1935,1937,1939,1941,1943,1945,1947,1949,1951,1953,1955,1957,1959,1961,1963,1965,1967,1969,1971,1973,1975,1977,1979,1981,1983,1985,1987,1989,1991,1993,1995,1997,1999,2001,2003,2005,2007,2009,2011,2013,2015,2017,2019,2021,2023,2025,2027,2029,2031,2033,2035,2037,2039,2041,2043,2045,2047,2049,2051,2053,2055,2057,2059,2061,2063,2065,2067,2069,2071,2073,2075,2077,2079,2081,2083,2085,2087,2089,2091,2093,2095,2097,2099,2101,2103,2105,2107,2109,2111,2113,2115,2117,2119,2121,2123,2125,2127,2129,2131,2133,2135,2137,2139,2141,2143,2145,2147,2149,2151,2153,2155,2157,2159,2161,2163,2165,2167,2169,2171,2173,2175,2177,2179,2181,2183,2185,2187,2189,2191,2193,2195,2197,2199,2201,2203,2205,2207,2209,2211,2213,2215,2217,2219,2221,2223,2225,2227,2229,2231,2233,2235,2237,2239,2241,2243,2245,2247,2249,2251,2253,2255,2257,2259,2261,2263,2265,2267,2269,2271,2273,2275,2277,2279,2281,2283,2285,2287,2289,2291,2293,2295,2297,2299,2301,2303,2305,2307,2309,2311,2313,2315,2317,2319,2321,2323,2325,2327,2329,2331,2333,2335,2337,2339,2341,2343,2345,2347,2349,2351,2353,2355,2357,2359,2361,2363,2365,2367,2369,2371,2373,2375,2377,2379,2381,2383,2385,2387,2389,2391,2393,2395,2397,2399,2401,2403,2405,2407,2409,2411,2413,2415,2417,2419,2421,2423,2425,2427,2429,2431,2433,2435,2437,2439,2441,2443,2445,2447,2449,2451,2453,2455,2457,2459,2461,2463,2465,2467,2469,2471,2473,2475,2477,2479,2481,2483,2485,2487,2489,2491,2493,2495,2497,2499,2501,2503,2505,2507,2509,2511,2513,2515,2517,2519,2521,2523,2525,2527,2529,2531,2533,2535,2537,2539,2541,2543,2545,2547,2549,2551,2553,2555,2557,2559,2561,2563,2565,2567,2569,2571,2573,2575,2577,2579,2581,2583,2585,2587,2589,2591,2593,2595,2597,2599,2601,2603,2605,2607,2609,2611,2613,2615,2617,2619,2621,2623,2625,2627,2629,2631,2633,2635,2637,2639,2641,2643,2645,2647,2649,2651,2653,2655,2657,2659,2661,2663,2665,2667,2669,2671,2673,2675,2677,2679,2681,2683,2685,2687,2689,2691,2693,2695,2697,2699,2701,2703,2705,2707,2709,2711,2713,2715,2717,2719,2721,2723,2725,2727,2729,2731,2733,2735,2737,2739,2741,2743,2745,2747,2749,2751,2753,2755,2757,2759,2761,2763,2765,2767,2769,2771,2773,2775,2777,2779,2781,2783,2785,2787,2789,2791,2793,2795,2797,2799,2801,2803,2805,2807,2809,2811,2813,2815,2817,2819,2821,2823,2825,2827,2829,2831,2833,2835,2837,2839,2841,2843,2845,2847,2849,2851,2853,2855,2857,2859,2861,2863,2865,2867,2869,2871,2873,2875,2877,2879,2881,2883,2885,2887,2889,2891,2893,2895,2897,2899,2901,2903,2905,2907,2909,2911,2913,2915,2917,2919,2921,2923,2925,2927,2929,2931,2933,2935,2937,2939,2941,2943,2945,2947,2949,2951,2953,2955,2957,2959,2961,2963,2965,2967,2969,2971,2973,2975,2977,2979,2981,2983,2985,2987,2989,2991,2993,2995,2997,2999,3001,3003,3005,3007,3009,3011,3013,3015,3017,3019,3021,3023,3025,3027,3029,3031,3033,3035,3037,3039,3041,3043,3045,3047,3049,3051,3053,3055,3057,3059,3061,3063,3065,3067,3069,3071,3073,3075,3077,3079,3081,3083,3085,3087,3089,3091,3093,3095,3097,3099,3101,3103,3105,3107,3109,3111,3113,3115,3117,3119,3121,3123,3125,3127,3129,3131,3133,3135,3137,3139,3141,3143,3145,3147,3149,3151,3153,3155,3157,3159,3161,3163,3165,3167,3169,3171,3173,3175,3177,3179,3181,3183,3185,3187,3189,3191,3193,3195,3197,3199,3201,3203,3205,3207,3209,3211,3213,3215,3217,3219,3221,3223,3225,3227,3229,3231,3233,3235,3237,3239,3241,3243,3245,3247,3249,3251,3253,3255,3257,3259,3261,3263,3265,3267,3269,3271,3273,3275,3277,3279,3281,3283,3285,3287,3289,3291,3293,3295,3297,3299,3301,3303,3305,3307,3309,3311,3313,3315,3317,3319,3321,3323,3325,3327,3329,3331,3333,3335,3337,3339,3341,3343,3345,3347,3349,3351,3353,3355,3357,3359,3361,3363,3365,3367,3369,3371,3373,3375,3377,3379,3381,3383,3385,3387,3389,3391,3393,3395,3397,3399,3401,3403,3405,3407,3409,3411,3413,3415,3417,3419,3421,3423,3425,3427,3429,3431,3433,3435,3437,3439,3441,3443,3445,3447,3449,3451,3453,3455,3457,3459,3461,3463,3465,3467,3469,3471,3473,3475,3477,3479,3481,3483,3485,3487,3489,3491,3493,3495,3497,3499,3501,3503,3505,3507,3509,3511,3513,3515,3517,3519,3521,3523,3525,3527,3529,3531,3533,3535,3537,3539,3541,3543,3545,3547,3549,3551,3553,3555,3557,3559,3561,3563,3565,3567,3569,3571,3573,3575,3577,3579,3581,3583,3585,3587,3589,3591,3593,3595,3597,3599,3601,3603,3605,3607,3609,3611,3613,3615,3617,3619,3621,3623,3625,3627,3629,3631,3633,3635,3637,3639,3641,3643,3645,3647,3649,3651,3653,3655,3657,3659,3661,3663,3665,3667,3669,3671,3673,3675,3677,3679,3681,3683,3685,3687,3689,3691,3693,3695,3697,3699,3701,3703,3705,3707,3709,3711,3713,3715,3717,3719,3721,3723,3725,3727,3729,3731,3733,3735,3737,3739,3741,3743,3745,3747,3749,3751,3753,3755,3757,3759,3761,3763,3765,3767,3769,3771,3773,3775,3777,3779,3781,3783,3785,3787,3789,3791,3793,3795,3797,3799,3801,3803,3805,3807,3809,3811,3813,3815,3817,3819,3821,3823,3825,3827,3829,3831,3833,3835,3837,3839,3841,3843,3845,3847,3849,3851,3853,3855,3857,3859,3861,3863,3865,3867,3869,3871,3873,3875,3877,3879,3881,3883,3885,3887,3889,3891,3893,3895,3897,3899,3901,3903,3905,3907,3909,3911,3913,3915,3917,3919,3921,3923,3925,3927,3929,3931,3933,3935,3937,3939,3941,3943,3945,3947,3949,3951,3953,3955,3957,3959,3961,3963,3965,3967,3969,3971,3973,3975,3977,3979,3981,3983,3985,3987,3989,3991,3993,3995,3997,3999,4001,4003,4005,4007,4009,4011,4013,4015,4017,4019,4021,4023,4025,4027,4029,4031,4033,4035,4037,4039,4041,4043,4045,4047,4049,4051,4053,4055,4057,4059,4061,4063,4065,4067,4069,4071,4073,4075,4077,4079,4081,4083,4085,4087,4089,4091,4093,4095,4097,4099,4101,4103,4105,4107,4109,4111,4113,4115,4117,4119,4121,4123,4125,4127,4129,4131,4133,4135,4137,4139,4141,4143,4145,4147,4149,4151,4153,4155,4157,4159,4161,4163,4165,4167,4169,4171,4173,4175,4177,4179,4181,4183,4185,4187,4189,4191,4193,4195,4197,4199,4201,4203,4205,4207,4209,4211,4213,4215,4217,4219,4221,4223,4225,4227,4229,4231,4233,4235,4237,4239,4241,4243,4245,4247,4249,4251,4253,4255,4257,4259,4261,4263,4265,4267,4269,4271,4273,4275,4277,4279,4281,4283,4285,4287,4289,4291,4293,4295,4297,4299,4301,4303,4305,4307,4309,4311,4313,4315,4317,4319,4321,4323,4325,4327,4329,4331,4333,4335,4337,4339,4341,4343,4345,4347,4349,4351,4353,4355,4357,4359,4361,4363,4365,4367,4369,4371,4373,4375,4377,4379,4381,4383,4385,4387,4389,4391,4393,4395,4397,4399,4401,4403,4405,4407,4409,4411,4413,4415,4417,4419,4421,4423,4425,4427,4429,4431,4433,4435,4437,4439,4441,4443,4445,4447,4449,4451,4453,4455,4457,4459,4461,4463,4465,4467,4469,4471,4473,4475,4477,4479,4481,4483,4485,4487,4489,4491,4493,4495,4497,4499,4501,4503,4505,4507,4509,4511,4513,4515,4517,4519,4521,4523,4525,4527,4529,4531,4533,4535,4537,4539,4541,4543,4545,4547,4549,4551,4553,4555,4557,4559,4561,4563,4565,4567,4569,4571,4573,4575,4577,4579,4581,4583,4585,4587,4589,4591,4593,4595,4597,4599,4601,4603,

Wed	9/9	Chapter 3	Nomenclature	Suggested Exercises: 3:29,31,35,37,39,43,45,47,53,55,67,69,71,75,79,89,97,103
Fri	9/11	Chapter 3	Nomenclature, Formula Mass, Mole	
Mon	9/14	Chapter 3	Mole, % Composition	
Wed	9/16	Chapter 3/4	Balancing Reactions, Stoichiometry	
Fri	9/18	Chapter 4	Stoichiometry	Suggested Exercises: 4:25,29,31,43,47,51,53
Mon	9/21	Chapter 4	Limiting Reagents, % Yield	
Wed	9/23	Chapter 5	Reactions, Electrolytes, Molarity	Suggested Exercises: 5:21,25,27,29,31,37,39,45,55,69,73
Fri	9/25		EXAM 1: Chapters 1, 2, 3, 4	
Mon	9/28	Chapter 5	Oxidation/Reduction, Titration	
Wed	9/30	Chapter 6	Gases, Pressure	Suggested Exercises: 6:33,37,43,45,59,61,65,79,81,89,107
Fri	10/2	Chapter 6	Gas Laws, Ideal Gases	
Mon	10/5	Chapter 6	Gas Density, Mole Fraction, Partial Pressure	
Wed	10/7	Chapter 6	Kinetic-Molecular Theory	
Fri	10/9	Chapter 6	Effusion, Real Gases	
Mon	10/12	Chapter 7	Thermochemistry, Systems	Suggested Exercises: 7:43,49,65,69,81,85,87,89,91
Wed	10/14	Chapter 7	Calorimetry, Enthalpy	
Fri	10/16	Chapter 7	Enthalpy, Heats of Formation, Hess' Law	
Mon	10/19	Chapter 8	Light, Electromagnetic Radiation, Bohr Model	Suggested Exercises: 8:39,41,47,59,61,63,65
Wed	10/21	Chapter 8	H-atom, Orbitals	
Fri	10/23		EXAM 2: Chapters 5, 6, 7	
Mon	10/26	Chapter 8	Orbitals, Quantum numbers	
Wed	10/28	Chapter 8	Quantum numbers, Electron Configurations	
Fri	10/30	Chapter 8	Electron Configurations, Aufbau principle	
Mon	11/2	Chapter 8/9	Ground/Excited State, Periodic Trends	
Wed	11/4	Chapter 9	Periodic Trends, Bonding	Suggested Exercises: 9:39,41,47,51,53,63,65,69,73,75,79,99
Fri	11/6	Chapter 10	Lewis Symbols, Lewis Structures, Octet Rule	Suggested Exercises: 10:37,39,55,57,63,79
Mon	11/9	Chapter 10	Lewis Structures, Electronegativity, Polarity	
Wed	11/11	No Class		
Fri	11/13	Chapter 10	Formal Charge, Bond Enthalpy	
Mon	11/16	Chapter 11	VSEPR Theory, Molecular Geometry	Suggested Exercises: 11:35,39,41,47,49,59,61
Wed	11/18	Chapter 11	Molecular Geometry, Polarity	
Fri	11/20		EXAM 3: Chapters 8, 9, 10	
Mon	11/23	Chapter 11	Molecular Geometry, Polarity	
Wed	11/25	No Class		
Fri	11/27	No Class		
Mon	11/30	Chapter 11	Valance-Bond Theory, Hybridization	
Wed	12/2	Chapter 11	Molecular Orbital Theory	
Fri	12/4		Review	
Mon	12/7	No Class		
Wed	12/9	No Class		
Fri	12/11	8:00 - 10:00 a.m.	Final Exam (Comprehensive)	

The course schedule, policies, procedures, and assignments in this course are subject to change in the event of extenuating circumstances, by mutual agreement, and/or to ensure better learning.