CALL TO ORDER

AGENDA MODIFICATIONS (Information)
This item allows for items to be removed from the Agenda or for items to be considered in a different order than they are presented in the published document. It is also an opportunity for both the Chair and the members to indicate an interest in pulling Items off the Consent Agenda to be considered separately. Items on the Consent Agenda are considered routine matters of business.

APPROVAL OF MINUTES: (Consent/Information)
November 4, 2019 minutes

CHAIR’S REPORT: (Action/Information)
- Updated information concerning the policy on course deactivation
- Information brief concerning the CCCC0 Periodic Curriculum Review

ARTICULATION UPDATES
None

SELECTED TOPICS (Consent/Action)
None

MINOR REVISIONS (Consent/Information)

INT-106 Discourse Analysis: ASL – Tom Holcomb
Change field trips to May be Required. Change catalog description: This course is an overview of ASL discourse. Topics include discourse structure, language variation, genre, register, prosody, cohesion, turn-taking and back channeling, and gendered communication. Transcription conventions are reviewed for noting language samples. An external drive (USB) is required for the course to document students’ ASL work. Change class schedule description: This course provides an overview of ASL discourse including language variation, register, prosody, and cohesion. An external drive (USB) is required for the course to document students’ ASL work. Revise counselor information; course assignments; textbooks.

DEACTIVATIONS: (Consent/Action)
These courses have never been taught:
- CNET-124A Virtual Desktop Administration – Citrix – Ron Sha
- CNET-124B Virtual Application Administration – Citrix – Ron Sha
- CNET-154 Computer Network Fundamentals (Network+) – Ron Sha
- CNET-168B Administering Microsoft SQL Server – Ron Sha
- CNET-168C Implementing a Data Warehouse with Microsoft SQL Server – Ron Sha

These courses have not been taught in several years:
- CNET-141 Linux System Administration II (LPI-2) – Ron Sha
- CNET-151 Systems and Network Administration – Ron Sha
- CNET-158 Wireless Networks – Ron Sha
- CNET-167 Microsoft Exchange Server – Ron Sha
- CNET-168A Querying Microsoft SQL Server – Ron Sha
- CNET-180 IP Telephony and VoIP Implementations – Ron Sha
- CNET-182 Advanced Routing (CCNP ROUTE) – Ron Sha
- CNET-184 Advanced Switching (CCNP SWITCH) – Ron Sha
- CNET-186 Troubleshooting IP Networks (CCNP TSHOOT) – Ron Sha
SUBCOMMITTEE APPROVALS/REPORTS

Distance Education Subcommittee (Action)

DE Update – Robin Kurotori, Distance Education Subcommittee Chair
   • OEI
   • Online Cheating
   • Flex Week

Approved for Hybrid and Fully Online:
CS-145 PHP Programming with MySQL – David Topham
CNET-145 PERL Programming – Ron Sha
CS-149/ TCP/IP and Internetworking – David Topham
CNET-149
CS-157/
CNET-157

Approved for Hybrid Only:
MATH-101A Calculus with Analytic Geometry
MATH-101B Calculus with Analytic Geometry
MATH-103 Introduction to Linear Algebra
MATH-152 Algebra II
MM-122 Digital Sculpting

General Education Subcommittee (Action)

GE Update – Wayne Yuen, General Education Subcommittee Chair
   • Area IVB and Area VI

Reaffirmations:
   • Area I, Natural Sciences: ENVS-108
   • Area II, Social and Behavioral Sciences: ENVS-108
   • Area IIIB, Humanities and Participatory Arts: MM-105
   • Area VA, Physical Education: PE-300A2, PE-300C2
   • Area VB, Wellness: HLTH-101

New Approvals:
   • Area VA, Physical Education: TD-148B2

Deny Reaffirmations: None

Deny New Approval: None

Remove from Plan A: None

Student Learning Outcomes and Assessment

None
COURSE REACTIVATION (Consent/Action)
None

MAJOR COURSE REVISIONS (Consent/Action)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Instructor</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>AJ-228A7</td>
<td>Basic Police Academy Modular Level II – Libby Flores</td>
<td>Change units from 5.0 to 7.0. Change lecture hours from 36.00 to 63.00. Change lab hours from 180.00 to 216.00. Change course number from AJ-228A5 to AJ-228A7. Change catalog description: This course is certified by the Commission on Peace Officer Standards and Training (POST) and meets the content and hour requirements established by POST for Level II Reserve Peace Officers. This course, combined with Level I and Level III certificates, meets the regular basic academy requirements. This course covers report writing, controlled substance, laws of arrest, use of force, and patrol techniques, as well as additional POST learning domains.</td>
<td>Libby Flores</td>
</tr>
<tr>
<td>GEOG-101</td>
<td>Physical Geography – Narinder Bansal</td>
<td>Change grading option from GC to GR. Change field trips to Not Required. Change class schedule description: This course covers people and their environment; and the features of climate, land forms, soil, vegetation, water, and environmental issues. Revise student learning outcomes; course assignments; methods of evaluation; textbooks.</td>
<td>Narinder Bansal</td>
</tr>
<tr>
<td>PSY-101</td>
<td>General Psychology – Sarah Cooper</td>
<td>Change catalog description: Psychology is the scientific study of behavior and mental processes. Students explore the major concepts, theoretical perspectives, research methods, core empirical findings, and historic trends in psychology. Topics include research methods, neuroscience, sensation and perception, consciousness, learning, memory, motivation and emotion, lifespan development, personality, social psychology, applied psychology, disorders and therapies. Change class schedule description: This course introduces the scientific study of behavior and mental processes. Revise student learning outcomes; course assignments; methods of evaluation; textbooks.</td>
<td>Sarah Cooper</td>
</tr>
<tr>
<td>PSY-120</td>
<td>Biological Psychology – Sarah Cooper</td>
<td>Change catalog description: This course introduces the scientific study of the biological bases of behavior and its fundamental role in the neurosciences. Physiological, hormonal, and neurochemical mechanisms and brain-behavior relationships underlying the psychological phenomena of sensation, perception, regulatory processes, emotion, learning, memory, and psychological disorders are addressed. The course also notes historical scientific contributions and current research principles for studying brain-behavior relationships and mental processes. Ethical standards for human and animal research are discussed in the context of both invasive and non-invasive experimental research. Change class schedule description: This course focuses on the role of biology (particularly the physiological, hormonal, and neurochemical systems) in producing behavior and mental processes. Revise student learning outcomes; course objectives; course content; course assignments; methods of evaluation; methods of instruction; textbooks.</td>
<td>Sarah Cooper</td>
</tr>
<tr>
<td>TD-121A</td>
<td>Dance Rehearsal and Performance – Janel Tomblin-Brown</td>
<td>Change Advisory to Concurrent enrollment in a dance technique class. Change catalog description: This course provides an educational setting for a large-scale dance performance experience. Students learn the ins and outs of a theatrical dance performance. Students, regardless of skill level, are given the opportunity to perform on stage in a professional setting with the security of an educational environment. Change class schedule description: Students have the opportunity to learn, rehearse, and perform dance(s) on stage. Revise student learning outcomes; course content; course assignments; methods of evaluation.</td>
<td>Janel Tomblin-Brown</td>
</tr>
<tr>
<td>TD-121B</td>
<td>Dance Rehearsal and Performance – Janel Tomblin-Brown</td>
<td>Change Advisory to Concurrent enrollment in a dance technique class. Change catalog description: This course provides an educational setting for large-scale dance performance. Students learn the ins and outs of a theatrical dance performance. Students, regardless of skill level, are given the opportunity to perform on stage in a professional setting with the security of an educational environment. Change class schedule description: Students have the opportunity to learn, rehearse, and perform dance(s) on stage.</td>
<td>Janel Tomblin-Brown</td>
</tr>
</tbody>
</table>
All skill levels welcome. Revise student learning outcomes; course content; course assignments; methods of evaluation.

**TD-121C Dance Rehearsal and Performance – Janel Tomblin-Brown**
Change Advisory to Concurrent enrollment in a dance technique class. Change catalog description: This course provides an educational setting for large-scale dance performance. Students learn the ins and outs of a theatrical dance performance. Students, regardless of skill level, are given the opportunity to perform on stage in a professional setting with the security of an educational environment. Change class schedule description: Students have the opportunity to learn, rehearse, and perform dance(s) on stage. Revise student learning outcomes; course content; course assignments; methods of evaluation.

**TD-148A2 Introduction to Hip Hop – Janel Tomblin-Brown**
Change grading option from GR to GC. Remove advisory: Medical check within the last year. Change catalog description: Students learn basic skills of hip hop dance with emphasis on creative expression, strength, coordination, and rhythmic style. Revise student learning outcomes; course content; course assignments; methods of evaluation; methods of instruction.

**NEW COURSES – CREDIT (Action)**

**ANTH-110 Anthropological Field Studies – Sandra Chacko**
18.00 hours lecture
18.00 hours lab
Units: 1.00
Accepted for Credit: CSU
This course examines the four fields of anthropology through fieldwork. Through experiential learning students engage with the culture, natural history, archaeological history, and language of a specific area. This is a study abroad class; travel is required. (GC)

**NEW COURSES – NONCREDIT (Action)**
None

**REQUISITES (Action)**
None

**DEGREES/CERTIFICATES (Action)**

Deactivated Degrees and Certificates:
- Certificate of Accomplishment: Linux (LPI-1 and LPI-2)
- Certificate of Accomplishment: Linux/UNIX System Administration

Revised Degrees and Certificates:
- Certificate of Accomplishment: IT Service and Support Technician
- Certificate of Accomplishment: NSA Cybersecurity
- Certificate of Achievement: Database Administration
- Certificate of Achievement: Information Technology
- Certificate of Achievement: IT Service and Support
- Certificate of Achievement: Network Administrator
- Certificate of Achievement: System Administration
- Associate in Arts for Transfer: Geography
- Associate in Science: Database Administration
- Associate in Science: Information Technology
- Associate in Science: IT Service and Support
- Associate in Science: Network Administrator
- Associate in Science: System Administration

New Degrees and Certificates:
- Certificate of Accomplishment: Network Administrator
- Associate in Arts for Transfer: Environmental Science
### Deactivated Degrees and Certificates

Linux (LPI-1 and LPI-2): Certificate of Accomplishment – Ron Sha  
This certificate is no longer valid.

Linux /UNIX System Administration: Certificate of Accomplishment – Ron Sha  
This certificate is no longer valid.

### Revised Degrees and Certificates

IT Service and Support Technician: Certificate of Accomplishment – Ron Sha  
This certificate assists students in offering frontline or helpdesk support to end-users; help computer users in getting the most from their computer products; and lead users through various procedures, helping them to fix problems. This support is conducted over the telephone, one-on-one, or in a small group training session.

This certificate program introduces students to troubleshooting and customer service, networking, operating systems, system administration, and security--all the fundamentals of IT support that are critical for success in the workplace.

Certificates of accomplishment are awarded upon the completion of an organized course of study for a specific purpose, usually career or job related. Certificates of accomplishment consist of a maximum of 17.5 units and allow students to finish the program in a shorter period of time. Certificates of accomplishment are approved by Ohlone's Curriculum Committee and the Ohlone Community College Board of Trustees, but are not approved by the California Community Colleges Chancellor's Office. Therefore, per Title 5 of the California Code of Regulations (55070.b), certificates of accomplishment may not appear on a student's transcript.

In order to earn a certificate of accomplishment students must:

- a. complete satisfactorily the courses listed for the particular certificate.
- b. complete at least 50% of the required units at Ohlone College.
- c. maintain a 2.0 grade point average.

Student Learning Outcomes

1. Install a Windows operating system.
2. Configure and troubleshoot access to resources, hardware devices, and drivers; the desktop and user computing environments; and network protocols and services.
3. Demonstrate appreciation of the IT Service and Support career field and the need to be lifelong learners

**MAJOR FIELD**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CNET-105</td>
<td>IT Essentials (CompTIA A+)</td>
<td>4</td>
</tr>
<tr>
<td>CNET-142</td>
<td>Introduction to Programming with Python</td>
<td>4</td>
</tr>
<tr>
<td>CNET-146</td>
<td>Introduction to UNIX/Linux</td>
<td>3</td>
</tr>
<tr>
<td>CNET-162</td>
<td>Windows Server Installation and Configuration Administration</td>
<td>2</td>
</tr>
</tbody>
</table>

**Total Units = 13**

- Remove CNET-151 and CNET-154 so the courses can be deactivated.
- CNET-155A, CNET-160A, and CNET-160B.
- Add CNET-142, CNET-146, CNET-162.
- Change total units from 14 to 13.
NSA Cybersecurity: Certificate of Accomplishment – Ron Sha

The purpose of this certificate is to provide students with an overall view of computer and networked security. The goal of this program is to train students to be able to effectively design, implement, and support security policies for small, medium, and large scale enterprise networks. Students are exposed to a wide variety of security analysis/defensive tools, implement these tools, and then attempt to circumvent them. Upon completion of coursework, students will have the foundation needed to pursue CompTIA’s Security+ certification.

These courses are part of National Security Agency (NSA) National Center of Academic Excellence in Cyber Defense Education (CAE-CDE).

Certificates of accomplishment are awarded upon the completion of an organized course of study for a specific purpose, usually career or job related. Certificates of accomplishment consist of a maximum of 17.5 units and allow students to finish the program in a shorter period of time. Certificates of Accomplishment are approved by Ohlone's Curriculum Committee and the Ohlone Community College District Board of Trustees, but are not approved by the California Community Colleges Chancellor's Office. Therefore, per Title 5 of the California Code of Regulations (55070.b), Certificates of Accomplishment may not appear on a student's transcript.

In order to earn a certificate of accomplishment, students must:
   a. complete satisfactorily the courses listed for the particular certificate.
   b. complete at least 50% of the required units at Ohlone College.
   c. maintain a 2.0 grade point average.

Student Learning Outcomes
   1. Identify and assess security risks and potential threats to computing and networking resources.
   2. Develop effective countermeasures aimed at protecting data and computer assets.

MAJOR FIELD

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CNET-146</td>
<td>Introduction to UNIX/Linux</td>
<td>3</td>
</tr>
<tr>
<td>CNET-155A</td>
<td>Introduction to Networks (CCNA1)</td>
<td>3</td>
</tr>
<tr>
<td>CNET-162</td>
<td>Windows Server Installation and Configuration Admin</td>
<td>2</td>
</tr>
<tr>
<td>CNET-170</td>
<td>Network Security (Security+)</td>
<td>4</td>
</tr>
</tbody>
</table>

   Total Units = 12

- Change title from Cybersecurity.
- Remove CNET-172, CNET-173, CNET-174, and CNET-175.
- Add CNET-146, CNET-155A, and CNET-162.
- Change total units from 17 to 12.
Database Administration: Certificate of Achievement – Ron Sha
The Certificate of Achievement in Database Administration prepares students to either enter the workforce as an entry-level information and communication technologies (ICT) professional or to pursue a baccalaureate degree in computer science. Graduates of the Associate Degree in Database Administration are prepared and eligible to sit for Microsoft and/or Oracle certification exams. Topics addressed include database administration, Structured Query Language (SQL), programming practices, desktop databases, and information systems management. Database design, installation, programming, security, recovery, and backup are also addressed.

As the use of technology expands throughout the economy, available positions in database administration are expected to grow 9% from 2018 to 2028, according to the Bureau of Labor Statistics (www.bls.gov).

Earning this certificate of achievement is advantageous for students who already have a degree but are looking to update their existing skills. The courses required in this certificate can also be used toward the Associate in Science in Database Administration.

Requirements for certificate of achievement
a. Complete Major Field courses.
b. Complete at least six units at Ohlone College.
c. Maintain a 2.0 grade point average in Major Field courses.

Student Learning Outcomes
1. Support the data management needs of business through the design, implementation, and maintenance of relational databases.
2. Demonstrate appreciation of the ICT career field and the need to be lifelong learners.

MAJOR FIELD
CNET-135 Oracle Database Administration 2
CNET-137 Introduction to SQL 4
CNET-142 Introduction to Programming with Python 4
CNET-146 Introduction to UNIX/Linux 3
CNET-162 Windows Server Installation and Configuration Administration 2
CNET-170 Network Security (Security+) 4
Total Units = 19

Information Technology: Certificate of Achievement – Ron Sha
The Certificate of Achievement in Information Technology prepares students to either enter the workforce as an IT support technician or IT system administrator, or pursue a bachelor’s degree in managing information systems.

IT support technicians provide technical assistance to computer users. They may answer questions or resolve computer problems for clients in person, or via telephone or electronically. They may provide assistance concerning the use of computer hardware and software, including printing, installation, word processing, electronic mail, and operating systems. Computer network technicians analyze, test, troubleshoot, and evaluate existing network systems, such as local area network (LAN), wide area network (WAN), and Internet systems or a segment of a network system. They perform network maintenance to ensure networks operate correctly with minimal interruption.
Earning this certificate of achievement is advantageous for students who already have a degree but are looking to update their existing skills. The courses required in this certificate can also be used towards the Associate in Science in Information Technology.

a. Complete Major Field and Elective Courses.
b. Complete at least six units at Ohlone College.
c. Maintain a 2.0 grade point average in Major Field and Elective Courses.

Student Learning Outcomes
1. Apply fundamental knowledge of computing and the current use of technology techniques, skills, and tools necessary for the computing practice.
2. Demonstrate the ability to locate, critically evaluate, and solve business problems with technology solutions using qualitative and quantitative information.
3. Demonstrate a fundamental ability to identify and analyze user needs in the selection, creation, evaluation, and administration of computer-based systems.
4. Provide information technology technical assistance to computer and network users.
5. Demonstrate appreciation of the IT career field and the need to be lifelong learners.

MAJOR FIELD
CNET-146 Introduction to UNIX/Linux 3
CNET-155A Introduction to Networks (CCNA1) 3
CNET-162 Windows Server Installation and Configuration Administration 2
CNET-170 Network Security (Security+) 4
Total Units = 12

ELECTIVE COURSES
Complete a minimum of six units from the following courses:
CNET-105 IT Essentials (CompTIA A+) 4
CNET-108 IT Project Management 3
CNET-135 Oracle Database Administration 2
CNET-137 Introduction to SQL 4
CNET-142 Introduction to Programming with Python 4
CNET-173 Ethical Hacking 3
CNET-174 Computer Forensics 3
CNET-175 Cloud Security Fundamentals 4
Total Units = 6-9
Total Units = 18-21

- Change catalog description.
- Change requirements.
- Remove CNET-103, CNET-105, CS-101, and CS-102 from Major Field.
- Remove CNET-154 from Major Field so the course can be deactivated.
- Add CNET-145, CNET-162, and CNET-170 to Major Field.
- Change Major Field units from 13-14 to 12.
- Remove CNET-155B and CNET-170 from Elective Courses.
- Remove CNET-151 from Elective Courses so the course can be deactivated.
- Add CNET-105, CNET-142, and CNET-175 to Elective Courses.
- Change Elective Courses units from 6-8 to 6-9.
- Remove Supporting Courses.
- Change total units from 22-26 to 18-21.
IT Service and Support: Certificate of Achievement – Ron Sha

IT service and support technicians provide a single point of contact for end users to receive support and maintenance within the organization's desktop computing environment. This includes installing, diagnosing, repairing, maintaining, and upgrading all PC hardware and equipment to ensure optimal workstation performance.

Earning this certificate of achievement is advantageous for students who already have a degree but are looking to update their existing skills to enhance their current career or change to a new career. The courses required in this certificate can also be used toward the Associate in Science in IT Service and Support.

Complete Major Field and Supporting Courses.
   a. Complete at least six units at Ohlone College.
   b. Maintain a 2.0 grade point average in Major Field and Supporting Courses.

Student Learning Outcomes
   1. Demonstrate confidence to work independently to setup, configure, and maintain a desktop computer (client or server), stand-alone application, and/or computer system.
   2. Demonstrate techniques to troubleshoot situations that impact the operation of a desktop computer (client or server), stand-alone application, and/or computer system.
   3. Demonstrate appreciation of the ICT career field and the need to be lifelong learners.

Major Field
   CNET-105 IT Essentials (CompTIA A+) 4
   CNET-146 Introduction to UNIX/Linux 3
   CNET-162 Windows Server Installation and Configuration Administration 2
   CNET-170 Network Security (Security+) 4

   Total Units = 13

Supporting Courses
   Complete minimum 5 units from the following:
   CNET-104 Introduction to Emerging Technologies 3
   CNET-108 IT Project Management 3
   CNET-120 VMware: Install, Configure, Manage 2
   CNET-122A Information Storage and Management - EMC 2
   CNET-142 Introduction to Programming with Python 4
   CNET-147 Linux Shell Scripting 4
   CNET-155A Introduction to Networks (CCNA1) 3
   CNET-156B Connecting Networks (CCNA4) 2

   Total Units = 5-8
   Total Units = 18-21

- Change catalog description.
- Remove CNET-151 and CNET-154 from Major Field so the courses can be deactivated.
- Add CNET-146, CNET-162, and CNET-170 to Major Field.
- Change Major Field units from 20 to 13.
- Remove CNET-101/CS-101, CNET-152/CS-152, CNET-155B, CNET-170, CS-102, and CS-104A from Supporting Courses.
- Remove CNET-145/CS-145 and CNET-157/CS-157 from Supporting Courses so the courses can be deactivated.
- Change Supporting Courses units from 3-4 to 5-8.
- Change total units from 23-24 to 18-21.
Network Administrator: Certificate of Achievement – Ron Sha

Network administrators manage all of the day-to-day aspects of a computer network. In addition to configuring networks they are responsible for making the network operational 24 hours a day. Tasks performed include installing and configuring new equipment, including desktop PCs and servers; troubleshooting day-to-day problems and unusual issues with networked equipment; and evaluating the need for upgrades or replacements of current computer hardware and software solutions.

Network administrators manage an organization’s servers and desktop and mobile equipment. They ensure that email and data storage networks work properly. They also make sure that employees’ workstations are working efficiently and stay connected to the central computer network. Some administrators manage telecommunication networks.

Earning this certificate of achievement is advantageous for students who already have a degree but are looking to update their existing skills. The courses required in this certificate can also be used toward the Associate in Science in Network Administrator.

Requirements for Certificate of Achievement:

a. Complete Major Field courses.
b. Complete at least six units at Ohlone College.
c. Maintain a 2.0 grade point average in Major Field courses.

Student Learning Outcomes

1. Demonstrate confidence to work independently to setup, configure, and maintain a network; stand-alone or network application; and a network system.
2. Demonstrate techniques to troubleshoot situations that impact a network; stand-alone or network application; and a network system.
3. Demonstrate a basic computer programming language knowledge and skills.

MAJOR FIELD

CNET-146 Introduction to UNIX/Linux 3
CNET-155A Introduction to Networks (CCNA1) 3
CNET-162 Windows Server Installation and Configuration Administration 2
CNET-170 Network Security (Security+) 4

Complete 6-9 units from the following courses:

CNET-142 Introduction to Programming with Python 4
CNET-155B Routing and Switching Essentials (CCNA2) 3
CNET-156A Scaling Networks (CCNA3) 2
CNET-156B Connecting Networks (CCNA4) 2

Total Units = 18-21

- Change catalog description.
- Change student learning outcomes.
- Remove CNET-164, CNET-140, COMM-125, and ENGL-156 from Major Field.
- Add CNET-146 to Major Field.
- Add CNET-142, CNET-155B, CNET-156A, and CNET-156B to requirement of completing 6-9 units.
- Change total units from 21 to 18-21.
System Administration: Certificate of Achievement – Ron Sha

The Certificate of Achievement in System Administration prepares students to either enter the workforce as an entry-level information and communication technologies (ICT) professional or pursue a bachelor's degree in managing information systems. Graduates of the Certificate of Achievement in System Administration are prepared and eligible to sit for Microsoft and/or Linux certification exams. Competency in Microsoft® and/or Unix/Linux systems administration and network administration is required.

A system administrator, or “sysadmin,” is a person who is responsible for the upkeep, configuration, and reliable operation of computer systems, especially multi-user computers such as servers. The system administrator seeks to ensure that the uptime, performance, resources, and security of the computers he or she manages meet the needs of the users, without exceeding the budget. To meet these needs a system administrator may acquire, install, or upgrade computer components and software; automate routine tasks; write computer programs; troubleshoot; train and/or supervise staff; and provide technical support.

As the use of technology expands throughout the economy, available positions in system administration are expected to grow. Employment of network and computer systems administrators is expected to grow 5% from 2018 to 2028, according to the Bureau of Labor Statistics (www.bls.gov). Demand for these workers is high and should continue to grow as firms invest in newer, faster technology and mobile networks. System administrators are employed in all industry where there are computers which means majority of companies such as in the computer system design and related services industry, financial firms, hospitals and government offices.

Earning this certificate of achievement is advantageous for students who already have a degree but are looking to update their existing skills. The courses required in this certificate can also be used towards the Associate in Science in System Administration.

Requirements for certificate of achievement:
   a. Complete Major Field courses and System Administrator Focus courses.
   b. Complete at least six units at Ohlone College.
   c. Maintain a 2.0 grade point average in Major Field courses and System Administrator Focus courses.

Student Learning Outcomes
   1. Setup, configure, maintain, and troubleshoot computer systems, stand-alone application, and/or various computer operating systems (client, server, and network).
   2. Demonstrate appreciation of the ICT career field and the need to be lifelong learners.

MAJOR FIELD
CNET-146 Introduction to UNIX/Linux 3
CNET-155A Introduction to Networks (CCNA1) 3
CNET-162 Windows Server Installation and Configuration Administration 2
CNET-170 Network Security (Security+) 4
Total Units = 12

System Administrator Focus
Complete six units from the following courses:
CNET-120 VMware: Install, Configure, Manage 2
CNET-122A Information Storage and Management - EMC 2
CNET-122B Cloud Infrastructure and Services 2
CNET-135 Oracle Database Administration 2
CNET-137 Introduction to SQL 4
CNET-142 Introduction to Programming with Python 4
CNET-147 UNIX/Linux Shell Scripting 4
CNET-164 Windows Server Administration 2
CNET-172 CCNA Security 3
CNET-173 Ethical Hacking 3
CNET-174 Computer Forensics 3
CNET-175 Cloud Security Fundamentals 4

Total Units = 6
Total Units = 18

- Change catalog description.
- Add CNET-170 to Major Field.
- Remove COMM-125/ENGL-156 from Major Field.
- Move CNET-120, CNET-122A, CNET-122B, and CNET-164 from Major Field to System Administrator Focus.
- Change Major Field units from 19 to 12.
- Remove Linux System Administrator Focus and Microsoft System Administrator Focus.
- Remove CNET-140, CNET-141, CNET-166, CNET-167, CNET-168A, and CNET-168B from System Administrator Focus.
- Add CNET-135, CNET-137, CNET-142, CNET-147, CNET-164, CNET-172, CNET-173, CNET-174, and CNET-175 to System Administrator Focus.
- Change System Administrator Focus units from 8 to 6.
- Change total units from 27 to 18.

**Geography: Associate in Arts for Transfer – Narinder Bansal**

The Student Transfer Achievement Reform Act (Senate Bill 1440, now codified in California Education Code sections 66746-66749) guarantees admission to a California State University (CSU) campus for any community college student who completes an "associate degree for transfer," a newly established variation of the associate degrees traditionally offered at a California community college. The Associate in Arts in Geography for Transfer is intended for students who plan to complete a bachelor's degree in a similar major at a CSU campus. Students completing this degree are guaranteed admission to the CSU system, but not to a particular campus or major. In order to earn one of these degrees, students must complete 60 required semester units of CSU-transferable coursework with a minimum GPA of 2.0. Students should consult with a counselor when planning to complete the degree for more information on university admission and transfer requirements.

The Associate in Arts in Geography for Transfer establishes a clear pathway to transfer. Students will have received basic training in regional variations of the world, as well as human modification of the physical environment. Students will gain lab experience with map analysis, weather, and landform features, and will be educated in current theories of how different cultures use, abuse, or otherwise change the Earth. The degree offers an excellent background for careers in public policy, humanities, and environmental studies.

**Requirements for Associate in Arts Degree in Geography for Transfer**

a. Complete Required Core, List A, and List B courses with a grade of C or better.

b. Complete CSU GE (Plan B) or IGETC for CSU (Plan C) General Education requirements. These requirements are specified in the Ohlone College catalog.

c. Complete 60 CSU-transferable semester units.

d. Complete a minimum grade point average (GPA) of at least 2.0 in all CSU-transferable coursework. While a minimum GPA of 2.0 is required for admission, some majors may require a higher GPA. Please consult with a counselor for more information.

e. Complete 20 semester units in the Geography major.

f. Complete at least 12 units at Ohlone College.
Student Learning Outcomes
1. Assess the preservation of natural resources and the potential impact of societies overusing natural resources.
2. Discuss and describe the origins, diversity, and distribution of basic cultural patterns, with particular attention given to language, religion, urbanization, political and economic patterns, and human-environment interactions.

REQUIRED CORE

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOG-101</td>
<td>Physical Geography</td>
<td>4</td>
</tr>
<tr>
<td>GEOG-102</td>
<td>Cultural Geography OR</td>
<td>3</td>
</tr>
<tr>
<td>GEOG-104</td>
<td>World Regional Geography</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Total Units</td>
<td>7</td>
</tr>
</tbody>
</table>

LIST A

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOG-105</td>
<td>California Geography</td>
<td>3</td>
</tr>
<tr>
<td>GEOG-121</td>
<td>Introduction to Geographic Information Systems (GIS)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Total Units</td>
<td>6</td>
</tr>
</tbody>
</table>

LIST B

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH-102</td>
<td>Cultural Anthropology</td>
<td>3</td>
</tr>
<tr>
<td>GEOL-101</td>
<td>Introduction to Geology</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Total Units</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>Total Units</td>
<td>20</td>
</tr>
</tbody>
</table>

- Move GEOG-104 to Required Core as “or” with GEOG-102.
- Add GEOG-121 to List A.

Database Administration: Associate in Science – Ron Sha
The Associate in Science in Database Administration prepares students to either enter the workforce as an entry-level information and communication technologies (ICT) professional or pursue a baccalaureate degree in computer science. Graduates of the Associate in Science in Database Administration are prepared and eligible to sit for Microsoft and/or Oracle certification exams. Topics addressed include database administration, Structured Query Language (SQL), programming practices, desktop databases, and information systems management. Database design, installation, programming, security, recovery, and backup are also addressed.

Generally, no courses beyond a high school diploma are needed to be admitted into these programs. However, most courses recommend a background in computer science, information systems, and information and communication technologies.

Most graduates who enter the workforce work as database administrators or database associates. Other possible careers open to graduates of an associate degree in database administration include database program designer, database programmer (application developer), and database analyst.

As the use of technology expands throughout the economy, available positions in database administration are expected to grow 9% from 2018-2028, according to the Bureau of Labor Statistics (www.bls.gov).

a. Complete Major Field and Supporting Courses with a grade of C or better.
b. Complete Ohlone College General Education (Plan A), CSU GE (Plan B), or IGETC for CSU (Plan C) requirements. These requirements are specified in the Ohlone College catalog.
c. Complete at least 60 degree-applicable units with a 2.0 grade point average.
d. Complete at least 12 units at Ohlone College.
Student Learning Outcomes
1. Support the data management needs of business through the design, implementation and maintenance of relational databases.
2. Demonstrate appreciation of the ICT career field and the need to be lifelong learners.
3. Demonstrate a basic database computer programming language knowledge and skills.

MAJOR FIELD
CNET-103 Introduction to Business Intelligence 4
CNET-135 Oracle Database Administration 2
CNET-137 Introduction to SQL 4
CNET-146 Introduction to UNIX/Linux 3
CNET-162 Windows Server Installation and Configuration Administration 2
CNET-170 Network Security (Security+) 4

Total Units = 19

SUPPORTING COURSES
Complete a minimum of six units from the following courses:
CNET-108 IT Project Management 3
CNET-120 VMware: Install, Configure, Manage 2
CNET-142 Introduction to Programming with Python 4
CNET-147 UNIX/Linux Shell Scripting 4
CNET-155A Introduction to Networks (CCNA1) 3
CNET-164 Windows Server Administration 2

Complete 1-4 units from the following courses:
WEX-195A1 Occupational Work Experience Education 1
WEX-195A2 Occupational Work Experience Education 2
WEX-195A3 Occupational Work Experience Education 3
WEX-195A4 Occupational Work Experience Education 4

Total Units = 11-19

Complete a minimum of four units from the following courses:
CNET-105 IT Essentials (CompTIA A+) 4
CNET-107 IT Service Management (ITIL) 3
CNET-122A Information Storage and Management - EMC 2
CNET-122B Cloud Infrastructure and Services 2
CNET-172 CCNA Security 3
CNET-175 Cloud Security Fundamentals 4
CS-102 Introduction to Computer Programming Using C++ 3

Total Units = 30-38

- Change catalog description.
- Change requirements.
- Change GE requirement from IGETC to IGETC for CSU.
- Change student learning outcomes.
- Remove CNET-136, CNET-155A, COMM-125, and ENGL-156 from Major Field.
- Remove CNET-168A and CNET-168B from Major Field so the courses can be deactivated.
- Add CNET-103, CNET-146, CNET-162, and CNET-170 to Major Field.
- Change Major Field units from 18 to 19.
- Remove Database Administrator Focus.
- Add CNET-108, CNET-120, CNET-142, CNET-147, CNET-155A, and CNET-164 to new requirement of completing a minimum of six units of Supporting Courses.
- Change Supporting Courses requirement from four units to a minimum of four units.
- Remove CNET-108, CNET-120, CNET-170, CS-104A, and CS-145 from Supporting Courses (four units requirement).
- Remove CS-145 from Supporting Courses (minimum four units requirement) so the course can be deactivated.
- Add CNET-107, CNET-172, and CNET-175 to Supporting Courses (four units requirement).
- Change total units from 31-34 to 30-38.

Information Technology: Associate in Science – Ron Sha
The Associate in Science in Information Technology prepares students to either enter the workforce as an IT support technician or IT system administrator, or pursue a bachelor's degree in managing information systems.

IT support technicians provide technical assistance to computer users. They may answer questions or resolve computer problems for clients in person, or via telephone or electronically. They may provide assistance concerning the use of computer hardware and software, including printing, installation, word processing, electronic mail, and operating systems. Computer network technicians analyze, test, troubleshoot, and evaluate existing network systems, such as local area network (LAN), wide area network (WAN), and Internet systems or a segment of a network system. They perform network maintenance to ensure networks operate correctly with minimal interruption.

Graduates of the Associate in Science in Information Technology are prepared and eligible to sit for CompTIA's A+ and Network+ certification exams. Optional elective courses prepare students for CompTIA's Server+ and Security+ exams.

a. Complete Major Field, Elective Courses, and Supporting Courses with a grade of C or better.
b. Complete Ohlone College General Education (Plan A), CSU GE (Plan B), or IGETC for CSU (Plan C) requirements. These requirements are specified in the Ohlone College catalog.
c. Complete at least 60 degree-applicable units with a 2.0 grade point average.
d. Complete at least 12 units at Ohlone College.

Student Learning Outcomes
1. Apply fundamental knowledge of computing and the current use of technology techniques, skills, and tools necessary for the computing practice.
2. Demonstrate the ability to locate, critically evaluate, and solve business problems with technology solutions using qualitative and quantitative information.
3. Demonstrate a fundamental ability to identify and analyze user needs in the selection, creation, evaluation, and administration of computer-based systems.
4. Provide information technology technical assistance to computer and network users.
5. Demonstrate appreciation of the IT career field and the need to be lifelong learners.
6. Demonstrate a basic knowledge and skills of computer programming language.
7. Demonstrate broad understanding of Information Technology related knowledge in the area of Networking, Operating Systems, Cyber Security and Programming Languages.

MAJOR FIELD

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CNET-137</td>
<td>Introduction to SQL</td>
<td>4</td>
</tr>
<tr>
<td>CNET-142</td>
<td>Introduction to Programming with Python</td>
<td>4</td>
</tr>
<tr>
<td>CNET-146</td>
<td>Introduction to UNIX/Linux</td>
<td>3</td>
</tr>
<tr>
<td>CNET-155A</td>
<td>Introduction to Networks (CCNA1)</td>
<td>3</td>
</tr>
<tr>
<td>CNET-162</td>
<td>Windows Server Installation and Configuration Administration</td>
<td>2</td>
</tr>
<tr>
<td>CNET-170</td>
<td>Network Security (Security+)</td>
<td>4</td>
</tr>
</tbody>
</table>

Total Units = 20
ELECTIVE COURSES
Courses cannot be counted more than once to apply towards both Elective Courses and Supporting Courses. Complete a minimum of six units from the following courses:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CNET-105</td>
<td>IT Essentials (CompTIA A+)</td>
<td>4</td>
</tr>
<tr>
<td>CNET-108</td>
<td>IT Project Management</td>
<td>3</td>
</tr>
<tr>
<td>CNET-135</td>
<td>Oracle Database Administration</td>
<td>2</td>
</tr>
<tr>
<td>CNET-155B</td>
<td>Routing and Switching Essentials (CCNA2)</td>
<td>3</td>
</tr>
<tr>
<td>CNET-172</td>
<td>CCNA Security</td>
<td>3</td>
</tr>
<tr>
<td>CNET-173</td>
<td>Ethical Hacking</td>
<td>3</td>
</tr>
<tr>
<td>CNET-174</td>
<td>Computer Forensics</td>
<td>3</td>
</tr>
<tr>
<td>CNET-175</td>
<td>Cloud Security Fundamentals</td>
<td>4</td>
</tr>
</tbody>
</table>

Total Units = 6-9

SUPPORTING COURSES
Courses cannot be counted more than once to apply towards both Elective Courses and Supporting Courses. Complete a minimum of nine units from the following courses:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CNET-103</td>
<td>Introduction to Business Intelligence</td>
<td>4</td>
</tr>
<tr>
<td>CNET-105</td>
<td>IT Essentials (CompTIA A+)</td>
<td>4</td>
</tr>
<tr>
<td>CNET-108</td>
<td>IT Project Management</td>
<td>3</td>
</tr>
<tr>
<td>CNET-120</td>
<td>VMware: Install, Configure, Manage</td>
<td>2</td>
</tr>
<tr>
<td>CNET-122A</td>
<td>Information Storage and Management - EMC</td>
<td>2</td>
</tr>
<tr>
<td>CNET-132</td>
<td>Introduction to Data Analytics</td>
<td>2</td>
</tr>
<tr>
<td>CNET-135</td>
<td>Oracle Database Administration</td>
<td>2</td>
</tr>
<tr>
<td>CNET-172</td>
<td>CCNA Security</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Units = 9-12

Total Units = 35-41

- Change catalog description.
- Change student learning outcomes.
- Change GE requirement from IGETC to IGETC for CSU.
- Remove CNET-103, CS-101, CNET-105, and CS-102 from Major Field.
- Remove CNET-154 from Major Field so the course can be deactivated.
- Add CNET-137, CNET-142, CNET-146, CNET-162, and CNET-170 to Major Field.
- Change Major Field units from 13-14 to 20.
- Add double counting statement to Elective Courses.
- Remove CNET-137 and CNET-170 from Elective Courses.
- Remove CNET-151 from Elective Courses so the course can be deactivated.
- Add CNET-105, CNET-172, and CNET-175 to Elective Courses.
- Change Elective units from 6-8 to 6-9.
- Add double counting statement to Supporting Courses.
- Change statement requiring a minimum of three units of Supporting Courses to a minimum of nine units of Supporting Courses.
- Remove CNET-140, CNET-146, CNET-162, and CNET-164 from Supporting Courses.
- Change Supporting Courses units from 3-4 to 9-12.
- Change total units from 22-26 to 35-41.
IT Service and Support: Associate in Science – Ron Sha

IT Service and Support technicians provide a single point of contact for end users to receive support and maintenance within the organization’s desktop computing environment. This includes installing, diagnosing, repairing, maintaining, and upgrading all PC hardware and equipment to ensure optimal workstation performance. The technician will also troubleshoot problem areas (in person, by telephone, or via email) in a timely and accurate fashion, and provide end-user assistance where required.

Computer support technicians provide technical assistance to computer users. They may answer questions or resolve computer problems for clients in person, via telephone, or electronically. They may provide assistance concerning the use of computer hardware and software, including printing, installation, word processing, electronic mail, and operating systems. Computer network technicians analyze, test, troubleshoot, and evaluate existing network systems, such as local area network (LAN), wide area network (WAN), and Internet systems or a segment of a network system. Perform network maintenance to ensure networks operate correctly with minimal interruption.

Graduates with an Associate in Science in IT Service and Support are prepared and eligible to sit for CompTIA's A+ and Network+ certification exams. Optional elective courses prepare students for CompTIA's Server+ and Security+ exams.

The Associate in Science in IT Service and Support prepares students to either enter the workforce as an entry-level computer or network support technician or pursue a bachelor’s degree in managing information systems.

a. Complete Major Field, Supporting Courses, and Internship with a grade of C or better.
b. Complete Ohlone College General Education (Plan A), CSU GE (Plan B), or IGETC for CSU (Plan C). These requirements are specified in the Ohlone College catalog.
c. Complete at least 60 degree-applicable units with a 2.0 grade point average.
d. Complete at least 12 units at Ohlone College.

Student Learning Outcomes
1. Demonstrate confidence to work independently to setup, configure, and maintain a desktop computer (client or server); stand-alone application; and/or computer system.
2. Demonstrate techniques to troubleshoot situations that impact the operation of a desktop computer (client or server); stand-alone application; and/or computer system.
3. Demonstrate appreciation of the ICT career field and the need to be lifelong learners.
4. Demonstrate the understanding of IT service management concepts such as IT processes, procedures, tasks, and checklists as part of ITIL framework.

MAJOR FIELD
CNET-105 IT Essentials (CompTIA A+) 4
CNET-107 IT Service Management (ITIL) 3
CNET-120 VMware: Install, Configure, Manage 2
CNET-142 Introduction to Programming with Python 4
CNET-146 Introduction to UNIX/Linux 3
CNET-162 Windows Server Installation and Configuration Administration 2
CNET-170 Network Security (Security+) 4

Total Units = 22

SUPPORTING COURSES
Complete a minimum of five units from the following courses:
CNET-104 Introduction to Emerging Technologies 3
CNET-108 IT Project Management 3
CNET-122A Information Storage and Management - EMC 2
CNET-155A Introduction to Networks (CCNA1) 3
CNET-156B Connecting Networks (CCNA4) 2

Total Units = 5-7
• Change catalog description.
• Change GE requirement from IGETC to IGETC for CSU.
• Change student learning outcomes.
• Remove CNET-151 and CNET-154 from Major Field so the courses can be deactivated.
• Add CNET-120, CNET-142, CNET-146, CNET-162, and CNET-170 to Major Field.
• Change Major Field units from 20 to 22.
• Change statement requiring 3-4 units of Supporting Courses to a minimum of five units of Supporting Courses.
• Remove CNET-101/CS-101, CNET-152/CS-152, CNET-155B, CNET-170, CS-102, and CS-104A from Supporting Courses.
• Remove CNET-145/CS-145 and CNET-157/CS-157 from Supporting Courses so the courses can be deactivated.
• Add CNET-104, CNET-122A, CNET-155A, and CNET-156B to Supporting Courses.
• Change Supporting Courses units from 34-4 to 5-7.
• Change total units from 27-28 to 31-33.

Network Administrator: Associate in Science – Ron Sha
Network administrators manage all of the day-to-day aspects of a computer network. In addition to configuring networks they are responsible for making the network operational 24 hours a day. Tasks performed include installing and configuring new equipment, including desktop PCs and servers; troubleshooting day-to-day problems and unusual issues with networked equipment; and evaluating the need for upgrades or replacements of current computer hardware and software solutions. Students who complete this program can become employed as a network administrator in virtually all businesses and enterprises where computers and networks are used. Students are also well prepared for industry certification.

Computer networks are critical parts of almost every organization. Network and computer systems administrators are responsible for the day-to-day operation of these networks. They organize, install, and support an organization’s computer systems, including local area networks (LANs), wide area networks (WANs), network segments, intranets, and other data communication systems.

Network administrators manage an organization’s servers and desktop and mobile equipment. They ensure that email and data storage networks work properly. They also make sure that employees’ workstations are working efficiently and stay connected to the central computer network. Some administrators manage telecommunication networks.

The Associate in Science in Network Administrator prepares students to either enter the workforce as a network administrator or pursue a bachelor’s degree in managing information systems.

Requirements for Associate in Science Degree
a. Complete Major Field and Supporting Courses with a grade of C or better.
b. Complete at least 60 degree-applicable units with a 2.0 grade point average.
c. Complete at least 12 units at Ohlone College.
Student Learning Outcomes
2. Describe the operations and benefits of the Spanning Tree Protocol (STP).
3. Describe the operations and benefits of link aggregation and Cisco VLAN Trunk Protocol (VTP).
5. Configure and troubleshoot advanced operations of routers and implement RIP, OSPF, and EIGRP routing protocols for IPv4 and IPv6.
6. Manage Cisco IOS® Software licensing and configuration files.

MAJOR FIELD
CNET-142 Introduction to Programming with Python 4
CNET-146 Introduction to UNIX/Linux 3
CNET-155A Introduction to Networks (CCNA1) 3
CNET-155B Routing and Switching Essentials (CCNA2) 3
CNET-156A Scaling Networks (CCNA3) 2
CNET-156B Connecting Networks (CCNA4) 2
CNET-162 Windows Server Installation and Configuration Administration 2
CNET-170 Network Security (Security+) 4

Total Units = 23

SUPPORTING COURSES
Complete one course from the following courses:
WEX-195A1 Occupational Work Experience Education OR 1
WEX-195A2 Occupational Work Experience Education OR 2
WEX-195A3 Occupational Work Experience Education OR 3
WEX-195A4 Occupational Work Experience Education 4

Complete 5-8 units from the following courses:
CNET-105 IT Essentials (CompTIA A+) 4
CNET-107 IT Service Management (ITIL) 3
CNET-108 IT Project Management 3
CNET-120 VMware: Install, Configure, Manage 2
CNET-122A Information Storage and Management - EMC 2
CNET-122B Cloud Infrastructure and Services 2
CNET-135 Oracle Database Administration 2
CNET-137 Introduction to SQL 4
CNET-164 Windows Server Administration 2
CNET-172 CCNA Security 3
CNET-173 Ethical Hacking 3
CNET-174 Computer Forensics 3
CNET-175 Cloud Security Fundamentals 4

Total Units = 6-12
Total Units = 29-35

- Change catalog description.
- Change GE requirement from IGETC to IGETC for CSU.
- Change student learning outcomes.
- Remove CNET-164, CNET-140, COMM-125, and ENGL-156 from Major Field.
- Add CNET-142 and CNET-146 to Major Field.
- Remove CNET-136, CNET-141, CNET-146, and CNET-166 from Supporting Courses.
- Remove CNET-124A, CNET-124B, CNET-158, CNET-180, CNET-182, CNET-184, and CNET-186 from Supporting Courses so the courses can be deactivated.
- Add CNET-107, CNET-137, CNET-164, CNET-173, CNET-174, and CNET-175 to Supporting Courses.
- Change Supporting Courses units from 5-8 to 6-12.
- Change total units from 27-33 to 29-35.
System Administration: Associate in Science – Ron Sha

The Associate in Science in System Administration prepares students to either enter the workforce as an entry-level information and communication technologies (ICT) professional or pursue a bachelor's degree in managing information systems. Graduates of the Associate in Science in System Administration are prepared and eligible to sit for Microsoft and/or Linux certification exams. Competency in Microsoft® and/or Unix/Linux systems administration and network administration is required.

A system administrator, or "sysadmin," is a person who is responsible for the upkeep, configuration, and reliable operation of computer systems, especially multi-user computers such as servers. The system administrator seeks to ensure that the uptime, performance, resources, and security of the computers he or she manages meet the needs of the users, without exceeding the budget. To meet these needs a system administrator may acquire, install, or upgrade computer components and software; automate routine tasks; write computer programs; troubleshoot; train and/or supervise staff; and provide technical support.

Generally, no courses beyond standard high school diploma requirements are needed to be admitted into these programs. However, most recommend a background in computer science, information systems, and information and communication technologies.

Most graduates enter the workforce as system administrator or sysadmin. New employment opportunities as Storage (SAN) Administrator require the system administrator to create, provision, add, or remove storage to/from computer systems and work with virtualization. Sysadmins can also work as a database administrator, network administrator, security administrator, and/or a web administrator. Tasks include managing multiple sites, administering security, and configuring necessary components and software. Responsibilities may also include software change management.

As the use of technology expands throughout the economy, available positions in system administration are expected to grow. Employment of network and computer systems administrators is expected to grow 5% from 2018 to 2028, according to the Bureau of Labor Statistics (www.bls.gov). Demand for these workers is high and should continue to grow as firms invest in newer, faster technology and mobile networks. System Administrators are employed in all industries where there are computers, which means the majority of companies such as in the computer system design and related services industry, financial firms, hospitals, and government offices.

Requirements for AS Degree:
   a. Complete Major Field courses; System Administrator Focus courses; and Supporting Courses with a grade of C or better.
   b. Complete Ohlone College General Education (Plan A), CSU GE (Plan B), or IGETC for CSU (Plan C) requirements. These requirements are specified in the Ohlone College catalog.
   c. Complete at least 60 degree-applicable units with a 2.0 grade point average.
   d. Complete at least 12 units at Ohlone College.

Student Learning Outcomes
1. Setup, configure, maintain, and troubleshoot computer systems, stand-alone application, and/or various computer operating systems (client, server, and network).
2. Demonstrate appreciation of the ICT career field and the need to be lifelong learners.
3. Demonstrate the basic knowledge and skills of programming languages.

MAJOR FIELD
CNET-142 Introduction to Programming with Python 4
CNET-146 Introduction to UNIX/Linux 3
CNET-155A Introduction to Networks (CCNA1) 3
CNET-162 Windows Server Installation and Configuration Administration 2
CNET-170 Network Security (Security+) 4

Total Units = 16
System Administrator Focus
Courses cannot be counted more than once to apply towards System Administrator Focus and Supporting Courses.

Complete a minimum of eight units from the following courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CNET-120</td>
<td>VMware: Install, Configure, Manage</td>
<td>2</td>
</tr>
<tr>
<td>CNET-122A</td>
<td>Information Storage and Management - EMC</td>
<td>2</td>
</tr>
<tr>
<td>CNET-122B</td>
<td>Cloud Infrastructure and Services</td>
<td>2</td>
</tr>
<tr>
<td>CNET-135</td>
<td>Oracle Database Administration</td>
<td>2</td>
</tr>
<tr>
<td>CNET-137</td>
<td>Introduction to SQL</td>
<td>4</td>
</tr>
<tr>
<td>CNET-147</td>
<td>UNIX/Linux Shell Scripting</td>
<td>4</td>
</tr>
<tr>
<td>CNET-156A</td>
<td>Scaling Networks (CCNA3)</td>
<td>2</td>
</tr>
<tr>
<td>CNET-156B</td>
<td>Connecting Networks (CCNA4)</td>
<td>2</td>
</tr>
<tr>
<td>CNET-164</td>
<td>Windows Server Administration</td>
<td>2</td>
</tr>
<tr>
<td>CNET-172</td>
<td>CCNA Security</td>
<td>3</td>
</tr>
<tr>
<td>CNET-173</td>
<td>Ethical Hacking</td>
<td>3</td>
</tr>
<tr>
<td>CNET-174</td>
<td>Computer Forensics</td>
<td>3</td>
</tr>
<tr>
<td>CNET-175</td>
<td>Cloud Security Fundamentals</td>
<td>4</td>
</tr>
</tbody>
</table>

Total Units = 8-10

SUPPORTING COURSES
Courses cannot be counted more than once to apply towards System Administrator Focus and Supporting Courses.

Complete 1-4 units from the following courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
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</thead>
<tbody>
<tr>
<td>WEX-195A1</td>
<td>Occupational Work Experience Education</td>
<td>1</td>
</tr>
<tr>
<td>WEX-195A2</td>
<td>Occupational Work Experience Education</td>
<td>2</td>
</tr>
<tr>
<td>WEX-195A3</td>
<td>Occupational Work Experience Education</td>
<td>3</td>
</tr>
<tr>
<td>WEX-195A4</td>
<td>Occupational Work Experience Education</td>
<td>4</td>
</tr>
</tbody>
</table>

Complete a minimum of four units from the following courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CNET-105</td>
<td>IT Essentials (CompTIA A+)</td>
<td>4</td>
</tr>
<tr>
<td>CNET-108</td>
<td>IT Project Management</td>
<td>3</td>
</tr>
<tr>
<td>CNET-147</td>
<td>UNIX/Linux Shell Scripting</td>
<td>4</td>
</tr>
<tr>
<td>CNET-155B</td>
<td>Routing and Switching Essentials (CCNA2)</td>
<td>3</td>
</tr>
<tr>
<td>CNET-160A</td>
<td>MS Client Operating Systems</td>
<td>2</td>
</tr>
<tr>
<td>CNET-170</td>
<td>Network Security (Security+)</td>
<td>4</td>
</tr>
<tr>
<td>CNET-172</td>
<td>CCNA Security</td>
<td>3</td>
</tr>
<tr>
<td>CS-102</td>
<td>Introduction to Computer Programming Using C++</td>
<td>3</td>
</tr>
<tr>
<td>CS-125</td>
<td>Introduction to Java Programming</td>
<td>4</td>
</tr>
</tbody>
</table>

Total Units = 5-11
Total Units = 29-37

- Change catalog description.
- Change requirements.
- Change GE requirement from IGETC to IGETC for CSU.
- Change student learning outcomes.
- Remove CNET-120, CNET-122A, CNET-122B, CNET-164, COMM-125, and ENGL-156 from Major Field.
- Add CNET-142 and CNET-170 to Major Field.
- Remove Linux System Administration Focus and Microsoft System Administrator Focus.
- Add double counting statement to System Administrator Focus.
- Remove CNET-140 and CNET-166 from System Administrator Focus.
- Remove CNET-141, CNET-167, CNET-168A, and CNET-168B from System Administrator Focus so the courses can be deactivated.
- Add double counting statement to Supporting Courses.
- Remove CS-104A, CS-147, CS-152, from Supporting Courses.
- Remove CNET-158, CNET-180, CNET-182, CNET-184, CNET-186, CS-145, CS-149, and CS-157 from Supporting Courses so the courses can be deactivated.
- Change Supporting Courses units from 4-6 to 5-11.
- Change total units from 32-37 to 29-37.
New Degrees and Certificates

Network Administrator: Certificate of Accomplishment – Ron Sha

Network administrators manage all of the day-to-day aspects of a computer network. In addition to configuring networks they are responsible for making the network operational 24 hours a day. Tasks performed include installing and configuring new equipment, including desktop PCs and servers; troubleshooting day-to-day problems and unusual issues with networked equipment; and evaluating the need for upgrades or replacements of current computer hardware and software solutions. Students who achieve this program can become employed as a network administrator in virtually all businesses and enterprises where computers and networks are used. Students are also well prepared for industry certification.

Certificates of accomplishment are awarded upon the completion of an organized course of study for a specific purpose, usually career or job related. Certificates of accomplishment consist of a maximum of 17.5 units and allow students to finish the program in a shorter period of time. Certificates of accomplishment are approved by Ohlone's Curriculum Committee and the Ohlone Community College Board of Trustees, but are not approved by the California Community Colleges Chancellor's Office. Therefore, per Title 5 of the California Code of Regulations (55070.b), certificates of accomplishment may not appear on a student's transcript.

In order to earn a certificate of accomplishment students must:

a. complete satisfactorily the courses listed for the particular certificate.
b. complete at least 50% of the required units at Ohlone College.
c. maintain a 2.0 grade point average.

Student Learning Outcomes

1. Demonstrate confidence to work independently to setup, configure, and maintain a network; stand-alone or network application; and a network system.
2. Demonstrate techniques to troubleshoot situations that impact a network; stand-alone or network application; and a network system.

MAJOR FIELD

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CNET-146</td>
<td>Introduction to UNIX/Linux</td>
<td>3</td>
</tr>
<tr>
<td>CNET-155A</td>
<td>Introduction to Networks (CCNA1)</td>
<td>3</td>
</tr>
<tr>
<td>CNET-162</td>
<td>Windows Server Installation and Configuration Administration</td>
<td>2</td>
</tr>
<tr>
<td>CNET-170</td>
<td>Network Security (Security+)</td>
<td>4</td>
</tr>
</tbody>
</table>

Total Units = 12

Environmental Science: Associate in Science for Transfer – Narinder Bansal

The Student Transfer Achievement Reform Act (Senate Bill 1440, now codified in California Education Code sections 66746-66749) guarantees admission to a California State University (CSU) campus for any community college student who completes an "associate degree for transfer," a newly established variation of the associate degrees traditionally offered at a California community college. The Associate in Science in Environmental Science for Transfer is intended for students who plan to complete a bachelor's degree in a similar major at a CSU campus. Students completing this degree are guaranteed admission to the CSU system, but not to a particular campus or major. In order to earn one of these degrees, students must complete 60 required semester units of CSU-transferable coursework with a minimum GPA of 2.0. Students should consult with a counselor when planning to complete the degree for more information on university admission and transfer requirements. Completion of the requirements for the Associate in Science in Environmental Science for Transfer prepares students for transfer to a California State University to engage in upper division work towards a baccalaureate degree in Environmental Science. As an interdisciplinary and multidisciplinary course of study, students are presented an overview of ecological issues from a scientific perspective. With a broad foundation across the natural, physical, and biological sciences, students better understand the interrelated nature of environmental and social
systems. This program is designed to equip students with the skills and tools to successfully use the scientific method while studying and solving environmental problems.

Requirements for Associate in Science for Transfer Degree:

a. Complete Required Core, List A, and List B courses with a grade of C or better.

b. Complete CSU GE (Plan B) or IGETC for STEM for CSU (Plan C) requirements. These requirements are specified in the Ohlone College catalog.

c. Complete 60 CSU-transferable semester units.

d. Obtain a minimum grade point average (GPA) of at least 2.0 in all CSU-transferable coursework. While a minimum GPA of 2.0 is required for admission, some majors may require a higher GPA. Please consult with a counselor for more information.

e. Complete 38 semester units in the Environmental Science major.

f. Complete at least 12 units at Ohlone College.

Student Learning Outcomes

1. Apply and relate the scientific method and synthesize its role in the development of scientific thought.

2. Critically evaluate scientific information and examine its significance and impact on society and the environment.

3. Demonstrate an understanding of the interdisciplinary nature of environmental issues.

4. Analyze and interpret quantitative data and visual representations of data.

REQUIRED CORE

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL-101A</td>
<td>Principles of Biology - Molecular and Cellular Biology</td>
<td>5</td>
</tr>
<tr>
<td>CHEM-101A</td>
<td>General Chemistry</td>
<td>5</td>
</tr>
<tr>
<td>CHEM-101B</td>
<td>General Chemistry</td>
<td>5</td>
</tr>
</tbody>
</table>

Total Units = 15

LIST A

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENVS-108</td>
<td>Introduction to the Environment</td>
<td>3</td>
</tr>
<tr>
<td>GEOG-101</td>
<td>Physical Geography OR</td>
<td>4</td>
</tr>
<tr>
<td>GEOL-101</td>
<td>Introduction to Geology</td>
<td>4</td>
</tr>
<tr>
<td>MATH-101A</td>
<td>Calculus With Analytic Geometry</td>
<td>5</td>
</tr>
<tr>
<td>MATH-159</td>
<td>Introduction to Statistics</td>
<td>5</td>
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</tbody>
</table>

Total Units = 17

LIST B

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>BA-102B</td>
<td>Principles of Economics-Microeconomics</td>
<td>3</td>
</tr>
<tr>
<td>PHYS-140</td>
<td>Mechanics</td>
<td>4</td>
</tr>
<tr>
<td>PHYS-141</td>
<td>Electricity and Magnetism</td>
<td>4</td>
</tr>
</tbody>
</table>

Total Units = 11

Total Units = 43

ISSUES (Action/Information)

None

ANNOUNCEMENTS

- Screening/Norming Meeting: Wednesday, January 22, 2020, 9:00am – 12:00pm, Room TBA
- Issues Meeting: Monday, February 3, 2020, 3:00pm-5:00pm, Fremont campus 7101 and Zoom Video Conference